

College of Science

College of Science

Dean's Welcome

Welcome to the Purdue University College of Science. I am delighted that you are interested in our programs, and I welcome you to join us in making scientific breakthroughs that move the world forward.

I also welcome you to learn more about Purdue Science academics and opportunities, your many options for careers in science, and all about Purdue student life.

All of us at the College of Science look forward to welcoming you to the Boilermaker family. To get a sense of what it is really like to be here, there is no substitute for a visit to campus. Our recruiting office would love to host you, and our current students very much want to meet you and show you around. I also hope to meet you at a future Meet the Dean event. To learn more about your options for visiting and upcoming events, please call 765-494-1990 or e-mail sciencerecruiting@purdue.edu.

I extend my very best wishes to you as you embark on this exciting chapter in your life.

Hail Purdue!

Patrick J. Wolfe

Frederick L. Hovde Dean of Science and Miller Family Professor of Statistics

College of Science Administration: Go to information for this department.

Departmental Pages:

- Biological Sciences
- Chemistry
- Computer Sciences
- Earth, Atmospheric and Planetary Sciences
- Mathematics
- Physics and Astronomy
- Statistics

Admissions More Information

Admission to Teacher Education More Information

Advising: More Information

College of Science: Policy Information

Contact Information

Mailing address:

Purdue University College of Science
150 N. University St
West Lafayette, IN 47907

Directories

- Science Administration
- Office of Undergraduate Education
- Departments
- Science IT

Phone and Fax:

Student Advising Office

- 765-494-1771 (office)
- 765-496-3015 (fax)

Science Administration

- 765-494-1729 (office)
- 765-494-1736 (fax)

Science IT Helpline

- 765-494-4488

College of Science Core Requirements

- Composition and Presentation Core
- Computing Core
- Cultural Diversity Core
- General Education Core
- Great Issues in Science
- Laboratory Science Core
- Mathematics Core
- Multidisciplinary Experience Core
- Statistics Core
- Teambuilding and Collaboration Core
- No Count Course List

College of Science Administration

About the Department of Science Administration

During their Purdue career, students will be able to take advantage of the many benefits the College of Science has to offer. From Nobel Prize-winning faculty to undergraduate research opportunities and study abroad opportunities to facilities found in the international spotlight, the College of Science is recognized and renowned.

Faculty

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Contact Individual College of Science Groups:

- Advising - email
- Graduate Education and International Programs - email
- Dean's Office - email
 - Speech/Appearance request form
- Research - email
- Academic Affairs - email
- Undergraduate Education - email
- Science Diversity - email
- Strategic Relations - email
- Recruiting - email
- K-12 Outreach - email
- Special Events & Alumni Relations - email
- Science Advancement - email
- Science IT - email

Baccalaureate

Interdisciplinary Science, BS (Biology)

About the Program

The interdisciplinary science major is designed to provide College of Science students with a broad base in the sciences. By combining a primary area of science study, an interdisciplinary science core, a supporting area of academic interest and the core curriculum shared by all College of Science programs, students explore how the disciplines of science come together to identify and solve scientific challenges. Students customize the major by selecting a departmental or interdepartmental primary area based in science and a supporting area that complements or enhances the primary area. This supporting area may be an approved minor from any college or school at the University or a concentration of 18 credits of courses with a unifying theme. There is a primary area representing each department in the College of Science, however, cross-disciplinary areas may be explored and added as appropriate. With the help of either a faculty member or an academic advisor, students are encouraged to petition for approval of their supporting area.

The Interdisciplinary Science Major is designed to give a student a broad base in the sciences with more depth in a Primary Area of Science and a Supporting Area, usually outside of Science. The Core courses are common across the major but the student customizes the major by selecting a departmental or interdepartmental Primary Area based in Science and a Supporting Area which may come from any college or school at the University. There is a Primary Area representing each department in the College of Science and cross-disciplinary areas will be explored and added as appropriate. Several Supporting Areas will be suggested and a student may petition for approval of others.

Students completing the interdisciplinary science major have gone on to a variety of careers - some in, and others out of, the world of science. These careers include medicine, law and other advanced-study professions, scientific sales, technical and scientific writing, computer programming and engineering.

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Degree Requirements

120 Credits Required

Departmental/Program Major Courses (68-80 credits)

Required Interdisciplinary Core Courses (68-80 credits)

Required Biology Courses (7-8 credits)

Satisfies Science Selective for core:

- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II
OR
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior and
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms and
- BIOL 13500 - First year Biology Laboratory

Required Chemistry Courses (5-10 credits)

- CHM 12901 - General Chemistry With A Biological Focus or
- CHM 13600 - General Chemistry Honors (*satisfies Science Selective for core*) or
- CHM 11500 - General Chemistry (*satisfies Science Selective for core*) and
- CHM 11600 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12500 - Introduction To Chemistry I AND (*satisfies Science Selective for core*) and
- CHM 12600 - Introduction To Chemistry II (*satisfies Science Selective for core*)

Required Computing Option (3-4 credits)

- CS 15800 - C Programming or
- CS 15900 - Programming Applications For Engineers or
- CS 17700 - Programming With Multimedia Objects or
- CS 18000 - Problem Solving And Object-Oriented Programming

Required Earth, Atmospheric, and Planetary Science Selective Courses (3 credits)

Select courses COULD satisfy Science Selective for core:

- EAPS 10000 - Planet Earth or
- EAPS 10900 - The Dynamic Earth or
- EAPS 11100 - Physical Geology or
- EAPS 22100 - Survey Of Atmospheric Science or
- EAPS 22500 - Science Of The Atmosphere

Required Mathematics Courses (6-10 credits)

Satisfies Quantitative Reasoning for core:

- MA 16010 - Applied Calculus I and
- MA 16020 - Applied Calculus II
OR
- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
AND
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Required Physics Selective Courses (8 credits)

- PHYS 22000 - General Physics (*satisfies Science Selective for core*) and
- PHYS 22100 - General Physics (*satisfies Science Selective for core*)
or
- PHYS 17200 - Modern Mechanics (*satisfies Science Selective for core*) and
- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science Selective for core*) or
- PHYS 24100 - Electricity And Optics (*satisfies Science Selective for core*) and
- PHYS 25200 - Electricity And Optics Laboratory (*satisfies Science Selective for core*) or
- PHYS 23300 - Physics For Life Sciences I
- PHYS 23400 - Physics For Life Sciences II

Required Statistics Courses (3 credits)

- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

Required Biology Primary Area Courses (15-16 credits)

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- BIOL 32800 - Principles Of Physiology or
- BIOL 36700 - Principles Of Development and
- BIOL 36701 - Principles Of Development Lab or
- BIOL 39500 - Special Assignments (Macromolecules) or
- BIOL 41500 - Introduction To Molecular Biology or
- BIOL 41600 - Viruses And Viral Disease or
- BIOL 42000 - Eukaryotic Cell Biology or
- BIOL 43600 - Neurobiology or

- BIOL 43800 - General Microbiology

Required Supporting Area Courses (18 credits)

MUST BE APPROVED BY COLLEGE

Other Departmental/Program Course Requirements (18-31 credits)

- MA 16010 - Applied Calculus I Calculus I Option within major - (*satisfies Quantitative Reasoning for core*) ♦,
 - MA 16020 - Applied Calculus II Calculus II Option within major - (*satisfies Quantitative Reasoning for core*) ♦,
 - ENGL 10600 - First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
 - SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
 - ENGL 10800 - Accelerated First-Year Composition (*satisfies Written Communication and Information Literacy for core*)
 - Language I Option*: (*Select courses COULD satisfy Human Cultures Humanities for core*) - Credit Hours: 0.00 - 4.00
 - Language II Option*: (*Select courses COULD satisfy Human Cultures Humanities for core*) - Credit Hours: 0.00 - 4.00
 - Language III/Culture/Diversity Option*: (*Select courses COULD satisfy Human Cultures Humanities for core*) - Credit Hours: 0.00 - 4.00
 - Technical Writing Option and Technical Presenting Option: (*Select courses COULD satisfy Oral Communication for core*) - Credit Hours: 3.00 - 6.00
 - Laboratory Science I Option: within major - (*satisfies Science Selective for core*)
 - Laboratory Science II Option: within major- (*satisfies Science Selective for core*)
 - General Education I Option: (*Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core*) - Credit Hours: 3.00
 - General Education II Option: (*Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core*) - Credit Hours: 3.00
 - General Education III Option: (*Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core*) - Credit Hours: 3.00
 - STAT 35000 - Introduction To Statistics
 - Computing Option: within major
 - Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
 - Great Issues Option: Credit Hours: 3.00
 - Multidisciplinary Experience* (*Select courses COULD satisfies Science, Technology, and Society Selective for core*) - Credit Hours: 0.00 - 3.00
- *Requirement may be met with a zero credit experiential learning option. See your advisor for more information.*

Electives (9-34 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication

- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Calculus Option I - Credit Hours: 3.00 - 5.00
- General Chemistry Selective I - Credit Hours: 4.00 - 5.00
- Biology Selective I - Credit Hours: Credit Hours: 4.00
- Elective - Credit Hours: 0.00 - 1.00

15-18 Credits

Spring 1st Year

- Calculus Option II - Credit Hours: 3.00 - 5.00
- Language I Option - Credit Hours: 3.00 - 4.00
- General Chemistry Selective II or Elective - Credit Hours: 4.00 - 5.00
- Biology Selective II - Credit Hours: 3.00 - 4.00
- Biology Selective II or Elective - Credit Hours: 0.00 - 2.00

14-16 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- COM 21700 - Science Writing And Presentation or Technical Presentation - Credit Hours: 3.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Supporting Area Course - Credit Hours: 3.00
- Elective - Credit Hours: 0.00 - 1.00

15-16 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Supporting Area Course - Credit Hours: 3.00
- General Education I Option - Credit Hours: 3.00
- Elective - Credit Hours: 0.00 - 1.00

15-16 Credits

Fall 3rd Year

- Supporting Area Course - Credit Hours: 3.00
- STAT Option - Credit Hours: 3.00
- Teambuilding and Collaboration Experience - Credit Hours: 3.00 - 4.00
- Computing Option - Credit Hours: 3.00 - 4.00
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

- BIOL 28600 - Introduction To Ecology And Evolution
- EAPS Selective Course - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- General Education III Option - Credit Hours: 3.00
- Technical Writing or Elective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15 Credits

Fall 4th Year

- BIOL 39500 - Special Assignments or
- BIOL 41500 - Introduction To Molecular Biology or
- BIOL 42000 - Eukaryotic Cell Biology or
- BIOL 43600 - Neurobiology or
- BIOL 43800 - General Microbiology or
- Elective - Credit Hours: 3.00 - 4.00
- Supporting Area Course - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 3.00
- Physics Selective I - Credit Hours: 4.00
- Elective - Credit Hours: 3.00 - 6.00

15-16 Credits

Spring 4th Year

- BIOL 32800 - Principles Of Physiology or
 - BIOL 36700 - Principles Of Development and
 - BIOL 36701 - Principles Of Development Lab or
 - BIOL 41600 - Viruses And Viral Disease or
 - Elective - Credit Hours: 3.00 - 4.00
-
- Supporting Area Course - Credit Hours: 3.00
 - Great Issue Option - Credit Hours: 3.00
 - Physics Selective II - Credit Hours: 4.00
 - Elective - Credit Hours: 3.00

16-17 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Interdisciplinary Science, BS (Chemistry)

About the Program

The interdisciplinary science major is designed to provide College of Science students with a broad base in the sciences. By combining a primary area of science study, an interdisciplinary science core, a supporting area of academic interest and the core

curriculum shared by all College of Science programs, students explore how the disciplines of science come together to identify and solve scientific challenges. Students customize the major by selecting a departmental or interdepartmental primary area based in science and a supporting area that complements or enhances the primary area. This supporting area may be an approved minor from any college or school at the University or a concentration of 18 credits of courses with a unifying theme. There is a primary area representing each department in the College of Science, however, cross-disciplinary areas may be explored and added as appropriate. With the help of either a faculty member or an academic advisor, students are encouraged to petition for approval of their supporting area.

The Interdisciplinary Science Major is designed to give a student a broad base in the sciences with more depth in a Primary Area of Science and a Supporting Area, usually outside of Science. The Core courses are common across the major but the student customizes the major by selecting a departmental or interdepartmental Primary Area based in Science and a Supporting Area which may come from any college or school at the University. There is a Primary Area representing each department in the College of Science and cross-disciplinary areas will be explored and added as appropriate. Several Supporting Areas will be suggested and a student may petition for approval of others.

Students completing the interdisciplinary science major have gone on to a variety of careers - some in, and others out of, the world of science. These careers include medicine, law and other advanced-study professions, scientific sales, technical and scientific writing, computer programming and engineering.

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity

- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Degree Requirements

120 Credits Required

Departmental/Program Major Courses (87-120 credits)

Required Interdisciplinary Core Courses (69-79 credits)

Required Biology Courses (7-8 Credits)

- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II
- or
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior and
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms and
- BIOL 13500 - First year Biology Laboratory

Required Chemistry Selective Courses (8-10 credits)

- CHM 11500 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12500 - Introduction To Chemistry I (*satisfies Science Selective for core*)
- CHM 11600 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12600 - Introduction To Chemistry II (*satisfies Science Selective for core*) or
- CHM 13600 - General Chemistry Honors (*satisfies Science Selective for core*) or
- CHM 12901 - General Chemistry With A Biological Focus + Pass Departmental Exam for CHM 11500

Required Computing Option (3-4 Credits)

- CS 15800 - C Programming or
- CS 15900 - Programming Applications For Engineers or
- CS 17700 - Programming With Multimedia Objects or

- CS 18000 - Problem Solving And Object-Oriented Programming

Required Earth, Atmospheric, and Planetary Science Selective Courses (3 credits)

Select courses COULD satisfy Science Selective for core:

- EAPS 10000 - Planet Earth or
- EAPS 10900 - The Dynamic Earth or
- EAPS 11100 - Physical Geology or
- EAPS 22100 - Survey Of Atmospheric Science or
- EAPS 22500 - Science Of The Atmosphere

Required Mathematics Courses (6-10 credits)

Satisfies Quantitative Reasoning for core:

- MA 16010 - Applied Calculus I and
- MA 16020 - Applied Calculus II
- OR**
- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- AND**
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Required Physics Selective Courses (8 credits)

- PHYS 22000 - General Physics (*satisfies Science Selective for core*) and
- PHYS 22100 - General Physics (*satisfies Science Selective for core*) **OR**
- PHYS 17200 - Modern Mechanics (*satisfies Science Selective for core*) **AND**
- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science Selective for core*) or
- PHYS 24100 - Electricity And Optics (*satisfies Science Selective for core*) and
- PHYS 25200 - Electricity And Optics Laboratory (*satisfies Science Selective for core*) **OR**
- PHYS 23300 - Physics For Life Sciences I and
- PHYS 23400 - Physics For Life Sciences II

Required Statistics Courses (3 credits)

- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

Required Chemistry Primary Area Courses (16-18 credits)

- CHM 25500 - Organic Chemistry and
- CHM 25501 - Organic Chemistry Laboratory
- OR**

- CHM 26500 - Organic Chemistry Laboratory
OR
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26505 - Organic Chemistry
or
- CHM 26100 - Organic Chemistry
OR
- MCMP 20400 - Organic Chemistry I

- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory
OR
- CHM 26605 - Organic Chemistry
or
- CHM 26200 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory
or
- CHM 26600 - Organic Chemistry Laboratory **OR**
- MCMP 20500 - Organic Chemistry II

- CHM 24100 - Introductory Inorganic Chemistry
- CHM 37200 - Physical Chemistry

Required Supporting Area Courses (18 credits)

MUST BE APPROVED BY COLLEGE

Other Departmental/Program Course Requirements (18-31 credits)

- MA 16010 - Applied Calculus I Calculus Option I - (satisfies Quantitative Reasoning for core) ♦
- MA 16020 - Applied Calculus II Calculus Option II - (satisfies Quantitative Reasoning for core) ♦

- ENGL 10600 - First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (*satisfies Written Communication and Information Literacy for core*)

- Language I Option* (*Select courses COULD satisfy Human Cultures Humanities for core*) - Credit Hours: 0.00 - 4.00
- Language II Option* (*Select courses COULD satisfy Human Cultures Humanities for core*) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option* (*Select courses COULD satisfy Human Cultures Humanities for core*) - Credit Hours: 0.00 - 4.00
- Technical Writing Option and Technical Presenting Option (*Select courses COULD satisfy Oral Communication for core*) - Credit Hours: 3.00-6.00
- Laboratory Science I Option -within major (*satisfies Science Selective for core*)
- Laboratory Science II Option -within major (*satisfies Science Selective for core*)
- General Education I Option (*Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core*) - Credit Hours: 3.00
- General Education II Option (*Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core*) - Credit Hours: 3.00

- General Education III Option (*Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core*) - Credit Hours: 3.00
 - STAT 35000 - Introduction To Statistics
 - Computing Option -within major
 - Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
 - Great Issues Option - Credit Hours: 3.00
 - Multidisciplinary Experience* (*Select courses COULD satisfies Science, Technology, and Society Selective for core*) - Credit Hours: 0.00 - 3.00
- *Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

Electives (10-33 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, [click here](#).

Program Requirements

Fall 1st Year

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Calculus Option I - Credit Hours: 3.00 - 5.00
- General Chemistry Selective I - Credit Hours: 4.00 - 5.00
- Biology Selective I - Credit Hours: 4.00
- Elective - Credit Hours: 0.00 - 1.00

15-18 Credits

Spring 1st Year

- Calculus Option II - Credit Hours: 3.00 - 5.00
- Language I Option - Credit Hours: 3.00 - 4.00
- General Chemistry Selective II - Credit Hours: 4.00 - 5.00
- Biology Selective II - Credit Hours: 3.00 - 4.00
- Biology Selective II or Elective - Credit Hours: 0.00 - 2.00

15-18 Credits

Fall 2nd Year

- Organic Chemistry I with Lab - Credit Hours: 4.00 - 5.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Physics Selective I - Credit Hours: 4.00
- COM 21700 - Science Writing And Presentation or Technical Presentation - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15-17 Credits

Spring 2nd Year

- Organic Chemistry II with Lab - Credit Hours: 4.00 - 5.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Supporting Area Course - Credit Hours: 3.00
- Physics Selective II - Credit Hours: 4.00
- Elective - Credit Hours: 1.00

15-17 Credits

Fall 3rd Year

- Supporting Course Area - Credit Hours: 3.00
- Supporting Course Area - Credit Hours: 3.00
- STAT 35000 - Introduction To Statistics
- Computing Option (recommend CS 17700 meets Teambuilding & Collaboration) - Credit Hours: 3.00 - 4.00
- General Education I Option - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

- CHM 24100 - Introductory Inorganic Chemistry
- EAPS Selective Course - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00

- General Education II Option - Credit Hours: 3.00
- Technical Writing or Elective - Credit Hours: 3.00

15 Credits

Fall 4th Year

- Supporting Area Course - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 3.00
- General Education III option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00 - 6.00

15-16 Credits

Spring 4th Year

- CHM 37200 - Physical Chemistry
- Great Issue Option - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Interdisciplinary Science, BS (Computer Science)

About the Program

The interdisciplinary science major is designed to provide College of Science students with a broad base in the sciences. By combining a primary area of science study, an interdisciplinary science core, a supporting area of academic interest and the core curriculum shared by all College of Science programs, students explore how the disciplines of science come together to identify and solve scientific challenges. Students customize the major by selecting a departmental or interdepartmental primary area based in science and a supporting area that complements or enhances the primary area. This supporting area may be an approved minor from any college or school at the University or a concentration of 18 credits of courses with a unifying theme. There is a primary area representing each department in the College of Science, however, cross-disciplinary areas may be explored and added as appropriate. With the help of either a faculty member or an academic advisor, students are encouraged to petition for approval of their supporting area.

The Interdisciplinary Science Major is designed to give a student a broad base in the sciences with more depth in a Primary Area of Science and a Supporting Area, usually outside of Science. The Core courses are common across the major but the student customizes the major by selecting a departmental or interdepartmental Primary Area based in Science and a Supporting Area which may come from any college or school at the University. There is a Primary Area representing each department in the College of Science and cross-disciplinary areas will be explored and added as appropriate. Several Supporting Areas will be suggested and a student may petition for approval of others.

Students completing the interdisciplinary science major have gone on to a variety of careers - some in, and others out of, the world of science. These careers include medicine, law and other advanced-study professions, scientific sales, technical and scientific writing, computer programming and engineering.

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (90-111 credits)

Required Interdisciplinary Core Courses (72-80 credits)

Required Biology Courses (7-8 credits)

- BIOL 11000 - Fundamentals Of Biology I and (*satisfies Science Selective for core*)
- BIOL 11100 - Fundamentals Of Biology II (*satisfies Science Selective for core*)
- OR
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (*satisfies Science Selective for core*) and
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms (*satisfies Science Selective for core*) and
- BIOL 13500 - First year Biology Laboratory (*satisfies Science Selective for core*)

Required Chemistry Selective Courses (5-10 credits)

- CHM 11500 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12500 - Introduction To Chemistry I (*satisfies Science Selective for core*)
- AND

- CHM 11600 - General Chemistry (satisfies Science Selective for core) or
- CHM 12600 - Introduction To Chemistry II (*satisfies Science Selective for core*) or
- CHM 13600 - General Chemistry Honors (*satisfies Science Selective for core*) OR
- CHM 12901 - General Chemistry With A Biological Focus

Required Computer Science Selective Courses (4 credits)

- CS 18000 - Problem Solving And Object-Oriented Programming

Required Earth, Atmospheric, and Planetary Science Selective Courses (3 credits)

- EAPS 10000 - Planet Earth or
- EAPS 10900 - The Dynamic Earth or
- EAPS 11100 - Physical Geology or
- EAPS 22100 - Survey Of Atmospheric Science or
- EAPS 22500 - Science Of The Atmosphere
(*Select courses COULD satisfy Science Selective for core*)

Required Mathematics Courses (8-10 credits)

- MA 16100 - Plane Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*) or
- MA 16500 - Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*)
AND
- MA 16200 - Plane Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*) or
- MA 16600 - Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*)

Required Physics Selective Courses (8 credits)

- PHYS 22000 - General Physics (*satisfies Science Selective for core*) and
- PHYS 22100 - General Physics (*satisfies Science Selective for core*)
OR
- PHYS 17200 - Modern Mechanics (*satisfies Science Selective for core*) AND
- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science Selective for core*)
or
- PHYS 24100 - Electricity And Optics (*satisfies Science Selective for core*) and
- PHYS 25200 - Electricity And Optics Laboratory (*satisfies Science Selective for core*)
OR
- PHYS 23300 - Physics For Life Sciences I and
- PHYS 23400 - Physics For Life Sciences II

Required Statistics Selective Courses (3 credits)

- STAT 35000 - Introduction To Statistics or
- STAT 51100 - Statistical Methods

Required Computer Science Primary Area Courses (16 credits)

- CS 18200 - Foundations Of Computer Science
- CS 24000 - Programming In C
- CS 25000 - Computer Architecture
- CS 25100 - Data Structures And Algorithms
- CS Elective at or above 30000 level - Credit Hours: 3.00

Required Supporting Area Courses (18 credits)

MUST BE APPROVED BY COLLEGE

Other Departmental/Program Course Requirements (18-31 credits)

- MA 16010 - Applied Calculus I Calculus Option I - (satisfies Quantitative Reasoning for core) ♦
 - MA 16020 - Applied Calculus II Calculus Option II - (satisfies Quantitative Reasoning for core) ♦
 - ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) ♦ or
 - SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy for core) ♦ or
 - ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core) ♦
 - Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00-6.00
 - Laboratory Science I Option (within major) (satisfies Science Selective for core)
 - Laboratory Science II Option (within major) (satisfies Science Selective for core)
 - General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
 - General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
 - General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
 - STAT 35000 - Introduction To Statistics
 - Computing Option (within major)
 - Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
 - Great Issues Option - Credit Hours: 3.00
 - Multidisciplinary Experience* (Select courses COULD satisfy Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00
- *Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

Electives (9-30 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

- EAPS Selective Course - Credit Hours: 3.00
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 0.00 - 4.00

15-18 Credits

Spring 1st Year

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

- CS 18000 - Problem Solving And Object-Oriented Programming
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00 - 4.00

15-17 Credits

Fall 2nd Year

- CS 18200 - Foundations Of Computer Science
- CS 24000 - Programming In C
- Supporting Area Course - Credit Hours: 3.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Technical Presentation (COM 21700) - Credit Hours: 3.00

15-16 Credits

Spring 2nd Year

- CS 25000 - Computer Architecture
- CS 25100 - Data Structures And Algorithms
- STAT 35000 - Introduction To Statistics
- Supporting Area Course - Credit Hours: 3.00
- General Education I Option - Credit Hours: 3.00

16 Credits

Fall 3rd Year

- CS Elective 30000 level - Credit Hours: 3.00
- Physics Selective I - Credit Hours: 4.00
- General Chemistry Selective I - Credit Hours: 4.00 - 5.00
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15-16 Credits

Spring 3rd Year

- Supporting Area Course - Credit Hours: 3.00
- Physics Selective II - Credit Hours: 4.00
- General Chemistry Selective II or Elective - Credit Hours: 4.00 - 5.00
- General Education III Option - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15-16 Credits

Fall 4th Year

- Supporting Area Course - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 3.00
- Biology Selective I - Credit Hours: 4.00

- Supporting Area Course - Credit Hours: 3.00
- Technical Writing or Elective - Credit Hours: 3.00
- Elective - Credit Hours: 0.00 - 2.00

15-18 Credits

Spring 4th Year

- Great Issue Option - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- Biology Selective II - Credit Hours: 3.00 - 4.00
- Biology Selective II or Elective - Credit Hours: 0.00 - 2.00
- Elective - Credit Hours: 6.00

15-17 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Interdisciplinary Science, BS (Earth, Atmospheric, and Planetary Sciences)

About the Program

The interdisciplinary science major is designed to provide College of Science students with a broad base in the sciences. By combining a primary area of science study, an interdisciplinary science core, a supporting area of academic interest and the core

curriculum shared by all College of Science programs, students explore how the disciplines of science come together to identify and solve scientific challenges. Students customize the major by selecting a departmental or interdepartmental primary area based in science and a supporting area that complements or enhances the primary area. This supporting area may be an approved minor from any college or school at the University or a concentration of 18 credits of courses with a unifying theme. There is a primary area representing each department in the College of Science, however, cross-disciplinary areas may be explored and added as appropriate. With the help of either a faculty member or an academic advisor, students are encouraged to petition for approval of their supporting area.

The Interdisciplinary Science Major is designed to give a student a broad base in the sciences with more depth in a Primary Area of Science and a Supporting Area, usually outside of Science. The Core courses are common across the major but the student customizes the major by selecting a departmental or interdepartmental Primary Area based in Science and a Supporting Area which may come from any college or school at the University. There is a Primary Area representing each department in the College of Science and cross-disciplinary areas will be explored and added as appropriate. Several Supporting Areas will be suggested and a student may petition for approval of others.

Students completing the interdisciplinary science major have gone on to a variety of careers - some in, and others out of, the world of science. These careers include medicine, law and other advanced-study professions, scientific sales, technical and scientific writing, computer programming and engineering.

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (88-110 credits)

Required Interdisciplinary Core Courses (70-79 credits)

Required Biology Courses (7-8 credits)

- BIOL 11000 - Fundamentals Of Biology I (*satisfies Science Selective for core*) and
- BIOL 11100 - Fundamentals Of Biology II (*satisfies Science Selective for core*)
OR
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (*satisfies Science Selective for core*) and
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms (*satisfies Science Selective for core*) and
- BIOL 13500 - First year Biology Laboratory (*satisfies Science Selective for core*)

Required Chemistry Selective Courses (5-10 credits)

- CHM 11500 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12500 - Introduction To Chemistry I (*satisfies Science Selective for core*)
AND
- CHM 11600 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12600 - Introduction To Chemistry II (*satisfies Science Selective for core*) or
- CHM 13600 - General Chemistry Honors (*satisfies Science Selective for core*) or
- CHM 12901 - General Chemistry With A Biological Focus

Required Computing Option (3-4 credits)

- CS 15800 - C Programming or

- CS 15900 - Programming Applications For Engineers or
- CS 17700 - Programming With Multimedia Objects or
- CS 18000 - Problem Solving And Object-Oriented Programming

Required Earth, Atmospheric, and Planetary Science Courses (3 credits)

- EAPS 11100 - Physical Geology (*satisfies Science Selective for core*)

Required Mathematics Courses (8-10 credits)

- MA 16100 - Plane Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*) or
- MA 16500 - Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*)
AND
- MA 16200 - Plane Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*) or
- MA 16600 - Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*)

Required Physics Selective Courses (8 credits)

- PHYS 22000 - General Physics (*satisfies Science Selective for core*) and
- PHYS 22100 - General Physics (*satisfies Science Selective for core*)
OR
- PHYS 17200 - Modern Mechanics (*satisfies Science Selective for core*) AND
- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science Selective for core*)
or
- PHYS 24100 - Electricity And Optics (*satisfies Science Selective for core*) and
- PHYS 25200 - Electricity And Optics Laboratory (*satisfies Science Selective for core*)
OR
- PHYS 23300 - Physics For Life Sciences I and
- PHYS 23400 - Physics For Life Sciences II

Required Statistics Courses (3 credits)

- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

Required Earth, Atmospheric, and Planetary Sciences Primary Area Courses (15 credits)

- EAPS 10000 - Planet Earth or
- EAPS 10900 - The Dynamic Earth or
- EAPS 22100 - Survey Of Atmospheric Science or
- EAPS 22500 - Science Of The Atmosphere

- EAPS 11200 - Earth Through Time
or

any EAPS course 20000 level or higher - Credit Hours: 3.00

- EAPS 30000 level or higher - Credit Hours: 3.00
- EAPS 30000 level or higher - Credit Hours: 3.00
- EAPS 30000 level or higher - Credit Hours: 3.00

Required Supporting Area Courses (18 credits)

MUST BE APPROVED BY COLLEGE

Other Departmental/Program Course Requirements (18-31 credits)

- MA 16010 - Applied Calculus I Calculus Option I - (satisfies Quantitative Reasoning for core) ♦
- MA 16020 - Applied Calculus II Calculus Option II - (satisfies Quantitative Reasoning for core) ♦

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) ♦ or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy for core) ♦ or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core) ♦
- Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00-6.00
- Laboratory Science I Option (within major) (satisfies Science Selective for core)
- Laboratory Science II Option (within major) (satisfies Science Selective for core)
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- STAT 35000 - Introduction To Statistics
- Computing Option (within major)
- Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
- Great Issues Option - Credit Hours: 3.00
- Multidisciplinary Experience* (Select courses COULD satisfies Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

Electives (10-32 credits)

University Core Requirements

- Human Cultures Humanities

- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Fall only course option - EAPS 10000 or EAPS 10900 or elective - Credit Hours: 3.00
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 2.00

15-18 Credits

Spring 1st Year

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- Spring only course option of EAPS 22100 or elective - Credit Hours: 3.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 1.00
- Physics Selective I - Credit Hours: 4.00

15-17 Credits

Fall 2nd Year

- EAPS 11100 - Physical Geology
- Supporting Area Course- Credit Hours: 3.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Physics Selective II - Credit Hours: 4.00
- General Education I Option - Credit Hours: 3.00

16-17 Credits

Spring 2nd Year

- EAPS 11200 - Earth Through Time or 20000 level - Credit Hours 3.00
- COM 21700 - Science Writing And Presentation or Technical Presentation - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- STAT Option - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00

15-16 Credits

Fall 3rd Year

- Supporting Area Course - Credit Hours: 3.00
- General Chemistry Selective I - Credit Hours: 4.00 - 5.00
- General Education II Option - Credit Hours: 3.00
- Fall only course option EAPS 22500 or elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16-17 Credits

Spring 3rd Year

- Supporting Area Course - Credit Hours: 3.00
- General Chemistry Selective II or Elective - Credit Hours: 4.00- 5.00
- General Education III Option - Credit Hours: 3.00
- EAPS 30000 level - CreditHours: 3.00
- Elective - Credit Hours: 3.00

16-17 Credits

Fall 4th Year

- Supporting Area Course - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 3.00
- Biology Selective I - Credit Hours: 4.00
- EAPS 30000 level - Credit Hours: 3.00
- Technical Writing or Elective - Credit Hours: 3.00

- Elective - Credit Hours: 0.00 - 2.00

15-18 Credits

Spring 4th Year

- Great Issue Option - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- Biology Selective II - Credit Hours: 3.00 - 4.00
- Biology Selective II or Elective - Credit Hours: 0.00 - 2.00
- EAPS 30000 level - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-18 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Interdisciplinary Science, BS (Mathematics)

About the Program

The interdisciplinary science major is designed to provide College of Science students with a broad base in the sciences. By combining a primary area of science study, an interdisciplinary science core, a supporting area of academic interest and the core curriculum shared by all College of Science programs, students explore how the disciplines of science come together to identify and solve scientific challenges. Students customize the major by selecting a departmental or interdepartmental primary area based

in science and a supporting area that complements or enhances the primary area. This supporting area may be an approved minor from any college or school at the University or a concentration of 18 credits of courses with a unifying theme. There is a primary area representing each department in the College of Science, however, cross-disciplinary areas may be explored and added as appropriate. With the help of either a faculty member or an academic advisor, students are encouraged to petition for approval of their supporting area.

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Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

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3. Electives

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- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

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Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (89-112 credits)

Required Interdisciplinary Core Courses (71-81 credits)

Required Biology Courses (7-8 Credits)

Satisfies Science Selective for core:

- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II
- OR
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior and
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms and
- BIOL 13500 - First year Biology Laboratory

Required Chemistry Selective Courses (5-10 credits)

- CHM 11500 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12500 - Introduction To Chemistry I (*satisfies Science Selective for core*)
- AND
- CHM 11600 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12600 - Introduction To Chemistry II (*satisfies Science Selective for core*) or
- CHM 13600 - General Chemistry Honors or (*satisfies Science Selective for core*)
- CHM 12901 - General Chemistry With A Biological Focus

Required Computing Option (3-4 credits)

- CS 15800 - C Programming or
- CS 15900 - Programming Applications For Engineers or
- CS 17700 - Programming With Multimedia Objects or

- CS 18000 - Problem Solving And Object-Oriented Programming

Required Earth, Atmospheric, and Planetary Science Selective Courses (3 credits)

Select courses COULD satisfy Science Selective for core:

- EAPS 10000 - Planet Earth or
- EAPS 10900 - The Dynamic Earth or
- EAPS 11100 - Physical Geology or
- EAPS 22100 - Survey Of Atmospheric Science or
- EAPS 22500 - Science Of The Atmosphere

Required Mathematics Courses (8-10 credits)

Satisfies Quantitative Reasoning for core:

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
AND
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Required Physics Selective Courses (8 credits)

- PHYS 22000 - General Physics (*satisfies Science Selective for core*) and
- PHYS 22100 - General Physics (*satisfies Science Selective for core*)
OR
- PHYS 17200 - Modern Mechanics (*satisfies Science Selective for core*) and
- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science Selective for core*)
or
- PHYS 24100 - Electricity And Optics (*satisfies Science Selective for core*) and
- PHYS 25200 - Electricity And Optics Laboratory (*satisfies Science Selective for core*)
OR
- PHYS 23300 - Physics For Life Sciences I and
- PHYS 23400 - Physics For Life Sciences II

Required Statistics Selective Courses (3 credits)

- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

Required Mathematics Primary Area Courses (16-17 credits)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

- MA 35100 - Elementary Linear Algebra
- MA 36600 - Ordinary Differential Equations or
- MA 26200 - Linear Algebra And Differential Equations
- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I or
- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors
- MA Elective at or above 30000 level

Required Supporting Area Courses (18 credits)

MUST BE APPROVED BY COLLEGE

Other Departmental/Program Course Requirements (18-31 credits)

- MA 16010 - Applied Calculus I Calculus I Option - (satisfies Quantitative Reasoning for core) ♦
- MA 16020 - Applied Calculus II Calculus Option II - (satisfies Quantitative Reasoning for core) ♦
- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) ♦ or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy for core) ♦ or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core) ♦
- Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00-6.00
- Laboratory Science I Option (within major) (satisfies Science Selective for core)
- Laboratory Science II Option (within major) (satisfies Science Selective for core)
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- STAT 35000 - Introduction To Statistics
- Computing Option (within major)
- Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
- Great Issues Option - Credit Hours: 3.00
- Multidisciplinary Experience* (Select courses COULD satisfies Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

Electives (8-31 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

- Language I Option - Credit Hours: 3.00 - 4.00
- Physics Selective I - Credit Hours: 4.00
- Elective - Credit Hours: 1.00

15-18 Credits

Spring 1st Year

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Physics Selective II - Credit Hours: 4.00

- Elective - Credit Hours: 1.00

15-17 Credits

Fall 2nd Year

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

- Supporting Area Course - Credit Hours: 3.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- EAPS Selective - Credit Hours: 3.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00
- Computing Option - Credit Hours: 3.00 - 4.00

16-18 Credits

Spring 2nd Year

- MA 35100 - Elementary Linear Algebra

- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

- Supporting Area Course - Credit Hours: 3.00
- Technical Presentation (COM 21700) - Credit Hours: 3.00
- General Education I Option - Credit Hours: 3.00

15 Credits

Fall 3rd Year

- MA 36600 - Ordinary Differential Equations or
- MA 26200 - Linear Algebra And Differential Equations

- Supporting Area Course - Credit Hours: 3.00
- General Chemistry Selective I - Credit Hours: 4.00 - 5.00
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

14-16 Credits

Spring 3rd Year

- MA Elective 30000+ - Credit Hours: 3.00

- Supporting Area Course - Credit Hours: 3.00
- General Chemistry Selective II or Elective - Credit Hours: 4.00 - 5.00
- General Education III Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16-17 Credits

Fall 4th Year

- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors or
- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I
- Supporting Area Course - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 3.00
- Biology Selective I - Credit Hours: 4.00
- Technical Writing or Elective - Credit Hours: 3.00

16 Credits

Spring 4th Year

- Great Issue Option - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- Biology Selective II - Credit Hours: 3.00 - 4.00
- Biology Selective II or Elective - Credit Hours: 2.00
- Elective - Credit Hours: 3.00

14-15 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Interdisciplinary Science, BS (Physics)

About the Program

The interdisciplinary science major is designed to provide College of Science students with a broad base in the sciences. By combining a primary area of science study, an interdisciplinary science core, a supporting area of academic interest and the core curriculum shared by all College of Science programs, students explore how the disciplines of science come together to identify and solve scientific challenges. Students customize the major by selecting a departmental or interdepartmental primary area based in science and a supporting area that complements or enhances the primary area. This supporting area may be an approved minor from any college or school at the University or a concentration of 18 credits of courses with a unifying theme. There is a primary area representing each department in the College of Science, however, cross-disciplinary areas may be explored and added as appropriate. With the help of either a faculty member or an academic advisor, students are encouraged to petition for approval of their supporting area.

The Interdisciplinary Science Major is designed to give a student a broad base in the sciences with more depth in a Primary Area of Science and a Supporting Area, usually outside of Science. The Core courses are common across the major but the student customizes the major by selecting a departmental or interdepartmental Primary Area based in Science and a Supporting Area which may come from any college or school at the University. There is a Primary Area representing each department in the College of Science and cross-disciplinary areas will be explored and added as appropriate. Several Supporting Areas will be suggested and a student may petition for approval of others.

Students completing the interdisciplinary science major have gone on to a variety of careers - some in, and others out of, the world of science. These careers include medicine, law and other advanced-study professions, scientific sales, technical and scientific writing, computer programming and engineering.

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.

- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click here.

Departmental/Program Major Courses (86-109 credits)

Required Interdisciplinary Core Courses (68-78 credits)

Required Biology Courses (7-8 credits)

- BIOL 11000 - Fundamentals Of Biology I (*satisfies Science Selective for core*) and
- BIOL 11100 - Fundamentals Of Biology II (*satisfies Science Selective for core*)
OR
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior and (*satisfies Science Selective for core*)
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms (*satisfies Science Selective for core*) and
- BIOL 13500 - First year Biology Laboratory (*satisfies Science Selective for core*)

Required Chemistry Selective Courses (5-10 credits)

- CHM 11500 - General Chemistry (*satisfies Science Selective for core*)
or
- CHM 12500 - Introduction To Chemistry I (*satisfies Science Selective for core*) **AND**
- CHM 11600 - General Chemistry (*satisfies Science Selective for core*)
or
- CHM 12600 - Introduction To Chemistry II (*satisfies Science Selective for core*) or
- CHM 13600 - General Chemistry Honors (*satisfies Science Selective for core*) or
- CHM 12901 - General Chemistry With A Biological Focus

Required Computing Option (3-4 credits)

- CS 15800 - C Programming or
- CS 15900 - Programming Applications For Engineers or
- CS 17700 - Programming With Multimedia Objects or
- CS 18000 - Problem Solving And Object-Oriented Programming

Required Earth, Atmospheric, and Planetary Science Selective Courses (3 credits)

- EAPS 10000 - Planet Earth or
- EAPS 10900 - The Dynamic Earth or
- EAPS 11100 - Physical Geology or
- EAPS 22100 - Survey Of Atmospheric Science or
- EAPS 22500 - Science Of The Atmosphere
(*Select courses COULD satisfy Science Selective for core*)

Required Mathematics Courses (8-10 credits)

- MA 16100 - Plane Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*)
or
- MA 16500 - Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*) and
- MA 16200 - Plane Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*)
or
- MA 16600 - Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*)

Required Physics Courses (8 credits)

- PHYS 17200 - Modern Mechanics (*satisfies Science Selective for core*)
- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science Selective for core*)
or
- PHYS 24100 - Electricity And Optics (*satisfies Science Selective for core*) and
- PHYS 25200 - Electricity And Optics Laboratory (*satisfies Science Selective for core*)

Required Statistics Courses (3 credits)

- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

Required Physics Primary Area Courses (13-14 credits)

- MA 26100 - Multivariate Calculus
- PHYS 34200 - Modern Physics or
- PHYS 34400 - Modern Physics
- PHYS Elective at or above 30000 level - Credit Hours: 3.00
- PHYS Elective at or above 30000 level - Credit Hours: 3.00

Required Supporting Area Courses (18 credits)

MUST BE APPROVED BY COLLEGE.

Other Departmental/Program Course Requirements (18-31 credits)

- MA 16010 - Applied Calculus I Calculus I Option - (satisfies Quantitative Reasoning for core) ♦
- MA 16020 - Applied Calculus II Calculus Option II - (satisfies Quantitative Reasoning for core) ♦
- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) ♦ or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy for core) ♦ or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core) ♦
- Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00-6.00
- Laboratory Science I Option (within major) (satisfies Science Selective for core)
- Laboratory Science II Option (within major) (satisfies Science Selective for core)
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- STAT 35000 - Introduction To Statistics
- Computing Option (within major)
- Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00

- Great Issues Option - Credit Hours: 3.00
- Multidisciplinary Experience* (Select courses COULD satisfies Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00
 - *Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

Electives (11-34 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, [click here](#).

Program Requirements

Fall 1st Year

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- PHYS 17200 - Modern Mechanics
- Language I Selective - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 1.00

15-18 Credits

Spring 1st Year

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- PHYS 27200 - Electric And Magnetic Interactions
or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory
- Language II Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15-17 Credits

Fall 2nd Year

- MA 26100 - Multivariate Calculus
- PHYS 34200 - Modern Physics or
- PHYS 34400 - Modern Physics
- Language Selective III - Credit Hours: 3.00 - 4.00
- Supporting Area Course - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-17 Credits

Spring 2nd Year

- PHYS 30000+ Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- General Education I Selective - Credit Hours: 3.00
- Computing Selective - Credit Hours: 3.00 - 4.00
- COM 21700 - Science Writing And Presentation or Technical Presentation - Credit Hours: 3.00
- Teambuilding Experience - Credit Hours: 0.00

15-16 Credits

Fall 3rd Year

- PHYS 30000+ Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- General Chemistry Selective I - Credit Hours: 4.00 - 5.00
- General Education II Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16-17 Credits

Spring 3rd Year

- EAPS Selective - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- General Chemistry Selective II or Elective - Credit Hours: 4.00 - 5.00
- General Education III Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16-17 Credits

Fall 4th Year

- STAT Selective - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 0.00 - 4.00
- Biology Selective I - Credit Hours: 4.00
- Technical Writing or Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-18 Credits

Spring 4th Year

- Great Issue Selective - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- Biology Selective II - Credit Hours: 3.00 - 4.00
- Biology Selective II or Elective - Credit Hours: 0.00 - 2.00
- Elective - Credit Hours: 6.00

15-18 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Interdisciplinary Science, BS (Statistics)

About the Program

The interdisciplinary science major is designed to provide College of Science students with a broad base in the sciences. By combining a primary area of science study, an interdisciplinary science core, a supporting area of academic interest and the core curriculum shared by all College of Science programs, students explore how the disciplines of science come together to identify and solve scientific challenges. Students customize the major by selecting a departmental or interdepartmental primary area based in science and a supporting area that complements or enhances the primary area. This supporting area may be an approved minor from any college or school at the University or a concentration of 18 credits of courses with a unifying theme. There is a primary area representing each department in the College of Science, however, cross-disciplinary areas may be explored and added as appropriate. With the help of either a faculty member or an academic advisor, students are encouraged to petition for approval of their supporting area.

The Interdisciplinary Science Major is designed to give a student a broad base in the sciences with more depth in a Primary Area of Science and a Supporting Area, usually outside of Science. The Core courses are common across the major but the student customizes the major by selecting a departmental or interdepartmental Primary Area based in Science and a Supporting Area which may come from any college or school at the University. There is a Primary Area representing each department in the College of Science and cross-disciplinary areas will be explored and added as appropriate. Several Supporting Areas will be suggested and a student may petition for approval of others.

Students completing the interdisciplinary science major have gone on to a variety of careers - some in, and others out of, the world of science. These careers include medicine, law and other advanced-study professions, scientific sales, technical and scientific writing, computer programming and engineering.

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.

- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click here.

Departmental/Program Major Courses (85-108 credits)

Required Interdisciplinary Core Courses (67-77 credits)

Required Biology Courses (7-8 credits)

- BIOL 11000 - Fundamentals Of Biology I (*satisfies Science Selective for core*) and
- BIOL 11100 - Fundamentals Of Biology II (*satisfies Science Selective for core*)
OR
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (*satisfies Science Selective for core*) and
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms (*satisfies Science Selective for core*) and
- BIOL 13500 - First year Biology Laboratory (*satisfies Science Selective for core*)

Required Chemistry Selective Courses (5-10 credits)

- CHM 11500 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12500 - Introduction To Chemistry I (*satisfies Science Selective for core*)
AND
- CHM 11600 - General Chemistry (*satisfies Science Selective for core*) or
- CHM 12600 - Introduction To Chemistry II (*satisfies Science Selective for core*) or
- CHM 13600 - General Chemistry Honors (*satisfies Science Selective for core*) or
- CHM 12901 - General Chemistry With A Biological Focus

Required Computing Option (3-4 credits)

- CS 15800 - C Programming or
- CS 15900 - Programming Applications For Engineers or
- CS 17700 - Programming With Multimedia Objects or
- CS 18000 - Problem Solving And Object-Oriented Programming

Required Earth, Atmospheric, and Planetary Science Selective Courses (3 credits)

(Select courses COULD satisfy Science Selective for core)

- EAPS 10000 - Planet Earth or
- EAPS 10900 - The Dynamic Earth or
- EAPS 11100 - Physical Geology or
- EAPS 22100 - Survey Of Atmospheric Science or
- EAPS 22500 - Science Of The Atmosphere

Required Mathematics Courses (8-10 credits)

- MA 16100 - Plane Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*) or
- MA 16500 - Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*)
AND
- MA 16200 - Plane Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*) or
- MA 16600 - Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*)

Required Physics Selective Courses (8 credits)

- PHYS 22000 - General Physics (*satisfies Science Selective for core*) and
- PHYS 22100 - General Physics (*satisfies Science Selective for core*)
OR
- PHYS 17200 - Modern Mechanics (*satisfies Science Selective for core*) and
- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science Selective for core*)
OR
- PHYS 24100 - Electricity And Optics (*satisfies Science Selective for core*) and
- PHYS 25200 - Electricity And Optics Laboratory (*satisfies Science Selective for core*)
OR
- PHYS 23300 - Physics For Life Sciences I and

- PHYS 23400 - Physics For Life Sciences II

Required Statistics Selective Courses (3 credits)

- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

Required Statistics Primary Area Courses (12-13 credits)

- STAT 22500 - Introduction To Probability Models or
- STAT 31100 - Introductory Probability or
- STAT 41600 - Probability or
- STAT 51600 - Basic Probability And Applications

- STAT 41700 - Statistical Theory or
- STAT 51300 - Statistical Quality Control or
- STAT 51400 - Design Of Experiments or
- MA 26100 - Multivariate Calculus

- STAT 51200 - Applied Regression Analysis and
- STAT 51300 Statistical Quality Control or
- STAT 51400 Design Of Experiments

NOTE: STAT 51300 and STAT 51400 can only be taken one time each to meet primary area course requirements.

Required Supporting Area Courses (18 credits)

MUST BE APPROVED BY COLLEGE.

Other Departmental/Program Course Requirements (18-31 credits)

- MA 16010 - Applied Calculus I Calculus I Option (*satisfies Quantitative Reasoning for core*) ♦
- MA 16020 - Applied Calculus II Calculus II Option (*satisfies Quantitative Reasoning for core*) ♦

- ENGL 10600 - First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (*satisfies Written Communication and Information Literacy for core*) or
- ENGL 10800 - Accelerated First-Year Composition (*satisfies Written Communication and Information Literacy for core*)

- Language I Option* (*Select courses COULD satisfy Human Cultures Humanities for core*) - Credit Hours: 0.00 - 4.00
- Language II Option* (*Select courses COULD satisfy Human Cultures Humanities for core*) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option* (*Select courses COULD satisfy Human Cultures Humanities for core*) - Credit Hours: 0.00 - 4.00
- Technical Writing Option and Technical Presenting Option (*Select courses COULD satisfy Oral Communication for core*) - Credit Hours: 3.00-6.00
- Laboratory Science I Option (within major) (*satisfies Science Selective for core*)

- Laboratory Science II Option (within major) (*satisfies Science Selective for core*)
- General Education I Option (*Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core*) - Credit Hours: 3.00
- General Education II Option (*Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core*) - Credit Hours: 3.00
- General Education III Option (*Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core*) - Credit Hours: 3.00
- STAT 35000 - Introduction To Statistics
- Computing Option (within major)
- Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
- Great Issues Option - Credit Hours: 3.00
- Multidisciplinary Experience* (*Select courses COULD satisfy Science, Technology, and Society Selective for core*) - Credit Hours: 0.00 - 3.00

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

Electives (12-35 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

- Language I Option - Credit Hours: 3.00 - 4.00
- Physics Selective I - Credit Hours: 4.00
- Elective - Credit Hours: 1.00

15-18 Credits

Spring 1st Year

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Physics Selective II - Credit Hours: 4.00
- Elective - Credit Hours: 1.00

15-17 Credits

Fall 2nd Year

- MA 26100 - Multivariate Calculus or
- STAT 41700 - Statistical Theory or
- STAT 51300 - Statistical Quality Control or
- STAT 51400 - Design Of Experiments
- Supporting Area Course - Credit Hours: 3.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- EAPS Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-17 Credits

Spring 2nd Year

- STAT 35000 - Introduction To Statistics
- Supporting Area Course - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- COM 21700 - Science Writing And Presentation
- General Education I Option - Credit Hours: 3.00
- Teambuilding and Collaboration Experience - Credit Hours: 3.00 - 4.00

15-16 Credits

Fall 3rd Year

- STAT 22500 - Introduction To Probability Models or
- STAT 31100 - Introductory Probability or
- STAT 41600 - Probability or
- STAT 51600 - Basic Probability And Applications

- Supporting Area Course - Credit Hours: 3.00
- General Chemistry Selective I - Credit Hours: 4.00 - 5.00
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-16 Credits

Spring 3rd Year

- Elective - Credit Hours: 3.00
- Supporting Area Course - Credit Hours: 3.00
- General Chemistry Selective II or Elective - Credit Hours: 4.00 - 5.00
- General Education III Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16-17 Credits

Fall 4th Year

- STAT 51200 - Applied Regression Analysis
- Supporting Area Course - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 3.00
- Biology Selective I - Credit Hours: 4.00
- Technical Writing or Elective - Credit Hours: 3.00
- Elective - Credit Hours: 0.00 -2.00

15-18 Credits

Spring 4th Year

- STAT 51300 - Statistical Quality Control or
- STAT 51400 - Design Of Experiments

- Supporting Area Course - Credit Hours: 3.00
- Great Issue Option - Credit Hours: 3.00
- Biology Selective II - Credit Hours: 3.00 - 4.00
- Biology Selective II or Elective - Credit Hours: 0.00 - 2.00
- Elective - Credit Hours - 3.00

15-18 Credits

Notes

- 2.0 Graduation GPA required for Bachelor of Science

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Science Education - Biology Concentration, BS

About the Program

A College of Science degree in Science Education prepares future science teachers for certification at the middle and high school level. Students customize their focus by selecting a major area of study in biology, chemistry, physics, or earth and space science within an interdisciplinary science framework. The Science Education degree ensures students are thoroughly educated in their content discipline and modern theories of learning and education. Graduates are in high demand as STEM education and careers continue to grow in demand.

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click [here](#).

Departmental/Program Major Courses

Required Science Education Core Courses (25-30 credits)

Required Chemistry Selective Courses (5 credits)

- CHM 12901 - General Chemistry With A Biological Focus

Required Computing Option (3-4 credits)

- CS 15800 - C Programming or
- CS 17700 - Programming With Multimedia Objects

Required Calculus Selective Courses (6-10 credits)

- MA 16010 - Applied Calculus I and
- MA 16020 - Applied Calculus II
- **OR**
- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- **AND**
- MA 16200 - Plane Analytic Geometry And Calculus II or
and
- MA 16600 - Analytic Geometry And Calculus II

Required Physics Selective Courses (8 credits)

- PHYS 17200 - Modern Mechanics
- or
- PHYS 23300 - Physics For Life Sciences I **AND**
- PHYS 27200 - Electric And Magnetic Interactions
- or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory
- or
- PHYS 23400 - Physics For Life Sciences II

Required Statistics Selective Courses (3 credits)

- STAT 50300 - Statistical Methods For Biology

Educational Program Course Requirements (36 credits)

Professional Education GPA Average ≥ 3.00 - no grade lower than C

- EDCI 20500 - Exploring Teaching As A Career
- EDCI 27000 - Introduction To Educational Technology And Computing
- EDCI 28500 - Multiculturalism And Education
- EDPS 23500 - Learning And Motivation
- EDPS 26500 - The Inclusive Classroom
- EDST 20010 - Educational Policies And Laws
- EDPS 32700 - Classroom Assessment
- EDPS 43010 - Secondary Creating And Managing Learning Environments
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 42100 - The Teaching Of Biology In Secondary Schools
- EDCI 49800 - Supervised Teaching
- EDCI 42800 - Teaching Science In The Middle And Junior High School or
- EDCI 55800 - Integrated Science, Technology, Engineering And Mathematics (STEM) Education Methods-
Secondary

Other Departmental /Program Course Requirements (22-27 credits)

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)

- Language I Option* - (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 3.00 - 4.00
- Language II Option* - (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 3.00 - 4.00
- Technical Writing Option and Technical Presenting Option - (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- General Education I Option - (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education II Option - (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00

Biology Concentration (37-38 credits)

Overall GPA for Biology Concentration courses with the Departmental/Program Major Courses must be ≥ 2.5

Required courses for the Biology Concentration that a met within Department/Program requirements, but included in the content GPA for this concentration:

- MA 16010/16100/16500
- MA 16020/16200/16600
- PHYS 23300/17200
- PHYS 23400/27200 or PHYS 24100/25200
- STAT 50300
- CS 17700/15800
- CHM 12901
- CHM 25500 - Organic Chemistry
and
- CHM 25501 - Organic Chemistry Laboratory
OR
- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory

- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory
OR
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (satisfies Science, Technology & Society for core)
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 23100 - Biology III: Cell Structure And Function

- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- IT 22600 - Biotechnology Laboratory I

or

BIOL 19500 Year I Bio Lab: Disease Ecology - Credit Hours: 2.00

or

BIOL 19500 Year I Bio Lab: Phages to Folds - Credit Hours 2.00

Biology Selectives (10 credits)

One course may satisfy multiple requirements - MUST BE A TOTAL OF 10 CREDIT and satisfy Group A, B, Lab and 500+ Level and Intermediate

Group A Selective - Credit Hours: 2.00 - 3.00

- BCHM 56200 - General Biochemistry II
- BIOL 39500 - Special Assignments - Macromolecules
- BIOL 41500 - Introduction To Molecular Biology
- BIOL 41600 - Viruses And Viral Disease
- BIOL 42000 - Eukaryotic Cell Biology
- BIOL 43600 - Neurobiology
- BIOL 43800 - General Microbiology
- BIOL 43900 - Laboratory In General Microbiology
- BIOL 44400 - Human Genetics
- BIOL 44600 - Molecular Bacterial Pathogenesis
- BIOL 47800 - Introduction to Bioinformatics
- BIOL 48100 - Eukaryotic Genetics
- BIOL 49500 - Special Assignments
- BIOL 51100 - Introduction To X-Ray Crystallography
- BIOL 51600 - Molecular Biology Of Cancer
- BIOL 51700 - Molecular Biology: Proteins
- BIOL 52900 - Bacterial Physiology
- BIOL 53300 - Medical Microbiology
- BIOL 53800 - Molecular, Cellular, And Developmental Neurobiology
- BIOL 54100 - Molecular Genetics Of Bacteria
- BIOL 54900 - Microbial Ecology
- BIOL 56200 - Neural Systems
- BIOL 56310 - Protein Bioinformatics
- BIOL 59500 - Special Assignments
 - Meth Meas Biophys Chem
 - Cell Biology of Plants

Group B Selective - Credit Hours: 2.00 - 3.00

- BIOL 30100 - Human Design: Anatomy And Physiology and
- BIOL 30200 - Human Design: Anatomy And Physiology

- BIOL 32800 - Principles Of Physiology
- BIOL 36700 - Principles Of Development
- BIOL 43200 - Reproductive Physiology
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- BIOL 49300 - Introduction To Ethology
- BIOL 53700 - Immunobiology
- BIOL 55900 - Endocrinology
- BIOL 58000 - Evolution
- BIOL 58500 - Ecology
- BIOL 58705 - Animal Communication
- BIOL 59100 - Field Ecology
- BIOL 59200 - The Evolution Of Behavior
- BIOL 59900 - Quantitative Physiology
- Click Base Lab Requirements for all Biology majors for additional lists.
- 500 Level Biology Selective - Credit Hours: 3.00 - 4.00 choose from courses in Group A, B and Lab

Intermediate Biology Requirements

Click Intermediate Selectives for all Biology majors for additional lists.

- BIOL 36700 - Principles Of Development and
- BIOL 36701 - Principles Of Development Lab
- BIOL 41500 - Introduction To Molecular Biology
- BIOL 41600 - Viruses And Viral Disease
- BIOL 42000 - Eukaryotic Cell Biology
- BIOL 43600 - Neurobiology
- BIOL 43800 - General Microbiology
- BIOL 39500 - Special Assignments
- BIOL 32800 - Principles Of Physiology

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior ** (meets Science, Technology, Society Requirement)
- BIOL 13500 - First year Biology Laboratory ^
- CHM 12901 - General Chemistry With A Biological Focus **
- Calc I Option** (MA 16010) - Credit Hours: 3.00
- Language I Option - Credit Hours: 3.00 *

15 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms ^
- Organic CHM I Selective^ - Credit Hours: 4.00
- Calc II Option** (MA 16020) - Credit Hours: 3.00
- Language II Option - Credit Hours: 3.00

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10600 - First-Year Composition * or
- ENGL 10800 - Accelerated First-Year Composition *

16-17 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function ^
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function ^
- Organic CHM II Selective^ - Credit Hours: 4.00
- General Education I Option - Credit Hours: 3.00
- Technical Writing and Technical Presenting (COM 21700*) - Credit Hours: 3.00

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology ^
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology ^
- BIOL 28600 - Introduction To Ecology And Evolution ^
- EDST 20010 - Educational Policies And Laws
- EDCI 27000 - Introduction To Educational Technology And Computing

- General Education II Option - Credit Hours: 3.00

14 Credits

Fall 3rd Year

- Intermediate Biology Selective^ - Credit Hours: 2.00 - 4.00
- Group A Selective^ - Credit Hours: 2.00 - 3.00
- PHYS I Selective^ - Credit Hours: 4.00
- Great Issues Option - Credit Hours: 3.00
- EDCI 20500 - Exploring Teaching As A Career
- EDCI 28500 - Multiculturalism And Education

17-19 Credits

Spring 3rd Year

- Group B Selective^ - Credit Hours: 2.00
- PHYS II Selective^ - Credit Hours: 4.00
- CS Option^ - Credit Hours: 3.00 - 4.00
- EDPS 23500 - Learning And Motivation * (General Education III Option)
- EDPS 26500 - The Inclusive Classroom

15-16 Credits

Fall 4th Year

- Biology Lab Selective(s)^ - Credit Hours: 2.00 - 4.00
- STAT 50300 - Statistical Methods For Biology
- 500 Level Biology Selective^ - Credit Hours: 3.00 - 4.00
- EDCI 42100 - The Teaching Of Biology In Secondary Schools (Multidisciplinary Experience)
- EDPS 32700 - Classroom Assessment
- EDPS 43010 - Secondary Creating And Managing Learning Environments

13-17 Credits

Spring 4th Year

- EDCI 42800 - Teaching Science In The Middle And Junior High School or
- EDCI 55800 - Integrated Science, Technology, Engineering And Mathematics (STEM) Education Methods-Secondary
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 49800 - Supervised Teaching (Teambuilding and Collaboration Experience)

15 Credits

Notes

Note: This degree is intended to give students many options. Students need to consult with a College of Science Academic Advisor regarding requirements.

*Satisfies a University Core Requirement

2.0 average in BIOL courses required to graduate.

2.5 average in Biology concentration ^ courses required to graduate

3.0 average in Professional Education courses required to graduate (No grade below a C-)

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Science Education - Chemistry Concentration, BS

About the Program

A College of Science degree in Science Education prepares future science teachers for certification at the middle and high school level. Students customize their focus by selecting a major area of study in biology, chemistry, physics, or earth and space science within an interdisciplinary science framework. The Science Education degree ensures students are thoroughly educated in their content discipline and modern theories of learning and education. Graduates are in high demand as STEM education and careers continue to grow in demand.

Degree Requirements

131 Credits Required

Curriculum and Degree Requirements

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses

Required Science Education Core Courses (24-30 credits)

Required Chemistry Selective Courses (4-5 credits)

- CHM 11500 - General Chemistry or
- CHM 12300 - General Chemistry For Engineers I or
- CHM 12500 - Introduction To Chemistry I

Required Computing Option (3-4 credits)

Required for College of Science Core

- CS 15800 - C Programming or
- CS 18000 - Problem Solving And Object-Oriented Programming or
- CS 17700 - Programming With Multimedia Objects

Required Calculus Selective Courses (6-10 credits)

- MA 16100 - Plane Analytic Geometry And Calculus I
or
- MA 16500 - Analytic Geometry And Calculus I **AND**
- MA 16200 - Plane Analytic Geometry And Calculus II
or
- MA 16600 - Analytic Geometry And Calculus II

Required Physics Selective Courses (8 credits)

- PHYS 17200 - Modern Mechanics **AND**
- PHYS 27200 - Electric And Magnetic Interactions
or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

Required Statistics Selective Courses (3 credits)

- STAT 30100 - Elementary Statistical Methods or
- STAT 35000 - Introduction To Statistics

Educational Program Course Requirements (36 credits)

- EDCI 20500 - Exploring Teaching As A Career
- EDCI 27000 - Introduction To Educational Technology And Computing
- EDCI 28500 - Multiculturalism And Education
- EDPS 23500 - Learning And Motivation
- EDPS 26500 - The Inclusive Classroom

- EDST 20010 - Educational Policies And Laws
- EDPS 32700 - Classroom Assessment
- EDPS 43010 - Secondary Creating And Managing Learning Environments
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 42400 - The Teaching Of Earth And Physical Science In The Secondary Schools
- EDCI 49800 - Supervised Teaching
- EDCI 42800 - Teaching Science In The Middle And Junior High School or
- EDCI 55800 - Integrated Science, Technology, Engineering And Mathematics (STEM) Education Methods-Secondary

Other Departmental /Program Course Requirements (24-28 credits)

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- Language I Option* - (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 3.00 - 4.00
- Language II Option* - (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 3.00 - 4.00
- Technical Writing Option and Technical Presenting Option - (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- General Education I Option - (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education II Option - (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- Science, Technology & Society for University Core - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- CHM 19400 - Freshman Chemistry Orientation

Chemistry Concentration (39-46 credits)

Overall GPA for Chemistry Concentration courses with the Departmental/Program Major Courses must be ≥ 2.5

- MA 26100 - Multivariate Calculus or
Required courses for the Chemistry Concentration that a met within Department/Program requirements, but included in the content GPA for this concentration:
- MA 16500/16100
 - MA 16600/16200
 - PHYS 17200
 - PHYS 27200 or PHYS 24100/25200
 - CHM 12500/11500/12300
- MA 27101 - Honors Multivariate Calculus
- CHM 11600 - General Chemistry or
- CHM 12600 - Introduction To Chemistry II or
- CHM 12400 - General Chemistry For Engineers II or

- CHM 13600 - General Chemistry Honors
- CHM 26505 - Organic Chemistry or
- CHM 26100 - Organic Chemistry

- CHM 26500 - Organic Chemistry Laboratory or
- CHM 26300 - Organic Chemistry Laboratory or
- CHM 26700 - Organic Chemistry Laboratory Honors

- CHM 26200 - Organic Chemistry or
- CHM 26605 - Organic Chemistry

- CHM 26600 - Organic Chemistry Laboratory or
- CHM 26400 - Organic Chemistry Laboratory or
- CHM 26800 - Organic Chemistry Laboratory Honors

- CHM 32100 - Analytical Chemistry I
or
- CHM 32300 - Analytical Chemistry I Honors

- CHM 24100 - Introductory Inorganic Chemistry
- CHM 29400 - Sophomore Chemistry Seminar
- CHM 34200 - Inorganic Chemistry
- CHM 37300 - Physical Chemistry
- CHM 37400 - Physical Chemistry

- CHM 33300 - Principles Of Biochemistry or
- CHM 53300 - Introductory Biochemistry or
- BCHM 56100 - General Biochemistry I

Physical Chemistry Laboratory (2 credits)

- CHM 37301 - Physical Chemistry Laboratory and
- CHM 37401 - Physical Chemistry Laboratory
or
- CHM 37600 - Physical Chemistry Laboratory

Electives (0-3 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society

- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- Chemistry I (CHM 1250*[^] recommended) - Credit Hours: 5.00
- [^] Calc I Option - Credit Hours: 5.00
- ENGL 10600 - First-Year Composition * or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- CHM 19400 - Freshman Chemistry Orientation
- EDCI 27000 - Introduction To Educational Technology And Computing

18 Credits

Spring 1st Year

- Chemistry II (CHM 12600[^] recommended) - Credit Hours: 5.00
- [^] Calc II Option - Credit Hours: 5.00
- Technical Writing/Technical Presentation (COM 21700* recommended) - Credit Hours: 3.00
- PHYS 17200 - Modern Mechanics
[^]

17 Credits

Fall 2nd Year

- CHM 26505 - Organic Chemistry [^] or
- CHM 26100 - Organic Chemistry

[^]
- CHM 26300 - Organic Chemistry Laboratory [^]
- [^] Calc III Option - Credit Hours: 4.00
- EDCI 20500 - Exploring Teaching As A Career
- CHM 29400 - Sophomore Chemistry Seminar [^]

- EDCI 28500 - Multiculturalism And Education

15 Credits

Spring 2nd Year

- CHM 26605 - Organic Chemistry ^ or
- CHM 26200 - Organic Chemistry

- CHM 26400 - Organic Chemistry Laboratory ^ or
- CHM 26600 - Organic Chemistry Laboratory or
- CHM 26800 - Organic Chemistry Laboratory Honors

- CHM 24100 - Introductory Inorganic Chemistry ^
- Physics Option (PHYS 27200^ recommended) - Credit Hours: 4.00
- EDST 20010 - Educational Policies And Laws
- Language I Option - Credit Hours: 3.00 *

16 Credits

Fall 3rd Year

- CHM 37300 - Physical Chemistry ^
- CHM 37301 - Physical Chemistry Laboratory ^
- EDPS 23500 - Learning And Motivation * (General Education I Option)
- EDPS 26500 - The Inclusive Classroom
- STAT 30100 - Elementary Statistical Methods *
- General Education I Option - Credit Hours: 3.00

16 Credits

Spring 3rd Year

- CHM 34200 - Inorganic Chemistry ^
- CHM 37400 - Physical Chemistry ^
- CHM 37401 - Physical Chemistry Laboratory ^
- General Education II Option - Credit Hours: 3.00
- Language II Option - Credit Hours: 3.00
- Science, Technology, & Society - Credit Hours: 3.00 *
- EDPS 32700 - Classroom Assessment
- EDPS 43010 - Secondary Creating And Managing Learning Environments

18 Credits

Fall 4th Year

- CHM 32100 - Analytical Chemistry I ^ or
- CHM 32300 - Analytical Chemistry I Honors

- CHM 33300 - Principles Of Biochemistry ^ or
- CHM 53300 - Introductory Biochemistry or
- BCHM 56100 - General Biochemistry I

- EDCI 42400 - The Teaching Of Earth And Physical Science In The Secondary Schools (Multidisciplinary Experience)
- Computing Option - Credit Hours: 3.00 - 4.00
- Great Issues Option - Credit Hours: 3.00

16-17 Credits

Spring 4th Year

- EDCI 42800 - Teaching Science In The Middle And Junior High School or
- EDCI 55800 - Integrated Science, Technology, Engineering And Mathematics (STEM) Education Methods-Secondary
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 49800 - Supervised Teaching (Teambuilding and Collaboration Experience)

15 Credits

Notes

Note: This degree is intended to give students many options. Students need to consult with a College of Science Academic Advisor regarding requirements.

*Satisfies a University Core Requirement

2.0 average in CHM courses required to graduate.

2.5 average in CHM concentration ^ courses required to graduate

3.0 average in Professional Education courses required to graduate (No grade below a C-)

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Science Education - Earth Space Science Concentration, BS

About the Program

A College of Science degree in Science Education prepares future science teachers for certification at the middle and high school level. Students customize their focus by selecting a major area of study in biology, chemistry, physics, or earth and space science within an interdisciplinary science framework. The Science Education degree ensures students are thoroughly educated in their content discipline and modern theories of learning and education. Graduates are in high demand as STEM education and careers continue to grow in demand.

Degree Requirements

129 Credits Required

Curriculum and Degree Requirements

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- [Composition and Presentation](#)
- [Computing](#)
- [Culture and Diversity](#)
- [General Education](#)
- [Great Issues in Science](#)
- [Laboratory Science](#)
- [Mathematics](#)
- [Multidisciplinary Experience](#)
- [Statistics](#)
- [Teambuilding and Collaboration](#)
- [No Count List](#)

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses

Required Science Education Core Courses (24-30 credits)

Required Chemistry Selective Courses (4-5 credits)

- CHM 11500 - General Chemistry or
- CHM 12500 - Introduction To Chemistry I

Required Computing Option (3-4 credits)

Meets College of Science Computing Requirement

- CS 15800 - C Programming or
- CS 17700 - Programming With Multimedia Objects or
- CS 18000 - Problem Solving And Object-Oriented Programming

Required Calculus Selective Courses (6-10 credits)

- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core/satisfies BIED Concentration only) and
- MA 16020 - Applied Calculus II (satisfies Quantitative Reasoning for core/satisfies BIED Concentration only)
or
- MA 16100 - Plane Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core, ESSE, PHED Science Core requirements and BIED, CHED Concentration requirement) and
- MA 16200 - Plane Analytic Geometry And Calculus II (satisfies Quantitative Reasoning for core, ESSE, PHED Science Core requirements and BIED, CHED Concentration requirement)
or

- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core, ESSE, PHED Science Core requirements and BIED, CHED Concentration requirement) and
- MA 16600 - Analytic Geometry And Calculus II (satisfies Quantitative Reasoning for core, ESSE, PHED Science Core requirements and BIED, CHED Concentration requirement)

Required Physics Selective Courses (8 credits)

- PHYS 17200 - Modern Mechanics
or
- PHYS 22000 - General Physics **AND**
- PHYS 27200 - Electric And Magnetic Interactions
or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory
or
- PHYS 22100 - General Physics

Required Statistics Selective Courses (3 credits)

Meets College of Science Statistics Requirement

- STAT 30100 - Elementary Statistical Methods

Educational Program Course Requirements (36 credits)

Professional Education GPA Average ≥ 3.00 - no grade lower than C-

- EDCI 20500 - Exploring Teaching As A Career
- EDCI 27000 - Introduction To Educational Technology And Computing
- EDCI 28500 - Multiculturalism And Education
- EDPS 23500 - Learning And Motivation (satisfies Behavior/Social Science for core) (satisfies General Education III Option)
- EDPS 26500 - The Inclusive Classroom (satisfies Behavior/Social Science for core)
- EDST 20010 - Educational Policies And Laws
- EDPS 32700 - Classroom Assessment
- EDPS 43010 - Secondary Creating And Managing Learning Environments
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 42400 - The Teaching Of Earth And Physical Science In The Secondary Schools
- EDCI 42800 - Teaching Science In The Middle And Junior High School or
- EDCI 55800 - Integrated Science, Technology, Engineering And Mathematics (STEM) Education Methods- Secondary
- EDCI 49800 - Supervised Teaching (Meets Teambuilding and Collaboration Experience [LINK](#))

Other Departmental/Program Course Requirements (24-28 credits)

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 3.00 - 4.00
- Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 3.00 - 4.00
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- UCC Science, Technology & Society - Credit Hours: 3.00
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences

Earth Space Science Concentration (38 credits)

Overall GPA for Earth Space Science Concentration courses with the Departmental/Program Major Courses must be ≥ 2.5

- CHM 11600 - General Chemistry or
Required courses for the Earth Space Science Concentration that a met within Department/Program requirements, but included in the content GPA for this concentration:
- PHYS 17200/22000
- PHYS 27200/22100 or PHYS 24100/25200
- CHM 11500/12500
- CHM 12600 - Introduction To Chemistry II or
- CHM 12901 - General Chemistry With A Biological Focus or
- CHM 13600 - General Chemistry Honors
- EAPS 11200 - Earth Through Time or
- EAPS 10900 - The Dynamic Earth or
- EAPS 31900 - Exploring Earth Through Time
- EAPS 11800 - Introduction To Earth Sciences or
- EAPS 11100 - Physical Geology
- EAPS 24300 - Earth Materials I (also satisfies Science Selective for core)
- EAPS 39000 - Geologic Field Methods
- EAPS 35300 - Earth Surface Processes
- EAPS 35400 - Plate Tectonics
- EAPS/ASTR Elective (could satisfy Science, Technology & Society for University Core) - Credit Hours: 9.00
- EAPS 49000 - Field Geology In Rocky Mountains or 3XXXX Geology Field Experience (6 credits)

EAPS/ASTR Elective

9 credits needed

- ASTR 26300 - Descriptive Astronomy: The Solar System

- ASTR 26400 - Descriptive Astronomy: Stars And Galaxies
- EAPS 10400 - Oceanography
- EAPS 10500 - The Planets
- EAPS 11500 - Dinosaurs
- EAPS 11600 - Earthquakes And Volcanoes
- EAPS 11700 - Introduction To Atmospheric Science
- EAPS 12000 - Introduction To Geography
- EAPS 13800 - Thunderstorms And Tornadoes
- EAPS 22100 - Survey Of Atmospheric Science
- EAPS 22500 - Science Of The Atmosphere
- EAPS 24400 - Earth Materials II
- EAPS 35200 - Structural Geology
- EAPS 47400 - Sedimentation And Stratigraphy

Electives (0-11 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- EAPS 11800 - Introduction To Earth Sciences ^ *
- MA 16100 - Plane Analytic Geometry And Calculus I ^ *
- CHM 11500 - General Chemistry ^ *
- ENGL 10600 - First-Year Composition *(1st or 2nd sem) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

16 Credits

Spring 1st Year

- EAPS 11200 - Earth Through Time ^* or
- EAPS 10900 - The Dynamic Earth ^* or
- EAPS 31900 - Exploring Earth Through Time

- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences ^
- MA 16200 - Plane Analytic Geometry And Calculus II ^ *
- CHM 11600 - General Chemistry ^ *
- General Education I Option - Credit Hours: 3.00

16 Credits

Fall 2nd Year

- EAPS 24300 - Earth Materials I ^*

- PHYS 17200 - Modern Mechanics ^ * or
- PHYS 22000 - General Physics ^ *

- EDCI 20500 - Exploring Teaching As A Career
- EDCI 28500 - Multiculturalism And Education

14 Credits

Spring 2nd Year

- EAPS 35400 - Plate Tectonics

- PHYS 27200 - Electric And Magnetic Interactions or
- PHYS 22100 - General Physics

- EDPS 23500 - Learning And Motivation
- EDPS 26500 - The Inclusive Classroom
- COM 21700 - Science Writing And Presentation

16 Credits

Fall 3rd Year

- EAPS 35300 - Earth Surface Processes
- STAT Statistics - Credit Hours: 3.00 *
- C S Computer Programming - Credit Hours: 4.00
- EDST 20010 - Educational Policies And Laws

- EDPS 32700 - Classroom Assessment
- EDPS 43010 - Secondary Creating And Managing Learning Environments
- Language I Option - Credit Hours: 3.00

16 Credits

Spring 3rd Year

- EAPS 39000 - Geologic Field Methods
- EAPS/ASTR Elective - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00 *
- Language II Option - Credit Hours: 3.00
- EDCI 27000 - Introduction To Educational Technology And Computing

15 Credits

Summer 3rd Year

- EAPS 49000 - Field Geology In Rocky Mountains

6 Credits

Fall 4th Year

- EDCI 42400 - The Teaching Of Earth And Physical Science In The Secondary Schools
- EAPS/ASTR Elective - Credit Hours: 3.00
- EAPS/ASTR Elective - Credit Hours: 3.00
- Science, Technology, Society (STS) or Elective - Credit Hours: 3.00
- General Education II Option - Credit Hours: 3.00

15 Credits

Spring 4th Year

- EDCI 42800 - Teaching Science In The Middle And Junior High School or
- EDCI 55800 - Integrated Science, Technology, Engineering And Mathematics (STEM) Education Methods-Secondary
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 49800 - Supervised Teaching

15 Credits

Notes

Note: This degree is intended to give students many options. Students need to consult with a College of Science Academic Advisor regarding requirements.

*Satisfies a University Core Requirement

Students must earn a "C-" or better in all required ^ courses.

2.0 Graduation GPA required for Bachelor of Science degree.

2.0 average in EAPS major classes required to graduate.

Overall GPA for Earth Space Science Concentration courses with the Departmental/Program Major Courses must be ≥ 2.5

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Science Education - Physics Concentration, BS

About the Program

A College of Science degree in Science Education prepares future science teachers for certification at the middle and high school level. Students customize their focus by selecting a major area of study in biology, chemistry, physics, or earth and space science within an interdisciplinary science framework. The Science Education degree ensures students are thoroughly educated in their content discipline and modern theories of learning and education. Graduates are in high demand as STEM education and careers continue to grow in demand.

Degree Requirements

127 Credits Required

Curriculum and Degree Requirements

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses

Required Science Education Core Courses (24-30 credits)

Required Chemistry Selective Courses (4-5 credits)

- CHM 11500 - General Chemistry or
- CHM 12300 - General Chemistry For Engineers I or
- CHM 12500 - Introduction To Chemistry I

Required Computing Option (3-4 credits)

- CS 15800 - C Programming or
- CS 17700 - Programming With Multimedia Objects or
- CS 18000 - Problem Solving And Object-Oriented Programming

Required Calculus Selective Courses (6-10 credits)

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
AND
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Required Physics Selective Courses (8 credits)

- PHYS 17200 - Modern Mechanics
- Honors version REQUIRED
AND
- PHYS 27200 - Electric And Magnetic Interactions
- Honors version REQUIRED

Required Statistics Selective Courses (3 credits)

- STAT 30100 - Elementary Statistical Methods

Educational Program Course Requirements (36 credits)

Professional Education GPA Average ≥ 3.00 - no grade lower than C-

- EDCI 20500 - Exploring Teaching As A Career
- EDCI 27000 - Introduction To Educational Technology And Computing
- EDCI 28500 - Multiculturalism And Education
- EDPS 23500 - Learning And Motivation (satisfies Behavior/Social Science for core) (satisfies General Education III Option)
- EDPS 26500 - The Inclusive Classroom (satisfies Behavior/Social Science for core)
- EDST 20010 - Educational Policies And Laws
- EDPS 32700 - Classroom Assessment
- EDPS 43010 - Secondary Creating And Managing Learning Environments

- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 42400 - The Teaching Of Earth And Physical Science In The Secondary Schools (satisfies Multidisciplinary Experience) - for BIED
- EDCI 42800 - Teaching Science In The Middle And Junior High School or
- EDCI 55800 - Integrated Science, Technology, Engineering And Mathematics (STEM) Education Methods-Secondary
- EDCI 49800 - Supervised Teaching (Meets Teambuilding and Collaboration Experience [LINK](#))

Other Departmental /Program Course Requirements (30-36 credits)

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 3.00 - 4.00
- Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 3.00 - 4.00
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- Science, Technology and Society requirement for UCC - Credit Hours: 1.00 - 3.00
- MA 26100 - Multivariate Calculus (satisfies Quantitative Reasoning Selective for core) or
- MA 27101 - Honors Multivariate Calculus

PHYS Major Selectives (12-13 credits)

- PHYS/ASTR \geq 300 level - Credit Hours: 3.00
- PHYS 53600 - Electronic Techniques For Research or
- PHYS 58000 - Computational Physics
- Science/Engineering \geq 300 level (met by Statistics Option) - Credit Hours: 0.00
- Science/Engineering \geq 300 level (could be met by Great Issues Option) - Credit Hours: 3.00

Physics Concentration (30-31 credits)

Overall GPA for Physics Concentration courses with the Departmental/Program Major Courses must be \geq 2.5

- CHM 11600 - General Chemistry or
Required courses for the Biology Concentration that a met within Department/Program requirements, but included in the content GPA for this concentration:

- CHM 11500/12500/12300
- PHYS 17200/17200H (note: Majors in Physics must take the Honors Versions)
- PHYS 27200/27200H (note: Majors in Physics must take the Honors Versions)
- CHM 12600 - Introduction To Chemistry II or
- CHM 12400 - General Chemistry For Engineers II or
- CHM 13600 - General Chemistry Honors

- PHYS 30600 - Mathematical Methods Of Physics I
- PHYS 30700 - Mathematical Methods Of Physics II
- PHYS 31000 - Intermediate Mechanics
- PHYS 33000 - Intermediate Electricity And Magnetism
- PHYS 34000 - Modern Physics Laboratory
- PHYS 34400 - Modern Physics
- PHYS 36000 - Quantum Mechanics
- PHYS 42200 - Waves And Oscillations
- PHYS 45000 - Intermediate Laboratory

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- PHYS 17200 - Modern Mechanics *^ (HONORS)
- CHM 11500 - General Chemistry *^
- MA 16100 - Plane Analytic Geometry And Calculus I *

- ENGL 10600 - First-Year Composition * or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

17 Credits

Spring 1st Year

- PHYS 27200 - Electric And Magnetic Interactions *^ (HONORS)
- CHM 11600 - General Chemistry *^
- MA 16200 - Plane Analytic Geometry And Calculus II *
- Language I Option - Credit Hours: 3.00 - 4.00 *

16-17 Credits

Fall 2nd Year

- PHYS 30600 - Mathematical Methods Of Physics I ^
- PHYS 34000 - Modern Physics Laboratory ^
- PHYS 34400 - Modern Physics ^
- MA 26100 - Multivariate Calculus *
- Language II Option - Credit Hours: 3.00 - 4.00

15-16 Credits

Spring 2nd Year

- PHYS 30700 - Mathematical Methods Of Physics II ^
- PHYS 42200 - Waves And Oscillations ^
- STAT 30100 - Elementary Statistical Methods * (Sci,Engr Selective)
- EDCI 20500 - Exploring Teaching As A Career
- EDCI 27000 - Introduction To Educational Technology And Computing
- EDCI 28500 - Multiculturalism And Education

18 Credits

Fall 3rd Year

- PHYS 31000 - Intermediate Mechanics ^
- PHYS 33000 - Intermediate Electricity And Magnetism ^
- PHYS 45000 - Intermediate Laboratory ^
- EDPS 23500 - Learning And Motivation * (General Education I Option)
- EDPS 26500 - The Inclusive Classroom
- General Education II Option - Credit Hours: 3.00

18 Credits

Spring 3rd Year

- PHYS 36000 - Quantum Mechanics ^
- PHYS 53600 - Electronic Techniques For Research
- COM 21700 - Science Writing And Presentation *
- General Education III Option - Credit Hours: 3.00
- Science, Technology, and Society - Credit Hours: 1.00 - 3.00

13-16 Credits

Fall 4th Year

- PHYS,ASTR \geq 300 level - Credit Hours: 3.00
- EDCI 42400 - The Teaching Of Earth And Physical Science In The Secondary Schools (Multidisciplinary Experience)
- Great Issues Option (Sci, Engr selective) - Credit Hours: 3.00
- CS Option - Credit Hours: 3.00 - 4.00
- EDST 20010 - Educational Policies And Laws
- EDPS 32700 - Classroom Assessment
- EDPS 43010 - Secondary Creating And Managing Learning Environments

15-16 Credits

Spring 4th Year

- EDCI 42800 - Teaching Science In The Middle And Junior High School or
- EDCI 55800 - Integrated Science, Technology, Engineering And Mathematics (STEM) Education Methods-Secondary
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems
- EDCI 49800 - Supervised Teaching (Teambuilding and Collaboration Experience)

15 Credits

Notes

Note: This degree is intended to give students many options. Students need to consult with a College of Science Academic Advisor regarding requirements.

*Satisfies a University Core Requirement

2.0 average in PHYS/ ASTR courses required to graduate.

2.5 average in Physics Concentration ^ courses required to graduate

3.0 average in Professional Education courses required to graduate (No grade below a C-)

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Certificate

Learning Beyond the Classroom Certificate

Learning Beyond the Classroom (LBC) is open only to students majoring in the College of Science. It is a voluntary program aimed at encouraging you, the College of Science student, to engage in activities that provide hands-on experience and opportunities to apply classroom knowledge. Successful completion of the LBC program will be noted on your official Purdue transcript. You will also receive a certificate of completion.

Participation in LBC involves attending, organizing, or leading activities that fall into three general categories: career and professional development; service, citizenship and leadership; and experience with domestic and international diversity. Progress in each of the three areas is tracked by a point system. Points are earned by submitting reports on participation in activities. The number of points earned varies with the intensity of the activity.

Learning Beyond the Classroom website

Requirements for the Certificate

Completing the LBC certificate requires that you:

1. Accumulate a total of 24 points, with at least 4 points in each of 3 categories.
2. Participate in at least one intensive activity lasting an extended period of time, such as semester-long study abroad, full-time summer internship, two (consecutive) semesters of undergraduate research and academic year resident assistant. Such an activity is worth 10 points.
3. Include either (a) 3 credits of approved coursework with grades of P or C- or higher (one or more courses totaling 3 credits can meet this requirement) or (b) a semester-long study abroad program (worth 10 points) or some combination of spring break (4 points) and/or summer study abroad activities (6 points), totaling 10 points.
4. In most cases, a maximum of 6 points per year and 10 points in total may be earned for any particular activity. It is estimated that completion of the certificate will take approximately 30 hours over your college career in addition to the intense 10-point activity described above.

Learning Beyond the Classroom Details

Courses

Among the requirements of the Learning Beyond the Classroom Certificate Program is that you participate in either (a) approved coursework with grades of C- or higher (one or more courses totaling 3 credits meets this requirement) or (b) study abroad.

Below you will find a table of courses that have been identified as meeting the objectives of this program. If there is an experiential course which is not here that you believe to be similar to those listed, contact the administrator. The College of Science Office of Undergraduate Education reserves the right to determine whether a course meets the program criteria.

- AGR 49000 - Special Problems - International Development Strategies
- BIOL 11500 - Biology Resource Seminar
- BIOL 19700 - Biology Freshman Honors Seminar
- BIOL 29300 - Sophomore Seminar: Planning Your Future In Biology
- BIOL 29400 - Biology Research
- BIOL 29500 - Special Assignments - Teaching Biology
- BIOL 39300 - Preparing For Your Future In Biology
- BIOL 49400 - Biology Research
- BIOL 49700 - Biology Honors Seminar
- BIOL 49800 - Biology Teaching
- BIOL 49900 - Biology Honors Thesis Research
- CHM 19400 - Freshman Chemistry Orientation
- CHM 19700 - Chemistry Freshman Honors Research
- CHM 29400 - Sophomore Chemistry Seminar
- CHM 49400 - Junior-Senior Chemistry Seminar
- CHM 49900 - Special Assignments
- CS 19100 - Freshman Resources Seminar
- CS 19700 - Freshman Honors Seminar
- CS 29000 - Topics In Computer Sciences - Indiv Study or Service Learn Outreach
- CS 29100 - Sophomore Development Seminar
- CS 39000 - Topics In Computer Sciences
- CS 39100 - Junior Resources Seminar
- CS 49000 - Topics In Computer Sciences For Undergraduates - Indiv Study or Part-time Prof Experience CS
- CS 49700 - Honors Research Project
- EAPS 10900 - The Dynamic Earth
- EAPS 11800 - Introduction To Earth Sciences
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences
- EAPS 19100 - Introductory Topics In Earth And Atmospheric Science - Service Learning in Outreach
- EAPS 35200 - Structural Geology
- EAPS 35300 - Earth Surface Processes
- EAPS 39000 - Geologic Field Methods
- EAPS 39100 - Topics In Earth And Atmospheric Sciences - Team Weather Forecasting or Meteorology Intern
- EAPS 41900 - Internship In Environmental Geosciences
- EAPS 43400 - Weather Analysis And Forecasting
- EAPS 49400 - Earth And Atmospheric Sciences Undergraduate Seminar
- EAPS 49700 - Earth And Atmospheric Sciences Undergraduate Readings And Research
- EAPS 55600 - Planetary Geology
- EAPS 59000 - Field Geology North America
- ECE 37900 - Junior Participation In Vertically Integrated Projects (VIP) In Electrical And Computer Engineering
- ECE 47900 - Senior Participation In Vertically Integrated Projects (VIP) In Electrical And Computer Engineering

- EDCI 49000 - Individual Research And Teaching Experience - Science Teaching Service Learning
- EDCI 49800 - Supervised Teaching
- ENTM 49800 - Special Problems In Entomology - Indiv Study or Forensic Teaching Assistant
- ENTR 48000 - Entrepreneurship Capstone
- EPCS 10100 - First Year Participation In EPICS
- EPCS 10200 - First Year Participation In EPICS
- EPCS 20100 - Sophomore Participation In EPICS
- EPCS 20200 - Sophomore Participation In EPICS
- GS 49000 - Directed Reading In General Studies - Purdue Promise Facilitation Course or Discovery Park Undergr Res
- MA 10800 - Mathematics As A Profession And A Discipline
- MA 17000 - Introduction To Actuarial Science
- MA 48400 - Seminar On Teaching College Algebra And Trigonometry
- MA 49000 - Topics In Mathematics For Undergraduates
- MCMP 49000 - Special Topics - Indiv Study or TA for MCMP 204/205 lab
- ME 29700 - Mechanical Engineering Sophomore Projects
- PHYS 10400 - First Year Physics Seminar
- PHYS 21700 - Introduction To Current Physics And Forefront Research Honors
- PHYS 23500 - Seminar In Careers In Physics
- PHYS 49000 - Special Assignments
- PHYS 59000 - Reading And Research
- PHYS 59300 - Independent Research
- PSY 39000 - Research Experience In Psychology
- SCI 10000 - Multicultural Leadership Seminar
- SCI 11000 - Science Honors Seminar
- SCI 19500 - Special Topics In Science - Global Science Leadership Seminar or Bonding Serv Learning
- SCI 39500 - Special Topics In Science - Global Science Experience
- SCI 49000 - Topics In Science For Undergraduates - Dean's Leadership Forum
- STAT 17000 - Introduction To Actuarial Science
- STAT 19000 - Topics In Statistics For Undergraduates - First Year Statistics Seminar
- STAT 29000 - Topics In Statistics For Undergraduates - Rising Above the Storm
- STAT 49000 - Topics In Statistics For Undergraduates

Notes

- Students who are enrolling in EDCI49800 or ENTR48000 during their final semester and wish to receive points toward LBC should alert LBC of their plans at the beginning of the semester.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Department of Biological Sciences

About the Biological Sciences Program

Discovery. This word captures our purpose, commitment, and vision. As a leading department in a major research university, our mission is to effectively integrate learning, discovery, and engagement. The best learning is experiential, and leads to a clear understanding of how discoveries are made, how science is conducted, and how ideas are communicated. The best learning is facilitated by faculty who are active in research and who can engage students in the excitement of biology. And the best learning results in alumni who are well-prepared to successfully pursue their chosen careers.

As we discover the many facets of biocomplexity, from vast ecosystems to the structure and function of individual molecules, we remain committed to our mission. Our faculty, staff, and students are engaged with the communities of science and education, the worlds of industry and business, and our alumni and friends. To each individual who joins us, we promise opportunities to experience the excitement of discovery in biology. We encourage you to become a part of our team-as a student, alumnus, corporate partner, scientific collaborator, or a member of our faculty and staff. Join us on our journey of learning, discovery, and engagement. Discover Biology at Purdue!

Faculty

Department of Biological Sciences Website

Contact Information

The Department of Biological Sciences address is:
915 W. State Street West Lafayette, IN 47907-2054

Main Office

Contact person: Amanda Jenkins
Phone Number: (765) 494-4408
Fax No. is: (765) 494-0876

Graduate Information

For Graduate Information please see Biological Sciences Graduate Program Information.

Baccalaureate

Biochemistry (Biology), BS

About the Program

Biochemistry investigates the chemical and molecular foundations of life processes. A student may study the transfer of genetic information into biological structures, the conversion of nutrients into cell constituents and their utilization as sources of energy, the storage of memory, and the chemical nature of neural processes. Laboratory techniques include electrophoresis, chromatography, Western blotting, protein sequence analysis, and peptide mapping. Understanding the development and application of enzymatic assays is fundamental to this field of study. This rigorous curriculum is excellent preparation for a number of careers in both academic and industrial research, including cancer and AIDS research, medicine, veterinary medicine, dentistry, structural biology, genetics, and medicinal chemistry and drug development.

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses

A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab.

Required Major Courses (41-44 credits)

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (satisfies Science, Technology & Society Selective for core)

BIOLOGY CORE

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution

- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments or
 - Disease Ecology
 - Phages to Folds
- IT 22600 - Biotechnology Laboratory I

REQUIRED UPPER LEVEL BIOLOGY COURSEWORK

- BIOL 41500 - Introduction To Molecular Biology
 - BIOL 42000 - Eukaryotic Cell Biology
 - BIOL 59500 - Special Assignments BIOL 59500: Methods & Measurements in Biophysical Chemistry
 - BCHM 56100 - General Biochemistry I
 - BCHM 56200 - General Biochemistry II
 - CHM 33901 - Biochemistry Laboratory
- More Biology upper-level biology requirements are in the next section.*

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Click [Biology Selectives List for Biochemistry](#) for additional lists.

Click [Base Lab Requirements](#) for all Biology majors for additional lists.

Other Departmental Requirements: (70-79 credits)

Chemistry Selectives

- CHM 12901 - General Chemistry With A Biological Focus

ORGANIC CHEMISTRY SELECTIVES

- CHM 25500 - Organic Chemistry and
- CHM 25501 - Organic Chemistry Laboratory and
- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory
or
- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

ANALYTICAL CHEMISTRY SELECTIVE

- BCHM 22100 - Analytical Biochemistry or
- CHM 32100 - Analytical Chemistry I

PHYSICAL CHEMISTRY SELECTIVE

- CHM 37200 - Physical Chemistry or
- CHM 37300 - Physical Chemistry and
- CHM 37400 - Physical Chemistry

Physics Selectives

- PHYS 23300 - Physics For Life Sciences I
and
- PHYS 23400 - Physics For Life Sciences II or
- PHYS 17200 - Modern Mechanics (*satisfies Science Selective for core*) and
- PHYS 27200 - Electric And Magnetic Interactions or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

Calculus Selectives

- MA 16100 - Plane Analytic Geometry And Calculus I and
- MA 16200 - Plane Analytic Geometry And Calculus II
or
- MA 16500 - Analytic Geometry And Calculus I and
- MA 16600 - Analytic Geometry And Calculus II

Additional Other Requirements

- COM 21700 - Science Writing And Presentation (*satisfies Oral Communications for core*)
- STAT 50300 - Statistical Methods For Biology

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

Selective lists (see links in Science Core at the top of the page)

- Computer Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00 - 4.00
- Culture & Diversity 1 Selective - Credit Hours: 3.00
- Culture & Diversity 2 Selective - Credit Hours: 3.00
- Culture & Diversity 3 Selective - Credit Hours: 3.00
- General Education 1 Selective (*may satisfy UC Core Human Culture Behavioral/Social Science*) - Credit Hours: 3.00
- General Education 2 Selective (*may satisfy UC Core Human Cultures Humanities*) - Credit Hours: 3.00
- General Education 3 Selective - Credit Hours: 3.00
- Great Issues in Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00-3.00

Electives (1-10 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- CHM 12901 - General Chemistry With A Biological Focus
- IT 22600 - Biotechnology Laboratory I
- BIOL 13500 - First year Biology Laboratory or

- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments - Disease Ecology or
- Phages to Folds
- Calculus I Selective - Credit Hours: 4.00 - 5.00
- Language and Culture 1 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (BIOL 11500 recommended)

17-19 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Organic Chem 1 Selective - Credit Hours: 4.00
- Calculus II Selective - Credit Hours: 4.00 - 5.00
- Language and Culture 2 Selective - Credit Hours: 3.00

17-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- COM 21700 - Science Writing And Presentation
- Organic Chem 2 Selective - Credit Hours: 4.00
- Language and Culture 3 Selective - Credit Hours: 3.00

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- PHYS 1 Selective - Credit Hours: 4.00
- General Education 1 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (BIOL 29300 recommended)

15 Credits

Fall 3rd Year

- BCHM 56100 - General Biochemistry I
- BIOL 39500 - Special Assignments - Macromolecules
- PHYS 2 Selective - Credit Hours: 4.00
- General Education 2 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16 Credits

Spring 3rd Year

- BIOL 41500 - Introduction To Molecular Biology
- BCHM 56200 - General Biochemistry II
- CHM 33901 - Biochemistry Laboratory
- Computer Science Selective - Credit Hours: 3.00 - 4.00
- General Education 3 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (BIOL 39300 recommended)

15 Credits

Fall 4th Year

- BIOL 42000 - Eukaryotic Cell Biology
- BIOL 59500 - Special Assignments - Methods & Measurements in Biophysical Chemistry
- Biology Selective - Credit Hours: 2.00 - 3.00
- Analytical Chemistry Selective - Credit Hours: 3.00 - 4.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00 - 3.00

12-16 Credits

Spring 4th Year

- STAT 50300 - Statistical Methods For Biology
- Physical Chemistry Selective - Credit Hours: 4.00
- Great Issues in Science Selective - Credit Hours: 3.00
- Base Lab Requirement - Credit Hours: 2.00 - 4.00
- Elective - Credit Hours: 1.00

13-15 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Biochemistry Honors, BS

About the Program

Biochemistry investigates the chemical and molecular foundations of life processes. A student may study the transfer of genetic information into biological structures, the conversion of nutrients into cell constituents and their utilization as sources of energy, the storage of memory, and the chemical nature of neural processes. Laboratory techniques include electrophoresis, chromatography, Western blotting, protein sequence analysis, and peptide mapping. Understanding the development and application of enzymatic assays is fundamental to this field of study. This rigorous curriculum is excellent preparation for a number of careers in both academic and industrial research, including cancer and AIDS research, medicine, veterinary medicine, dentistry, structural biology, genetics, and medicinal chemistry and drug development.

Biochemistry Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.

- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click here.

Departmental/Program Major Courses (41-44 credits)

A 3.0 or higher graduation index is required to graduate in the Biochemistry Honors Curriculum

A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab.

Required Major Courses

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (*satisfies University Core Science, Technology & Society Selective*)

BIOLOGY CORE

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- IT 22600 - Biotechnology Laboratory I

- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments - Disease Ecology or
- Phages to Folds

REQUIRED UPPER LEVEL BIOLOGY COURSEWORK

- BIOL 41500 - Introduction To Molecular Biology
- BIOL 42000 - Eukaryotic Cell Biology
- BIOL 59500 - Special Assignments - Methods & Measurement in Physical Biochemistry
- BCHM 56100 - General Biochemistry I
- BCHM 56200 - General Biochemistry II
- CHM 33901 - Biochemistry Laboratory

More Biology upper-level biology requirements are in the next section.

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Click Biology Selectives List for Biochemistry for additional lists.

Click Base Lab Requirements for all Biology majors for additional lists.

Other Departmental Requirements: (70-79 credits)

Chemistry Selectives

- CHM 12901 - General Chemistry With A Biological Focus

ORGANIC CHEMISTRY SELECTIVES

- CHM 25500 - Organic Chemistry and
- CHM 25501 - Organic Chemistry Laboratory and
- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory
or
- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

ANALYTICAL CHEMISTRY SELECTIVE

- BCHM 22100 - Analytical Biochemistry or
- CHM 32100 - Analytical Chemistry I

PHYSICAL CHEMISTRY SELECTIVE

- CHM 37200 - Physical Chemistry or
- CHM 37300 - Physical Chemistry and
- CHM 37400 - Physical Chemistry

For the Biochemistry Honors Major, you must complete either CHM 32100 or both of CHM 37300-37400 when completing the requirements above.

Physics Selectives

- PHYS 17200 - Modern Mechanics
- PHYS 27200 - Electric And Magnetic Interactions or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

Calculus Selectives

- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16200 - Plane Analytic Geometry And Calculus II
or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16600 - Analytic Geometry And Calculus II

Additional Other Requirements

- COM 21700 - Science Writing And Presentation (satisfies Oral Communication for core)
- STAT 50300 - Statistical Methods For Biology
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

Selective lists (see links in Science Core at the top of the page)

- Computer Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00 - 4.00
- Culture & Diversity 1 Selective - Credit Hours: 3.00
- Culture & Diversity 2 Selective - Credit Hours: 3.00
- Culture & Diversity 3 Selective - Credit Hours: 3.00
- General Education 1 Selective (*may satisfy UC Core Human Culture Behavioral/Social Science*) - Credit Hours: 3.00
- General Education 2 Selective (*may satisfy UC Core Human Cultures Humanities*) - Credit Hours: 3.00
- General Education 3 Selective - Credit Hours: 3.00
- Great Issues in Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00-3.00

Electives (1-10 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- CHM 12901 - General Chemistry With A Biological Focus
- IT 22600 - Biotechnology Laboratory I

- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments - Disease Ecology or
- Phages to Folds

- Calculus I Selective - Credit Hours: 4.00 - 5.00
- Language and Culture 1 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (BIOL 11500 recommended)

17-18 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

- Organic Chem 1 Selective - Credit Hours: 4.00

- Calculus II Selective - Credit Hours: 4.00 - 5.00
- Language and Culture 2 Selective - Credit Hours: 3.00

17-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- COM 21700 - Science Writing And Presentation
- Organic Chem 2 Selective - Credit Hours: 4.00
- Language and Culture 3 Selective - Credit Hours: 3.00

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- PHYS 17200 - Modern Mechanics
- General Education 1 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (BIOL 29300 recommended)

15 Credits

Fall 3rd Year

- BCHM 56100 - General Biochemistry I
- BIOL 39500 - Special Assignments - Macromolecules
- Computer Science Selective - Credit Hours: 3.00 - 4.00
- General Education 2 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

- BIOL 41500 - Introduction To Molecular Biology
- BCHM 56200 - General Biochemistry II
- CHM 33901 - Biochemistry Laboratory
- PHYS 27200 - Electric And Magnetic Interactions
- General Education 3 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (BIOL 39300 recommended)

15 Credits

Fall 4th Year

- BIOL 42000 - Eukaryotic Cell Biology
- BIOL 59500 - Special Assignments - Methods & Measurement in Biophysical Chemistry
- Analytical Chemistry Selective - Credit Hours: 3.00 - 4.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00 - 3.00
- Biology Selective - Credit Hours: 2.00 - 3.00

12-16 Credits

Spring 4th Year

- STAT 50300 - Statistical Methods For Biology
- Physical Chemistry Selective - Credit Hours: 4.00
- Great Issues in Science Selective - Credit Hours: 3.00
- Base Lab Requirement- Credit Hours: 2.00 - 4.00
- Elective - Credit Hours: 2.00

14-16 Credits

Notes

3.0 Graduation GPA required for Biochemistry Honors major.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Biology, BS

About the Program

The Biology major allows a student to pursue a general curriculum with the bachelor of science as a terminal degree or as preparation for graduate work or professional school. This major is designed to give a student maximum flexibility in designing a plan of study suited to individual needs and interests. This curriculum is excellent preparation for a number of careers in both academic and industrial research and professions in medicine, dentistry, and veterinary medicine.

Biology Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing

- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (34-35 credits)

A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab

Required Major Courses

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (satisfies Science, Technology & Society Selective for core) [May also meet Multidisciplinary Experience requirement for Science core]

BIOLOGY CORE

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- IT 22600 - Biotechnology Laboratory I
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments - Disease Ecology or
- Phages to Folds

REQUIRED UPPER LEVEL BIOLOGY COURSEWORK

- CHM 33901 - Biochemistry Laboratory

More Biology upper-level biology requirements are in the next section.

Must have 12 credits of electives from the Biology Selectives and the Base Lab requirements.

Base Lab may overlap with Groups A and/or B, but must still have 12 credits of selectives total.

These 12 credits may not overlap with the Biology Intermediate requirement.

These 12 credits may not overlap with the Chemistry Selective requirement.

These 12 credits may also include:

1. *Research (BIOL 49400 or 49900), maximum 3 credits*

2. *BIOL 36701 Principles of Development Lab*
3. *BIOL 44100 Senior Seminar in Genetics*
4. *BIOL 44201 Introductory Module: Protein Expression (credit not allowed for both BIOL 44201 and CHM 33901)*
5. *BIOL 59500 Laboratory in Ecology*

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Click Intermediate Selectives for all Biology majors for additional lists.

Click Biology Selectives List for Biology for additional lists.

Click Base Lab Requirements for all Biology majors for additional lists.

Other Departmental Requirements: (63-79 credits)

Chemistry Selectives

- CHM 12901 - General Chemistry With A Biological Focus

ORGANIC CHEMISTRY SELECTIVES

- CHM 25500 - Organic Chemistry and
- CHM 25501 - Organic Chemistry Laboratory and
- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory
- or
- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

CHEMISTRY SELECTIVE - choose one course:

- BCHM 22100 - Analytical Biochemistry
- CHM 32100 - Analytical Chemistry I
- BCHM 56100 - General Biochemistry I
- CHM 33900 - Biochemistry: A Molecular Approach
- CHM 53300 - Introductory Biochemistry
- CHM 37200 - Physical Chemistry
- CHM 37300 - Physical Chemistry

Students who take CHM 12901 for General Chemistry must complete both CHM 33900 and 33901.

Physics Selectives

Select one of these two options:

- PHYS 23300 - Physics For Life Sciences I and
- PHYS 23400 - Physics For Life Sciences II
- or
- PHYS 17200 - Modern Mechanics and
(one of the following two choices:)

- PHYS 27200 - Electric And Magnetic Interactions or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

Calculus Selectives

- MA 16010 - Applied Calculus I
- MA 16020 - Applied Calculus II or
- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16600 - Analytic Geometry And Calculus II or
- MA 17300 - Calculus And Analytic Geometry II

Additional Other Requirements

- COM 21700 - Science Writing And Presentation - (*satisfies Oral Communications for core*)
- STAT 50300 - Statistical Methods For Biology
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

Selective lists (see links in Science Core at the top of the page)

- Computer Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00 - 4.00
- Culture & Diversity 1 Selective - Credit Hours: 3.00
- Culture & Diversity 2 Selective - Credit Hours: 3.00
- Culture & Diversity 3 Selective - Credit Hours: 3.00
- General Education 1 Selective (*may satisfy UC Core Human Culture Behavioral/Social Science*) - Credit Hours: 3.00
- General Education 2 Selective (*may satisfy UC Core Human Cultures Humanities*) - Credit Hours: 3.00
- General Education 3 Selective - Credit Hours: 3.00
- Great Issues in Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00-3.00

Electives (6-23 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1

- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- CHM 12901 - General Chemistry With A Biological Focus
- IT 22600 - Biotechnology Laboratory I
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments - Disease Ecology or
- Phages to Folds
- Calculus I Selective - Credit Hours: 3.00 - 5.00
- Language and Culture 1 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (BIOL 11500 recommended)

16-18 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Organic Chem 1 Selective - Credit Hours: 4.00
- Calculus II Selective - Credit Hours: 3.00 - 5.00
- Language and Culture 2 Selective - Credit Hours: 3.00

16-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
Organic Chem 2 Selective - Credit Hours: 4.00
Language and Culture 3 Selective - Credit Hours: 3.00
- COM 21700 - Science Writing And Presentation

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- Chemistry Selective - Credit Hours: 2.00 - 3.00
- General Education 1 Selective - Credit Hours: 3.00
- CHM 33901 - Biochemistry Laboratory
- Chemistry Selective - Credit Hours: 2.00 - 3.00
- General Education 1 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (BIOL 29300 recommended)

14-15 Credits

Fall 3rd Year

Intermediate Biology Selective - Credit Hours: 3.00

Group A Selective - Credit Hours: 2.00 - 3.00

PHYS 1 Selective - Credit Hours: 4.00

General Education 2 Selective - Credit Hours: 3.00

Elective - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

Group B Selective - Credit Hours: 3.00

Computer Science Selective - Credit Hours: 3.00 - 4.00

PHYS 2 Selective - Credit Hours: 4.00

General Education 3 Selective - Credit Hours: 3.00

- BIOL 39300 - Preparing For Your Future In Biology (Recommended Elective)

14-15 Credits

Fall 4th Year

- Base Lab Requirement - Credit Hours: 2.00 - 4.00
- STAT 50300 - Statistical Methods For Biology
 - Multidisciplinary Experience Selective - Credit Hours: 1.00 - 3.00
 - Elective - Credit Hours: 3.00
 - Elective - Credit Hours: 5.00

14-18 Credits

Spring 4th Year

Biology Selective 500 Level - Credit Hours: 3.00

Biology Selective - Credit Hours: 3.00

Great Issues in Science Selective - Credit Hours: 3.00

Elective - Credit Hours: 4.00

Elective - Credit Hours: 3.00

16 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Cell, Molecular, and Developmental Biology, BS

About the Program

Understanding how eukaryotic cells process information from their environment and initiate programs of gene expression leading to growth, development, and functional specification is the essence of a cell, molecular, and developmental (CMD) biology major. Students enrolled in this curriculum will take courses providing a solid foundation in the molecular biology of cells and gain a full appreciation of how molecular complexes interact to make a cell function. This fundamental knowledge in cell and molecular biology will be applied through further coursework in genetics and developmental biology to examine how eukaryotic organisms function and how specific aspects of that function are perturbed by disease. Within the CMD major, students have the option of focusing their studies on animal systems, plant systems, or both. Graduates with a CMD major are well-prepared to pursue careers in academic or industrial research, biotechnology, genetic engineering, medicine, veterinary medicine, and other health-related professions.

Cell, Molecular, and Developmental Biology Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education

- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click [here](#).

Departmental/Program Major Courses (39-41 credits)

A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab.

Required Major Courses

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (*satisfies UC Core Science, Technology & Society Selective*)

BIOLOGY CORE

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- CHM 33901 - Biochemistry Laboratory
- IT 22600 - Biotechnology Laboratory I
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments - Disease Ecology or
- Phages to Folds

REQUIRED UPPER LEVEL BIOLOGY COURSEWORK

- BIOL 41500 - Introduction To Molecular Biology or
- BIOL 42000 - Eukaryotic Cell Biology or
- BIOL 48100 - Eukaryotic Genetics or
- BIOL 36700 - Principles Of Development and
- BIOL 36701 - Principles Of Development Lab

CMDB Selective II: Choose two. May not overlap with Biology Selectives.

- BIOL 51600 - Molecular Biology Of Cancer
- BIOL 55001 - Eukaryotic Molecular Biology

- BIOL 59500 - Special Assignments
 - Cellular Biology of Plants
 - Epigenetics in Human Disease
 - Genetics and -Omics of Host-Microbe Interaction
 - Theory of Molecular Methods
- CHM 33900 - Biochemistry: A Molecular Approach or
- BCHM 56100 - General Biochemistry I or
- CHM 53300 - Introductory Biochemistry

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Click Intermediate Selectives for all Biology majors for additional lists.

Click Biology Selectives List for Cell, Molecular and Developmental Biology for additional lists.

Click Base Lab Requirements for all Biology majors for additional lists.

Other Departmental Requirements: (61-69 credits)

Chemistry

- CHM 12901 - General Chemistry With A Biological Focus

ORGANIC CHEMISTRY SELECTIVES

- CHM 25500 - Organic Chemistry and
- CHM 25501 - Organic Chemistry Laboratory and
- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory
or
- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

Physics

- PHYS 23300 - Physics For Life Sciences I and
- PHYS 23400 - Physics For Life Sciences II
or
- PHYS 17200 - Modern Mechanics and
- PHYS 27200 - Electric And Magnetic Interactions
or
- PHYS 24100 - Electricity And Optics
and
- PHYS 25200 - Electricity And Optics Laboratory

Calculus

- MA 16010 - Applied Calculus I
- MA 16020 - Applied Calculus II or
- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16600 - Analytic Geometry And Calculus II or
- MA 17300 - Calculus And Analytic Geometry II

Additional Other Requirements

- COM 21700 - Science Writing And Presentation (*satisfies Oral Communications for core*)
- STAT 50300 - Statistical Methods For Biology
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Computer Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00 - 4.00
- Culture & Diversity 1 Selective - Credit Hours: 3.00
- Culture & Diversity 2 Selective - Credit Hours: 3.00
- Culture & Diversity 3 Selective - Credit Hours: 3.00
- General Education 1 Selective (*may satisfy UC Core Human Culture Behavioral/Social Science*) - Credit Hours: 3.00
- General Education 2 Selective (*may satisfy UC Core Human Cultures Humanities*) - Credit Hours: 3.00
- General Education 3 Selective - Credit Hours: 3.00
- Great Issues in Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00-3.00

Electives (10-20 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, [click here](#).

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments - Disease Ecology or
- Phages to Folds
- IT 22600 - Biotechnology Laboratory I

- CHM 12901 - General Chemistry With A Biological Focus
Calculus I Selective - Credit Hours: 3.00 - 5.00
Language and Culture 1 Selective - Credit Hours: 3.00
- BIOL 11500 - Biology Resource Seminar (Recommended Elective)

16-18 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
Organic Chem 1 Selective - Credit Hours: 4.00
Calculus II Selective - Credit Hours: 3.00 - 5.00
Language and Culture 2 Selective - Credit Hours: 3.00
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

16-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
Organic Chem 2 Selective - Credit Hours: 4.00
Language and Culture 3 Selective - Credit Hours: 3.00
- COM 21700 - Science Writing And Presentation

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
Chemistry Selective - Credit Hours: 2.00 - 3.00
General Education 1 Selective - Credit Hours: 3.00
- CHM 33901 - Biochemistry Laboratory
- BIOL 29300 - Sophomore Seminar: Planning Your Future In Biology (Recommended Elective)

14-15 Credits

Fall 3rd Year

Intermediate Requirement Selective - Credit Hours: 3.00

PHYS 1 Selective - Credit Hours: 4.00

General Education 2 Selective - Credit Hours: 3.00

Elective - Credit Hours: 3.00

Elective - Credit Hours: 3.00

16 Credits

Spring 3rd Year

Cell/Molecular/Developmental Selective I - Credit Hours: 3.00

PHYS 2 Selective - Credit Hours: 4.00

Computer Science Selective - Credit Hours: 3.00 - 4.00

General Education 3 Selective - Credit Hours: 3.00

Elective - Credit Hours: 2.00

- BIOL 39300 - Preparing For Your Future In Biology (Recommended Elective)

15-16 Credits

Fall 4th Year

Cell/Molecular/Developmental Selective I - Credit Hours: 3.00

Base Lab Requirement - Credit Hours: 2.00 - 4.00

- STAT 50300 - Statistical Methods For Biology
Multidisciplinary Selective - Credit Hours: 1.00 - 3.00
Elective - Credit Hours: 3.00

12-16 Credits

Spring 4th Year

BIOL Selective - Credit Hours: 3.00

Cell/Molecular/Development Selective II - Credit Hours: 3.00

Great Issues Selective - Credit Hours: 3.00

Elective - Credit Hours: 4.00

Elective - Credit Hours: 3.00

16 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Ecology, Evolution, and Environmental Biology, BS

About the Program

This major investigates how organisms interact with their physical environment and other organisms, from an evolutionary perspective. Ecologists' work includes research and/or teaching involving population genetics and evolution, adaptive strategies for survival, the nature of populations, and community ecology. Ecologists also offer technical services in connection with environmental impact decisions and regional planning, and environmental education at various levels as teacher, naturalist, or journalist. Common career paths for undergraduate students include graduate study leading to academic positions (research and teaching in small colleges and major universities), technical positions in industry (mostly dealing with environmental assessment), and employment in state and federal environmental agencies.

Ecology, Evolution, and Environmental Sciences Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click [here](#).

Departmental/Program Major Courses (34-41 credits)

*A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab.

Required Major Courses

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (*satisfies UC Core Science, Technology & Society Selective*)
BIOLOGY CORE
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments BIOL 19500 - Year 1 Bio Lab: Disease Ecology or BIOL 19500 - Year 1 Bio Lab: Phages to Folds or
- IT 22600 - Biotechnology Laboratory I
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
REQUIRED UPPER LEVEL BIOLOGY COURSEWORK
- CHM 33901 - Biochemistry Laboratory
- BIOL 58000 - Evolution
- BIOL 59500 - Special Assignments
- BIOL 59500 Ecology
- BIOL 59500 Lab in Ecology

Ecology Selective

Select one: May not overlap with Biology Selective

- BIOL 58210 - Ecological Statistics
- BIOL 58705 - Animal Communication
- BIOL 59100 - Field Ecology
- BIOL 59200 - The Evolution Of Behavior
- BIOL 59500 - Special Assignments BIOL 59500 - Disease Ecology BIOL 59500 - Sensory Ecology

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Click Intermediate Selectives for all Biology majors for additional course listings.

Click Biology Selectives List for Ecology, Evolution and Environmental Biology for additional course listings.

Click Base Lab Requirements for all Biology majors for additional course listings.

Other Departmental /Program Course Requirements (64-76 credits)

Chemistry

- CHM 12901 - General Chemistry With A Biological Focus

ORGANIC CHEMISTRY SELECTIVES

- CHM 25500 - Organic Chemistry and
- CHM 25501 - Organic Chemistry Laboratory and
- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory

or

- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

Chemistry Selective

Select one of the following options:

- BCHM 22100 - Analytical Biochemistry
- BCHM 56100 - General Biochemistry I
- CHM 32100 - Analytical Chemistry I
- CHM 33900 - Biochemistry: A Molecular Approach
- CHM 37200 - Physical Chemistry
- CHM 37300 - Physical Chemistry
- CHM 53300 - Introductory Biochemistry

Students who take CHM 12901 for General Chemistry must complete both CHM 33900 and 33901.

Physics

Select one of these two options:

- PHYS 23300 - Physics For Life Sciences I and
- PHYS 23400 - Physics For Life Sciences II or

- PHYS 17200 - Modern Mechanics and (one of the following two choices)
- PHYS 27200 - Electric And Magnetic Interactions

or

- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

Calculus

- MA 16010 - Applied Calculus I
- MA 16020 - Applied Calculus II or
- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16600 - Analytic Geometry And Calculus II or
- MA 17300 - Calculus And Analytic Geometry II

Additional Other Requirements

- STAT 50300 - Statistical Methods For Biology
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- COM 21700 - Science Writing And Presentation (*satisfies Oral Communications for core*)
- Computer Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00 - 4.00
- Culture & Diversity 1 Selective - Credit Hours: 3.00
- Culture & Diversity 2 Selective - Credit Hours: 3.00
- Culture & Diversity 3 Selective - Credit Hours: 3.00
- General Education 1 Selective (*may satisfy UC Core Human Culture Behavioral/Social Science*) - Credit Hours: 3.00
- General Education 2 Selective (*may satisfy UC Core Human Cultures Humanities*) - Credit Hours: 3.00
- General Education 3 Selective - Credit Hours: 3.00
- Great Issues in Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00-3.00

Electives (3-22 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication

- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project BIOL 19500 Year 1 Bio Lab: Disease Ecology - Credit Hours 2.00 or BIOL 19500: Year 1 Bio Lab: Phages to Folds - Credit Hours 2.00 or
- BIOL 19500 - Special Assignments or
- IT 22600 - Biotechnology Laboratory I
- CHM 12901 - General Chemistry With A Biological Focus
Calculus I Selective - Credit Hours: 3.00 - 5.00
Language/Culture 1 Selective - Credit Hours: 3.00
- BIOL 11500 - Biology Resource Seminar

16-18 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
Organic Chem 1 Selective - Credit Hours: 4.00
Calculus II Selective - Credit Hours: 3.00 - 5.00
Language/Culture 2 Selective - Credit Hours: 3.00
- ENGL 10600 - First-Year Composition
or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

16-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function

Organic Chem 2 Selective - Credit Hours: 4.00
Language/Culture 3 Selective - Credit Hours: 3.00

- COM 21700 - Science Writing And Presentation

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
Chemistry Selective - Credit Hours: 2.00 - 3.00
General Education 1 Selective - Credit Hours: 3.00
- CHM 33901 - Biochemistry Laboratory
- BIOL 29300 - Sophomore Seminar: Planning Your Future In Biology recommended elective

14-15 Credits

Fall 3rd Year

- BIOL 59500 - Special Assignments BIOL 59500 - Ecology 3.00 Credits BIOL 59500 - Laboratory in Ecology 1.00 Credit
- STAT 50300 - Statistical Methods For Biology
PHYS 1 Selective - Credit Hours: 4.00
General Education 2 Selective - Credit Hours: 3.00
Elective - Credit Hours: 3.00

17 Credits

Spring 3rd Year

- Ecology Selective - Credit Hours: 3.00 - 4.00
- PHYS 2 Selective - Credit Hours: 4.00
- Computer Science Selective - Credit Hours: 3.00 - 4.00
- General Education 3 Selective - Credit Hours: 3.00
- BIOL 39300 - Preparing For Your Future In Biology (Recommended Elective)

14-16 Credits

Fall 4th Year

Intermediate Biology Selective - Credit Hours: 3.00 - 4.00

Base Lab Requirement - Credit Hours: 2.00 - 4.00

Biology Selective - Credit Hours: 2.00 - 4.00

Multidisciplinary Selective - Credit Hours: 1.00 - 3.00

Elective - Credit Hours: 3.00

Elective - Credit Hours: 3.00

14-21 Credits

Spring 4th Year

- BIOL 58000 - Evolution
Great Issues Selective - Credit Hours: 3.00
Elective - Credit Hours: 3.00
Elective - Credit Hours: 3.00
Elective - Credit Hours: 2.00

14 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Genetics, BS

About the Program

Genetics is the science of information transfer from one generation to another. We learn the laws of inheritance in all creatures big and small, how they evolve and how they change. On the molecular level we learn about DNA and RNA, on the cellular level we discover what makes a cell cancerous, and on an organismal level we examine the reproductive habits of various organisms. Crucial principles include the structure, function, and transmission of genes. Laboratory techniques explore genetic engineering from the "inside." Genetics is crucial to all of biology, hence a genetics major has great flexibility. This is excellent preparation for advanced study in biological sciences, law, genetic counseling, and many health-related professions.

Genetic Biology Website

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Degree Requirements

120 Credits Required

Departmental/Program Major Courses (37-40 credits)

A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab.

Required Major Courses

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (satisfies Science, Technology & Society Selective for core)
BIOLOGY CORE
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms

- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments BIOL 19500 - Year 1 Bio Lab: Disease Ecology or BIOL 19500 - Year 1 Bio Lab: Phages to Folds or
- IT 22600 - Biotechnology Laboratory I

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
REQUIRED UPPER LEVEL BIOLOGY COURSEWORK
- CHM 33901 - Biochemistry Laboratory
- BIOL 44100 - Biology Senior Seminar In Genetics
- BIOL 48100 - Eukaryotic Genetics

Choose one of these options:

- CHM 33900 - Biochemistry: A Molecular Approach
- BCHM 56100 - General Biochemistry I
- CHM 53300 - Introductory Biochemistry

Students who take CHM 12901 for General Chemistry must complete both CHM 33900 and 33901.

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Click Intermediate Selectives for all Biology majors for additional lists.

Click Biology Supplemental Selectives for Genetics for additional lists.

Click Base Lab Requirements for all Biology majors for additional lists.

Other Departmental Requirements: (61-69 credits)

Chemistry

- CHM 12901 - General Chemistry With A Biological Focus

ORGANIC CHEMISTRY SELECTIVES

- CHM 25500 - Organic Chemistry and
- CHM 25501 - Organic Chemistry Laboratory and
- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory

or

- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

Physics

Select one of these two options:

- PHYS 23300 - Physics For Life Sciences I and
- PHYS 23400 - Physics For Life Sciences II

or

- PHYS 17200 - Modern Mechanics and (one of the following two choices)
 - PHYS 27200 - Electric And Magnetic Interactions
- or
- PHYS 24100 - Electricity And Optics and
 - PHYS 24200 - Introduction To Heat And Thermal Physics

Calculus

- MA 16010 - Applied Calculus I
- MA 16020 - Applied Calculus II or
- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16600 - Analytic Geometry And Calculus II or

- MA 17300 - Calculus And Analytic Geometry II

Additional Other Requirements

- STAT 50300 - Statistical Methods For Biology
- ENGL 10600 - First-Year Composition
or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- COM 21700 - Science Writing And Presentation (*satisfies Oral Communications for core*)
Selective lists (see links in Science Core at the top of the page)
- Computer Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00 - 4.00
- Culture & Diversity 1 Selective - Credit Hours: 3.00
- Culture & Diversity 2 Selective - Credit Hours: 3.00
- Culture & Diversity 3 Selective - Credit Hours: 3.00
- General Education 1 Selective (*may satisfy UC Core Human Culture Behavioral/Social Science*) - Credit Hours: 3.00
- General Education 2 Selective (*may satisfy UC Core Human Cultures Humanities*) - Credit Hours: 3.00
- General Education 3 Selective - Credit Hours: 3.00
- Great Issues in Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00-3.00

Electives (11-22 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments - 1st Year Bio Lab: Disease Ecology
- IT 22600 - Biotechnology Laboratory I
- CHM 12901 - General Chemistry With A Biological Focus
- Calculus I Selective - Credit Hours: 3.00 - 5.00
- Language/Culture 1 Selective - Credit Hours: 3.00
- BIOL 11500 - Biology Resource Seminar - (recommended elective) - Credit Hours: 1.00

16-18 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- Organic Chem 1 Selective - Credit Hours: 4.00
- Calculus II Selective - Credit Hours: 3.00 - 5.00
- Language/Culture 2 Selective - Credit Hours: 3.00

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

16-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- Organic Chem 2 Selective - Credit Hours: 4.00
- Language/Culture 3 Selective - Credit Hours: 3.00
- COM 21700 - Science Writing And Presentation

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- Chemistry Selective - Credit Hours: 2.00 - 3.00
- BIOL 28600 - Introduction To Ecology And Evolution
- General Education 1 Selective - Credit Hours: 3.00
- CHM 33901 - Biochemistry Laboratory

- BIOL 29300 - Sophomore Seminar: Planning Your Future In Biology - (recommended elective). Credit Hours: 1.00

14-15 Credits

Fall 3rd Year

- Biology Selective (Req # 14) - Credit Hours: 3.00
- PHYS 1 Selective - Credit Hours: 4.00
- General Education 2 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16 Credits

Spring 3rd Year

- BIOL 48100 - Eukaryotic Genetics
- PHYS 2 Selective - Credit Hours: 4.00
- Computer Science Selective - Credit Hours: 3.00 - 4.00
- General Education 3 Selective - Credit Hours: 3.00
- BIOL 39300 - Preparing For Your Future In Biology - (recommended elective) Credit Hours: 1.00

14-15 Credits

Fall 4th Year

- Intermediate Biology Selective (Req #9) - Credit Hours: 3.00
- BIOL 44100 - Biology Senior Seminar In Genetics
- Multidisciplinary Selective - Credit Hours: 1.00 - 3.00
- STAT 50300 - Statistical Methods For Biology
- Elective - Credit Hours: 4.00
- Elective - Credit Hours: 3.00

15-17 Credits

Spring 4th Year

- Biology Selective 500 Level (Req # 14) - Credit Hours: 3.00
- Base Lab Requirement (Req #13) - Credit Hours: 2.00 - 4.00
- Great Issues Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

14-16 Credits

Notes

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Health and Disease, BS

About the Program

Health and disease is a biology program of study with an emphasis on disease-related upper-level biology courses and general education electives that relate to health. The major provides a rigorous curriculum for students interested in health careers, thus giving the student many career options after graduation.

Health and Disease Website

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click [here](#).

Degree Requirements

120 Credits Required

Departmental/Program Major Courses (39 credits)

A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab.

Required Major Courses

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (*satisfies UC Core Science, Technology & Society Selective*)
BIOLOGY CORE
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms

- BIOL 13500 - First year Biology Laboratory or
 - BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
 - BIOL 19500 - Special Assignments
 - BIOL 19500 Year 1 Bio Lab: Disease Ecology or
 - BIOL 19500: Year 1 Bio Lab: Phages to Folds or
 - IT 22600 - Biotechnology Laboratory I

 - BIOL 23100 - Biology III: Cell Structure And Function
 - BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
 - BIOL 24100 - Biology IV: Genetics And Molecular Biology
 - BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
 - BIOL 28600 - Introduction To Ecology And Evolution
- REQUIRED UPPER LEVEL BIOLOGY COURSEWORK**
- CHM 33901 - Biochemistry Laboratory
 - BIOL 30100 - Human Design: Anatomy And Physiology
 - BIOL 30200 - Human Design: Anatomy And Physiology
 - BIOL 43800 - General Microbiology
 - (BIOL 43800 overlaps with Intermediate requirement)
 - BIOL 43900 - Laboratory In General Microbiology
 - (BIOL 43900 overlaps with Base Lab requirement)
- Health & Disease Selective; Choose one. May not overlap with Biology Selectives.
- BIOL 41600 - Viruses And Viral Disease
 - BIOL 53700 - Immunobiology
 - BIOL 55900 - Endocrinology

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Click Intermediate Selectives for all Biology majors for additional lists.

Click Biology Selectives List for Health and Disease for additional lists.

Click Base Lab Requirements for all Biology majors for additional lists.

Other Departmental Requirements: (67-76 credits)

Chemistry

- CHM 12901 - General Chemistry With A Biological Focus

ORGANIC CHEMISTRY SELECTIVES

- CHM 25500 - Organic Chemistry and
- CHM 25501 - Organic Chemistry Laboratory and
- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory

or

- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

Chemistry Selective

Select one of the following options:

- BCHM 22100 - Analytical Biochemistry
- BCHM 56100 - General Biochemistry I
- CHM 32100 - Analytical Chemistry I
- CHM 33900 - Biochemistry: A Molecular Approach
- CHM 37200 - Physical Chemistry
- CHM 37300 - Physical Chemistry
- CHM 53300 - Introductory Biochemistry

Students who take CHM 12901 for General Chemistry must complete both CHM 33900 and 33901.

Physics

Select one of these two options:

- PHYS 23300 - Physics For Life Sciences I and
- PHYS 23400 - Physics For Life Sciences II

or

- PHYS 17200 - Modern Mechanics and
 - PHYS 27200 - Electric And Magnetic Interactions
- or
- PHYS 24100 - Electricity And Optics and
 - PHYS 25200 - Electricity And Optics Laboratory

Calculus

- MA 16010 - Applied Calculus I
- MA 16020 - Applied Calculus II or
- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16600 - Analytic Geometry And Calculus II or
- MA 17300 - Calculus And Analytic Geometry II

Additional Other Requirements

Electives (5-14 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 First Year Lab: Disease Ecology
or
- IT 22600 - Biotechnology Laboratory I
- CHM 12901 - General Chemistry With A Biological Focus
- Calculus I Selective - Credit Hours: 3.00 - 5.00
- Language/Culture 1 Selective - Credit Hours: 3.00
- BIOL 11500 (1 cr.) is a recommended elective

16-18 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- Organic Chem 1 Selective - Credit Hours: 4.00
- Calculus II Selective - Credit Hours: 3.00 - 5.00
- Language/Culture 2 Selective - Credit Hours: 3.00

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition

16-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- Organic Chem 2 Selective - Credit Hours: 4.00
- Language/Culture 3 Selective - Credit Hours: 3.00
- COM 21700 - Science Writing And Presentation

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- Chemistry Selective - Credit Hours: 2.00 - 3.00
- General Education 1 Selective - Credit Hours: 3.00
- BIOL 29300 (1 cr.) is a recommended elective.
- CHM 33901 - Biochemistry Laboratory
- BIOL 28600 - Introduction To Ecology And Evolution

14-15 Credits

Fall 3rd Year

- BIOL 30100 - Human Design: Anatomy And Physiology
Biology Selective (Req # 14) - Credit Hours: 2.00 - 3.00
PHYS 1 Selective - Credit Hours: 4.00
General Education 2 Selective - Credit Hours: 3.00
Elective - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

- BIOL 30200 - Human Design: Anatomy And Physiology
- PHYS 2 Selective - Credit Hours: 4.00
- Computer Science Selective - Credit Hours: 3.00 - 4.00
- General Education 3 Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- BIOL 39300 is a recommended elective

17-18 Credits

Fall 4th Year

- BIOL 43800 - General Microbiology
- BIOL 43900 - Laboratory In General Microbiology
- STAT 50300 - Statistical Methods For Biology
- Multidisciplinary Selective - Credit Hours: 1.00 - 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 - 17 Credits

Spring 4th Year

- Biology Selective 500 Level (Req # 14) - Credit Hours: 2.00 - 3.00
- Health & Disease Selective (Req # 13) - Credit Hours: 3.00
- Great Issues Selective - Credit Hours: 3.00
- Pre-professional Selective - Credit Hours: 3.00
- Elective - Credit Hours: 4.00

14-15 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Microbiology Honors, BS

About the Program

Microbiology includes the study of viruses, bacteria, and fungi. A student can expect to study topics such as microbial growth, nutrition, metabolism, pathogenesis, morphogenesis, and production of antibiotics. Career opportunities are found in public health, medical laboratories, quality assurance, environmental toxicology, and related areas. A microbiology major provides excellent preparation for advanced study (or direct employment) in biological sciences, education, and many health-related professions.

Microbiology Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation

- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (60-66 credits)

A 3.0 or higher graduation index is required to graduate in the Microbiology Honors Curriculum.

A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab.

Required Major Courses

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (satisfies Science, Technology & Society Selective for core)
- **BIOLOGY CORE**
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments BIOL 19500 Year 1 Bio Lab: Disease Ecology or BIOL 19500: Year 1 Bio Lab: Phages to Folds or
- IT 22600 - Biotechnology Laboratory I
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- **REQUIRED UPPER LEVEL BIOLOGY COURSEWORK**
- CHM 33901 - Biochemistry Laboratory
- BIOL 41600 - Viruses And Viral Disease
- BIOL 43800 - General Microbiology
- (BIOL 43800 overlaps with Intermediate requirement)
- BIOL 43900 - Laboratory In General Microbiology
- (BIOL 43900 overlaps with Base Lab requirement)

- BIOL 52900 - Bacterial Physiology

Microbiology Selective I May not overlap with Microbiology Selective II Choose one:

- BIOL 39500 - Special Assignments
- BIOL 39500 - Genes + Proteins = Big Data
- BIOL 44600 - Molecular Bacterial Pathogenesis
- BIOL 47800 - Introduction to Bioinformatics
- BIOL 53300 - Medical Microbiology
- BIOL 54100 - Molecular Genetics Of Bacteria
- or
- BIOL 54900 - Microbial Ecology
- BIOL 55001 - Eukaryotic Molecular Biology
- BIOL 59500 - Special Assignments
- BIOL 59500 - Genetics & -omics of Host-Microbe Interactions

Microbiology Selective II May not overlap with Microbiology Selective I Choose three credits:

- BIOL 59500 - Genetics & -omics of Host-Microbe Interactions
- BIOL 59500 - Theory of Molecular Methods
- ABE 59100 - Special Topics
- ABE 59100 - Principles of Synthetic & Systems Biology
- FS 59100 - Special Topics
- FS 59100 - Techniques in Microbial Genomics & Metabolism

Choose one of these options:

- CHM 33900 - Biochemistry: A Molecular Approach
- BCHM 56100 - General Biochemistry I
- CHM 53300 - Introductory Biochemistry

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Select Base Lab Requirements for all Biology majors for additional lists.

Select Intermediate Selectives for all Biology majors for additional lists.

Honors Curriculum

The following two choices must be completed

- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

- MA 26100 - Multivariate Calculus

at least two of the following four choices must be completed

- PHYS 17200 - Modern Mechanics and
- PHYS 27200 - Electric And Magnetic Interactions

- CHM 32100 - Analytical Chemistry I

- CHM 37200 - Physical Chemistry or
- CHM 37300 - Physical Chemistry and
- CHM 37400 - Physical Chemistry

- MA 26200 - Linear Algebra And Differential Equations

Other Departmental Requirements: (51-63 credits)

Chemistry Selectives

- CHM 12901 - General Chemistry With A Biological Focus

- CHM 26505 - Organic Chemistry and
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory

Physics Selectives

- PHYS 23300 - Physics For Life Sciences I (satisfies Science Selective for core) or
- PHYS 17200 - Modern Mechanics (satisfies Science Selective for core)
and
- PHYS 23400 - Physics For Life Sciences II or
- PHYS 27200 - Electric And Magnetic Interactions or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

Calculus Selectives

- MA 16100 - Plane Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core)
and
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II or
- MA 17300 - Calculus And Analytic Geometry II

Additional Other Requirements

- STAT 50300 - Statistical Methods For Biology

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy for core) or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)

- COM 21700 - Science Writing And Presentation (Satisfies Oral Communication for core)
- Computer Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00 - 4.00
- Culture & Diversity 1 Selective - Credit Hours: 3.00
- Culture & Diversity 2 Selective - Credit Hours: 3.00
- Culture & Diversity 3 Selective - Credit Hours: 3.00
- General Education 1 Selective (*may satisfy UC Core Human Culture Behavioral/Social Science*) - Credit Hours: 3.00
- General Education 2 Selective (*may satisfy UC Core Human Cultures Humanities*) - Credit Hours: 3.00
- General Education 3 Selective - Credit Hours: 3.00
- Great Issues in Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00-3.00

Electives (1-10 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 Year 1 Bio Lab: Disease Ecology - Credit Hours 2.00 or
- BIOL 19500: Year 1 Bio Lab: Phages to Folds - Credit Hours 2.00 or
- IT 22600 - Biotechnology Laboratory I
- CHM 12901 - General Chemistry With A Biological Focus
- Calculus I Selective - Credit Hours: 4.00 - 5.00

- Language/Culture I Selective - Credit Hours: 3.00

16 - 17 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- Computer Science Selective - Credit Hours: 3.00 - 4.00
- Calculus II Selective - Credit Hours: 4.00 - 5.00
- Language/Culture II Selective - Credit Hours: 3.00

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition

16-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 26505 - Organic Chemistry
- CHM 26300 - Organic Chemistry Laboratory
- MA 26100 - Multivariate Calculus
- Language/Culture III Selective - Credit Hours: 3.00

16 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- CHM 26605 - Organic Chemistry
- CHM 26400 - Organic Chemistry Laboratory
- BIOL 28600 - Introduction To Ecology And Evolution
- General Education I Selective - Credit Hours: 3.00

14 Credits

Fall 3rd Year

- BIOL 43800 - General Microbiology
- BIOL 43900 - Laboratory In General Microbiology
- PHYS I Selective - Credit Hours: 4.00
- General Education II Selective - Credit Hours: 3.00

- COM 21700 - Science Writing And Presentation

15 Credits

Spring 3rd Year

- CHM 33901 - Biochemistry Laboratory
- BIOL 41600 - Viruses And Viral Disease
- Chemistry Selective - Credit Hours: 2.00 - 3.00
- PHYS II Selective - Credit Hours: 4.00
- General Education III Selective - Credit Hours: 3.00

13 - 14 Credits

Fall 4th Year

- Microbiology Selective I - Credit Hours: 3.00
- Microbiology Honors Selective - Credit Hours: 4.00
- Microbiology Selective II - Credit Hours: 3.00
- Multidisciplinary Selective - Credit Hours: 1.00 - 3.00
- Elective - Credit Hours: 3.00

14-16 Credits

Spring 4th Year

- BIOL 52900 - Bacterial Physiology
- Microbiology Honors Selective - Credit Hours: 4.00
- Microbiology Selective II - Credit Hours: 3.00
- STAT 50300 - Statistical Methods For Biology
- Great Issues Selective - Credit Hours: 3.00

16 Credits

Notes

3.0 Graduation GPA required for Microbiology Honors major.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Microbiology, BS

About the Program

Microbiology includes the study of viruses, bacteria, and fungi. A student can expect to study topics such as microbial growth, nutrition, metabolism, pathogenesis, morphogenesis, and production of antibiotics. Career opportunities are found in public health, medical laboratories, quality assurance, environmental toxicology, and related areas. A microbiology major provides excellent preparation for advanced study (or direct employment) in biological sciences, education, and many health-related professions.

Microbiology Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (40 credits)

A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab.

Required Major Courses

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (satisfies Science, Technology & Society Selective for core)
BIOLOGY CORE
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments BIOL 19500 Year 1 Bio Lab: Disease Ecology or BIOL 19500: Year 1 Bio Lab: Phages to Folds or
- IT 22600 - Biotechnology Laboratory I
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- **REQUIRED UPPER LEVEL BIOLOGY COURSEWORK**
- CHM 33901 - Biochemistry Laboratory
- BIOL 41600 - Viruses And Viral Disease
- BIOL 43800 - General Microbiology
- (BIOL 43800 overlaps with Intermediate requirement)
- BIOL 43900 - Laboratory In General Microbiology
- (BIOL 43900 overlaps with Base Lab requirement)
- BIOL 52900 - Bacterial Physiology

Microbiology Selective I May not overlap with Microbiology Selective II Choose one:

- BIOL 39500 - Special Assignments
- BIOL 39500 - Genes + Proteins = Big Data
- BIOL 44600 - Molecular Bacterial Pathogenesis
- BIOL 47800 - Introduction to Bioinformatics
- BIOL 53300 - Medical Microbiology
- BIOL 54100 - Molecular Genetics Of Bacteria
- BIOL 54900 - Microbial Ecology
- BIOL 55001 - Eukaryotic Molecular Biology
- BIOL 59500 - Special Assignments
- BIOL 59500 - Genetics & -omics of Host-Microbe Interactions

Microbiology Selective II May not overlap with Microbiology Selective I Choose three credits:

- BIOL 59500 - Genetics & -omics of Host-Microbe Interactions
- ABE 59100 - Special Topics
- ABE 59100 - Principles of Synthetic & Systems Biology
- FS 59100 - Special Topics
- FS 59100 - Techniques in Microbial Genomics & Metabolism

Choose one:

- BCHM 56100 - General Biochemistry I
- CHM 33900 - Biochemistry: A Molecular Approach
- CHM 53300 - Introductory Biochemistry

Students who take CHM 12901 for General Chemistry must complete both CHM 33900 and 33901.

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Select Base Lab Requirements for all Biology majors for additional lists.

Select Intermediate Selectives for all Biology majors for additional lists.

Other Departmental Requirements: (59-64 credits)

Chemistry Selectives

- CHM 12901 - General Chemistry With A Biological Focus

ORGANIC CHEMISTRY SELECTIVES

- CHM 25500 - Organic Chemistry and
- CHM 25501 - Organic Chemistry Laboratory and
- CHM 25600 - Organic Chemistry and
- CHM 25601 - Organic Chemistry Laboratory
or
- CHM 26300 - Organic Chemistry Laboratory and
- CHM 26505 - Organic Chemistry and
- CHM 26400 - Organic Chemistry Laboratory and
- CHM 26605 - Organic Chemistry

Physics Selectives

- PHYS 23300 - Physics For Life Sciences I or (satisfies Science Selective for core)
- PHYS 17200 - Modern Mechanics (satisfies Science Selective for core)
and
- PHYS 23400 - Physics For Life Sciences II or
- PHYS 27200 - Electric And Magnetic Interactions or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

Calculus Selectives

- MA 16010 - Applied Calculus I and (satisfies Quantative Reasoning for core)
- MA 16020 - Applied Calculus II
or
- MA 16100 - Plane Analytic Geometry And Calculus I and (satisfies Quantative Reasoning for core)
- MA 16200 - Plane Analytic Geometry And Calculus II
or
- MA 16500 - Analytic Geometry And Calculus I and (satisfies Quantative Reasoning for core)
- MA 16600 - Analytic Geometry And Calculus II
or
- MA 17300 - Calculus And Analytic Geometry II

Additional Other Requirements

- STAT 50300 - Statistical Methods For Biology
- ENGL 10600 - First-Year Composition or (satisfies Written Communication and Information Literacy for core)
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or (satisfies Written Communication and Information Literacy for core)
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- COM 21700 - Science Writing And Presentation (satisfies Oral Communication for core)

- Computer Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00 - 4.00
- Culture & Diversity 1 Selective - Credit Hours: 3.00
- Culture & Diversity 2 Selective - Credit Hours: 3.00
- Culture & Diversity 3 Selective - Credit Hours: 3.00
- General Education 1 Selective (*may satisfy UC Core Human Culture Behavioral/Social Science*) - Credit Hours: 3.00
- General Education 2 Selective (*may satisfy UC Core Human Cultures Humanities*) - Credit Hours: 3.00
- General Education 3 Selective - Credit Hours: 3.00
- Great Issues in Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00-3.00

Electives (8-21 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 1st Year Bio Lab: Disease Ecology
or
- IT 22600 - Biotechnology Laboratory I
- CHM 12901 - General Chemistry With A Biological Focus
- Calculus I Selective - Credit Hours: 3.00 - 5.00
- Language/Culture I Selective - Credit Hours: 3.00
- BIOL 11500, Biology Resource Seminar, (1 cr.) is a recommended elective.

16-18 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- Organic Chem I Selective - Credit Hours: 4.00
- Calculus II Selective - Credit Hours: 3.00 - 5.00
- Language/Culture II Selective - Credit Hours: 3.00

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition

16-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- Organic Chem II Selective - Credit Hours: 4.00
- Language/Culture III Selective - Credit Hours: 3.00
- COM 21700 - Science Writing And Presentation

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- Chemistry Selective - Credit Hours: 2.00 - 3.00
- CHM 33901 - Biochemistry Laboratory
- BIOL 28600 - Introduction To Ecology And Evolution
- General Education I Selective - Credit Hours: 3.00
- BIOL 29300, Planning for Your Future in Biology, (1 cr.) is a recommended elective.

14-15 Credits

Fall 3rd Year

- BIOL 43800 - General Microbiology
- BIOL 43900 - Laboratory In General Microbiology
- PHYS I Selective - Credit Hours: 4.00
- General Education II Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Spring 3rd Year

- BIOL 41600 - Viruses And Viral Disease
- PHYS II Selective - Credit Hours: 4.00
- BIOL 52900 - Bacterial Physiology
- General Education III Selective - Credit Hours: 3.00
- BIOL 39300, Preparing for Your Future in Biology, (1 cr.) is a recommended elective.

14 Credits

Fall 4th Year

- Microbiology Selective I (Req. #13) - Credit Hours 3.00
- Computer Science Selective - Credit Hours: 3.00 - 4.00
- Multidisciplinary Selective - Credit Hours: 1.00 - 3.00
- Elective - Credit Hours: 4.00
- Elective - Credit Hours: 4.00

15-18 Credits

Spring 4th Year

- STAT 50300 - Statistical Methods For Biology
- Microbiology Selective II (Req # 15) - Credit Hours: 3.00
- Great Issues Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Neurobiology and Physiology, BS

About the Program

Physiology is the study of the functions of living organisms and of the organ and tissue systems of which they are composed. The goal of physiology is to understand, in terms of physical and chemical principles, the mechanisms that operate in living organisms from the subcellular level to the level of the whole animal, with an emphasis on how these mechanisms are integrated to produce a viable organism.

Neurobiology is the study of the structure, function, and development of the nervous system, and originated, in part, as a subdiscipline of physiology. In recent years, neurobiology has become one of the most rapidly changing and exciting areas of biology. A neurobiology and physiology major is excellent preparation for careers in education, research, industry, medicine, veterinary medicine, and other professions.

Neurobiology and Physiology Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (40 credits)

A minimum 2.0 average in all biology courses is required for this major.

Each student must take at least one 500-level BIOL course other than BIOL 54200 or a 59500 lab.

Required Major Courses

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior (satisfies Science, Technology & Society Selective for core)
BIOLOGY CORE
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments BIOL 19500 Year 1 Bio Lab: Disease Ecology or BIOL 19500: Year 1 Bio Lab: Phages to Folds or
- IT 22600 - Biotechnology Laboratory I
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution

REQUIRED UPPER LEVEL BIOLOGY COURSEWORK

- CHM 33901 - Biochemistry Laboratory

Choose two of these seven options:

- BIOL 43200 - Reproductive Physiology
- BIOL 43600 - Neurobiology
- BIOL 53800 - Molecular, Cellular, And Developmental Neurobiology
- BIOL 55900 - Endocrinology
- BIOL 56200 - Neural Systems
- BIOL 59500 - Special Assignments

Choose one of these three options:

- BCHM 56100 - General Biochemistry I
 - BIOL 59500 - Neural Mechanisms in Health & Disease
 - BIOL 59500 - Neurobiology of Learning & Memory
- Courses chosen for this requirement may not overlap with the Biology Selective.*
- CHM 33900 - Biochemistry: A Molecular Approach
 - CHM 37200 - Physical Chemistry
 - CHM 37300 - Physical Chemistry
 - CHM 53300 - Introductory Biochemistry

Additional Biology Requirements: Intermediate, Base Lab, Biology Selective

Select Base Lab Requirements for all Biology majors for additional lists.

Select Intermediate Selectives for all Biology majors for additional lists.

Other Departmental Requirements: (59-64 credits)

Chemistry Selectives

- CHM 12901 - General Chemistry With A Biological Focus

ORGANIC CHEMISTRY SELECTIVES

- CHM 25500 - Organic Chemistry and
 - CHM 25501 - Organic Chemistry Laboratory and
 - CHM 25600 - Organic Chemistry and
 - CHM 25601 - Organic Chemistry Laboratory
- or
- CHM 26505 - Organic Chemistry and
 - CHM 26300 - Organic Chemistry Laboratory and
 - CHM 26605 - Organic Chemistry and
 - CHM 26400 - Organic Chemistry Laboratory

Physics Selectives

- PHYS 23300 - Physics For Life Sciences I (satisfies Science Selective for core) or
- PHYS 17200 - Modern Mechanics (satisfies Science Selective for core) and
- PHYS 23400 - Physics For Life Sciences II or
- PHYS 27200 - Electric And Magnetic Interactions

Calculus Selectives

- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16100 - Plane Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core)
and
- MA 16020 - Applied Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II or
- MA 17300 - Calculus And Analytic Geometry II

Additional Other Requirements

- STAT 50300 - Statistical Methods For Biology
- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy for core) or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- COM 21700 - Science Writing And Presentation (satisfies Oral Communication for core)
- Computer Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00 - 4.00
- Culture & Diversity 1 Selective - Credit Hours: 3.00
- Culture & Diversity 2 Selective - Credit Hours: 3.00
- Culture & Diversity 3 Selective - Credit Hours: 3.00
- General Education 1 Selective (*may satisfy UC Core Human Culture Behavioral/Social Science*) - Credit Hours: 3.00
- General Education 2 Selective (*may satisfy UC Core Human Cultures Humanities*) - Credit Hours: 3.00
- General Education 3 Selective - Credit Hours: 3.00
- Great Issues in Science Selective (*may also meet Teambuilding and Collaboration for Science core*) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 1.00-3.00

Electives (11-16 credits)

University Core Requirements

- Human Cultures Humanities

- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 Year 1 Bio Lab: Disease Ecology - Credit Hours 2.00 or
- BIOL 19500: Year 1 Bio Lab: Phages to Folds - Credit Hours 2.00 or
- IT 22600 - Biotechnology Laboratory I
- CHM 12901 - General Chemistry With A Biological Focus
- Calculus I Selective - Credit Hours: 3.00 - 5.00
- Language/Culture I Selective - Credit Hours: 3.00
- BIOL 11500, Biology Resource Seminar, (1 cr.) is a recommended elective.

16-18 Credits

Spring 1st Year

- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- Organic Chem I Selective - Credit Hours: 4.00
- Language/Culture II Selective - Credit Hours: 3.00
- Calculus II Selective - Credit Hours: 3.00 - 5.00
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

16-19 Credits

Fall 2nd Year

- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- Organic Chem II Selective - Credit Hours: 4.00
- Language/Culture III Selective - Credit Hours: 3.00
- COM 21700 - Science Writing And Presentation

15 Credits

Spring 2nd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- Chemistry Selective - Credit Hours: 2.00 - 3.00
- CHM 33901 - Biochemistry Laboratory
- BIOL 28600 - Introduction To Ecology And Evolution
- General Education I Selective - Credit Hours: 3.00
- BIOL 29300, Planning for Your Future in Biology, (1 cr.) is a recommended elective.

14-15 Credits

Fall 3rd Year

- Neurobiology & Physiology Selective - Credit Hours: 3.00
- PHYS I Selective - Credit Hours: 4.00
- General Education II Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16 Credits

Spring 3rd Year

- BIOL 32800 - Principles Of Physiology
- PHYS II Selective - Credit Hours: 4.00
- STAT 50300 - Statistical Methods For Biology
- General Education III Selective - Credit Hours: 3.00
- BIOL 39300, Preparing for Your Future in Biology, (1 cr.) is a recommended elective.

15 Credits

Fall 4th Year

- Biology Selective - Credit Hours: 3.00

- Base Lab Requirement - Credit Hours: 2.00 - 4.00
- Multidisciplinary Selective - Credit Hours: 1.00 - 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 4.00

13-17 Credits

Spring 4th Year

- Neurobiology & Physiology Selective 500 Level - Credit Hours: 3.00
- Computer Science Selective - Credit Hours: 3.00 - 4.00
- Great Issues Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Note

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Minor

Biological Sciences Minor

Requirements for Minor (16-20 credits)

Part I Courses (7-8 credits)

- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior and
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
AND
- BIOL 13500 - First year Biology Laboratory or
- BIOL 14501 - First Year Biology Laboratory With Neuro Research Project or
- BIOL 19500 - Special Assignments - (First Year Lab: Disease Ecology) or (First Year Lab: Phages to Folds) or
- IT 22600 - Biotechnology Laboratory I

OR

- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II (AP credit for BIOL 11000-BIOL 11100 is acceptable)

Part II Courses (6 credits)

- BIOL 23100 - Biology III: Cell Structure And Function or
- BIOL 23000 - Biology Of The Living Cell

- BIOL 24100 - Biology IV: Genetics And Molecular Biology or
- AGRY 32000 - Genetics

Part III Courses (2-4 credits)

- BIOL 28600 - Introduction To Ecology And Evolution
- BIOL 30200 - Human Design: Anatomy And Physiology
- BIOL 32800 - Principles Of Physiology *
- BIOL 36700 - Principles Of Development *
- BIOL 39500 - Special Assignments - Macromolecules *
- BIOL 41500 - Introduction To Molecular Biology
- BIOL 41600 - Viruses And Viral Disease
- BIOL 42000 - Eukaryotic Cell Biology
- BIOL 43200 - Reproductive Physiology
- BIOL 43600 - Neurobiology
- BIOL 43800 - General Microbiology
- BIOL 44400 - Human Genetics
- BIOL 44600 - Molecular Bacterial Pathogenesis
- BIOL 47800 - Introduction to Bioinformatics
- BIOL 48100 - Eukaryotic Genetics
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- BIOL 51100 - Introduction To X-Ray Crystallography
- BIOL 51600 - Molecular Biology Of Cancer
- BIOL 51700 - Molecular Biology: Proteins
- BIOL 53300 - Medical Microbiology
- BIOL 53601 - Biological And Structural Aspects Of Drug Design And Action
- BIOL 53700 - Immunobiology

- BIOL 53800 - Molecular, Cellular, And Developmental Neurobiology
- BIOL 55900 - Endocrinology
- BIOL 56200 - Neural Systems
- BIOL 56310 - Protein Bioinformatics
- BIOL 58000 - Evolution
- BIOL 58210 - Ecological Statistics
- BIOL 58705 - Animal Communication
- BIOL 59200 - The Evolution Of Behavior
- BIOL 59500 - Special Assignments - Neurobiology in Learning & Memory, Methods & Measurement in Physical Biochemistry, Disease Ecology, Practical Biocomputing, Neural Mechanisms in Health & Disease, Epigenetics in Health & Disease

Part IV Laboratory Course (1-4 credits)

- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 30200 - Human Design: Anatomy And Physiology
- BIOL 32800 - Principles Of Physiology *
- BIOL 36701 - Principles Of Development Lab *
- BIOL 39500 - Special Assignments - Macromolecules *
- AGRY 32100 - Genetics Laboratory

Notes

- All classes for this minor must be taken at Purdue University.
- At least one-half of these courses must be taken at the West Lafayette campus.
- A 2.0 or higher average is required in courses used to complete the minor.
- * Either BIOL 32800 (Principles Of Physiology) or BIOL 39500 (Macromolecules) alone or both BIOL 36700 and 36701 will meet the requirements for Parts III and IV of the minor.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Program Information

Base Lab Requirements for all Biology majors

The following majors must select one course from each of the three learning objectives (1-Research, Planning, Literature Review, and Writing; 2-Observation, Experimentation; and 3-Analysis, Simulation, and Presentation)

- Biology
- Biochemistry
- Biochemistry Honors
- Cell, Molecular and Developmental Biology

- Ecology, Evolution and Environmental Biology
- Genetics
- Neurobiology and Physiology

The following majors must select BIOL 43900

- Health and Disease
- Microbiology
- Microbiology Honors

Base Lab Requirement

Each student will satisfy each of the following three learning objectives. Microbiology, Microbiology Honors, and Health & Disease majors must use BIOL 43900 to meet the three objectives.

Objective 1 - Research planning, literature review, and writing

- BIOL 43900 - Laboratory In General Microbiology
- BIOL 44215 - Multidisciplinary Design Of Systems And Devices For Physiology Measurements
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- BIOL 58210 - Ecological Statistics
- BIOL 59100 - Field Ecology
- BIOL 59500 - Special Assignments - Theory of Molecular Methods or
- Neural Mech in Hlth Disease

Objective 2 - Observation, experimentation

- BIOL 43900 - Laboratory In General Microbiology
- BIOL 44202 - Animal Physiology
- BIOL 44205 - Introduction To LabVIEW
- BIOL 44207 - Exploration Of Protein Structure
- BIOL 44211 - Laboratory In Anatomy And Physiology
- BIOL 44212 - Microscopy And Cell Biology
- BIOL 54200 - Modular Upper-Division Laboratory Course - Neurophysiology
- BIOL 59100 - Field Ecology
- BIOL 59500 - Special Assignments - CryoEM 3D Reconstruction

Objective 3 - Analysis, simulation, and presentation

- BIOL 43900 - Laboratory In General Microbiology
- BIOL 44202 - Animal Physiology
- BIOL 44205 - Introduction To LabVIEW
- BIOL 44212 - Microscopy And Cell Biology
- BIOL 44215 - Multidisciplinary Design Of Systems And Devices For Physiology Measurements
- BIOL 54200 - Modular Upper-Division Laboratory Course - Neurophysiology
- BIOL 58210 - Ecological Statistics

- BIOL 59100 - Field Ecology
- BIOL 59500 - Special Assignments - CryoEM 3D Reconstruction or
 - Data Analysis in Neurosci
 - Theory of Molecular Methods
 - Neural Mech in Hlth Disease

Additional Information

Students who successfully complete a Biology Honors Research Thesis have successfully met all three objectives. Undergraduate Research may be used to meet these objectives. Student must get Research Mentor approval for each objective after that objective is completed. Student must also earn at least four credits of BIOL 49400 or 49900 research. Consult with your academic advisor for the forms used to obtain Research Mentor approval for each objective. A combination of courses and research may be used to meet this requirement.

Department of Chemistry

Overview

The Department of Chemistry is located centrally on the Purdue campus and is housed in the *Richard B. Wetherill Laboratories(WTHR)* and the *Herbert C. Brown Laboratory of Chemistry(BRWN)*. Students, faculty, and staff have access to world class facilities both for teaching and research.

Our Mission | Our Vision

The Department is home to:

- 52 faculty members
- 350 undergraduate students
- 310 graduate students
- 90 support personnel

In the 2013 Academic Ranking of World Universities (Shanghai Rankings), our departments ranked 20th world-wide and 13th nationally.

The Department of Chemistry offers a Bachelor of Science in Chemistry (ACS accredited), a Bachelor of Science and a minor in Chemistry. The department also offers an Honors program and the opportunity to participate in Cooperative Education Program.

Honors Program

The Department of Chemistry has an honors program for superior students. Participation can begin during the sophomore year, and a student will be assigned to advanced sections in chemistry courses. During the junior and senior years, a student engages in undergraduate research, participates in research seminars and completes honor courses. The undergraduate research experience (CHM 49900 or equivalent) is to be a minimum of six credits. In addition, the student must write an honor's thesis based on the CHM 49900 work. The faculty advisor will read the thesis and the student will give a presentation of the research.

Admission to the chemistry honors program must be made by the end of the junior year. The honors student is expected to achieve and maintain a scholastic graduation index of at least 3.40. Students fulfilling requirements of the chemistry honors program will be graduated "with honors in chemistry". The honors program has been approved by the Royal Society of Chemistry.

Cooperative Education Program

The Department of Chemistry participates in the Cooperative Education Program. This program requires five years and involves the option of 3 or 5 work period sessions, either semester or summer modules, with a cooperating company in the chemical industry. As a student gains experience, she or he is given increasingly responsible industrial assignments and receives more compensation. A student can enter the program meeting the following requirements: has completed two semesters of chemistry and has a chemistry index of 2.80. Information is available from the Coordinator of Cooperative Education in the Department of Chemistry. Check with your advisor for further information.

Faculty

Department of Chemistry Website

Contact Information

Head: Professor Timothy Zwier

Graduate Admissions: Ms. Candice Kissinger, Assistant Head

Undergraduate Information: Dr. Beatriz Cisneros

Webmaster: webmaster@chem.purdue.edu

Mailing address:

Department of Chemistry

560 Oval Drive

West Lafayette, Indiana 47907-2084

Telephone (765) 494-5200 **FAX** (765) 494-0239

Graduate Information

For Graduate Information please see Chemistry Graduate Program Information.

Baccalaureate

Biochemistry (Chemistry), BSCH

About the Program

Biochemists study the chemical basis of life. Some of the major problems include the transfer of genetic information to biological structures, the conversion of nutrients into cell constituents and their utilization as sources of energy, the storage of memory, and the chemical nature of neural processes. Furthermore, biochemists are interested in the chemical details of important processes such as photosynthesis, blood clotting, fertilization, and other functions that may be unique to certain organisms. This program includes six credits of undergraduate research in a wide range of fields, including drug discovery, nano-medicine, protein structure determination, development and application of novel chemical tools to dissect different biological processes.

By concentrating advanced elective credit hours in biochemistry and by taking biology courses, this degree provides an excellent preparation for medical, dental, or veterinary schools. This program would particularly benefit those planning careers in medical research.

Biochemistry Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses

Required Major Courses (81-86 credits)

- CHM 26505 - Organic Chemistry
- CHM 26500 - Organic Chemistry Laboratory
- CHM 26605 - Organic Chemistry
- CHM 26600 - Organic Chemistry Laboratory
- CHM 32100 - Analytical Chemistry I
- CHM 24100 - Introductory Inorganic Chemistry
- CHM 34200 - Inorganic Chemistry
- CHM 37300 - Physical Chemistry
- CHM 37301 - Physical Chemistry Laboratory
- CHM 37401 - Physical Chemistry Laboratory
- CHM 37400 - Physical Chemistry
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 19400 - Freshman Chemistry Orientation
- CHM 29400 - Sophomore Chemistry Seminar
- CHM 49400 - Junior-Senior Chemistry Seminar
- CHM 49900 - Special Assignments
- CHM 53300 - Introductory Biochemistry
- CHM 53800 - Molecular Biotechnology
- MA 26100 - Multivariate Calculus
- PHYS 17200 - Modern Mechanics (satisfies Science Selective for core)

- CHM 12500 - Introduction To Chemistry I or
- CHM 11500 - General Chemistry (satisfies Science Selective for core)

- CHM 12600 - Introduction To Chemistry II or
- CHM 11600 - General Chemistry

- BIOL 24100 - Biology IV: Genetics And Molecular Biology and
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
or
- AGRY 32000 - Genetics and
- AGRY 32100 - Genetics Laboratory

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning Selective for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

- PHYS 27200 - Electric And Magnetic Interactions (satisfies Science Selective for core) or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

Other Departmental /Program Course Requirements (25-38 credits)

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10600 - First-Year Composition (satisfies Written Communication for core) (satisfies Information Literacy Selective for core)
- COM 21700 - Science Writing And Presentation (satisfies Oral Communication for core)

- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy Selective for core) or
- STAT 35000 - Introduction To Statistics (satisfies Information Literacy Selective for core)

- CS 15800 - C Programming or
- CS 17700 - Programming With Multimedia Objects

- Language I Selective - Credit Hours: 0.00 - 3.00
- Language II Selective - Credit Hours: 0.00 - 3.00
- Language and Culture III Selective (select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 3.00
- General Education I Selective (select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education II Selective (select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education III Selective (select courses could satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- Great Issues Selective - Credit Hours: 3.00
- Multidisciplinary Selective (can be satisfied with a minor) - Credit Hours: 3.00 (select courses could satisfy Science, Technology and Society for core)

Electives (1-14 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- CHM 12500 - Introduction To Chemistry I *
- CHM 19400 - Freshman Chemistry Orientation
- MA 16100 - Plane Analytic Geometry And Calculus I

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10600 - First-Year Composition *

- Language I - Credit Hours: 3.00 **

18 Credits

Spring 1st Year

- CHM 12600 - Introduction To Chemistry II
- MA 16200 - Plane Analytic Geometry And Calculus II
- Language II - Credit Hours: 3.00 **
- STS Elective*/Multidisciplinary - Credit Hours: 3.00

16 Credits

Fall 2nd Year

- CHM 26505 - Organic Chemistry
- CHM 26500 - Organic Chemistry Laboratory
- MA 26100 - Multivariate Calculus
- PHYS 17200 - Modern Mechanics
- CHM 29400 - Sophomore Chemistry Seminar

14 Credits

Spring 2nd Year

- CHM 26605 - Organic Chemistry
- CHM 26600 - Organic Chemistry Laboratory
- PHYS 27200 - Electric And Magnetic Interactions
- General Education - Credit Hours: 3.00 **
- Language and Culture - Credit Hours: 3.00 **

15 Credits

Fall 3rd Year

- BIOL 23100 - Biology III: Cell Structure And Function

- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 53300 - Introductory Biochemistry
- CHM 49900 - Special Assignments
- CS 17700 - Programming With Multimedia Objects ** or
- CS 15800 - C Programming **
- General Education - Credit Hours: 3.00

16-17 Credits

Spring 3rd Year

- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- CHM 53800 - Molecular Biotechnology
- CHM 49900 - Special Assignments
- CHM 24100 - Introductory Inorganic Chemistry
- CHM 49400 - Junior-Senior Chemistry Seminar

15 Credits

Fall 4th Year

- CHM 37300 - Physical Chemistry
- CHM 37301 - Physical Chemistry Laboratory
- CHM 32100 - Analytical Chemistry I
- STAT 30100 - Elementary Statistical Methods **
- CHM 49900 - Special Assignments
- COM 21700 - Science Writing And Presentation

16 Credits

Spring 4th Year

- CHM 37400 - Physical Chemistry
- CHM 37401 - Physical Chemistry Laboratory
- CHM 34200 - Inorganic Chemistry
- General Education - Credit Hours: 3.00 **
- Great Issues - Credit Hours: 3.00 **

13 Credits

Notes

*Satisfies a University Core Requirement

****Satisfies a Non-departmental Major Course Requirement**

Students must earn a cumulative GPA of 2.0 in all CHM courses.

Students must have 32 credits at the 30000 level or above taken at Purdue.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Chemistry (ACS), BSCH

About the Program

Chemistry at Purdue University has a ratio of 1 faculty member for every 8 undergraduates, which allows students to enjoy a great deal of individualized attention. It also offers opportunities for mentoring programs and cutting-edge undergraduate research in a wide range of fields from drug discovery to climate change. Chemistry majors can pursue one of two degrees: B.S. in chemistry, accredited by the American Chemical Society (ACS); or the more flexible B.S. with chemistry as a field of study.

Chemistry (ACS accredited) is designed primarily for students planning professional careers as chemists in industry, universities, or research institutes. This degree program fulfills the recommendations of the Committee of Professional Training of the ACS and graduates will be certified by the ACS as having fulfilled its recommended requirements.

This degree provides an excellent preparation for students pursuing graduate school in Chemistry.

There is also the opportunity to complete in five years a dual degree with chemical engineering if the student has been accepted into the College of Engineering.

Chemistry - American Chemical Society Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses

Required Major Courses (76-80 credits)

- CHM 26505 - Organic Chemistry
- CHM 26500 - Organic Chemistry Laboratory
- CHM 26605 - Organic Chemistry
- CHM 26600 - Organic Chemistry Laboratory
- CHM 32100 - Analytical Chemistry I
- CHM 24100 - Introductory Inorganic Chemistry
- CHM 34200 - Inorganic Chemistry
- CHM 34201 - Inorganic Chemistry Laboratory
- CHM 37300 - Physical Chemistry
- CHM 37400 - Physical Chemistry
- CHM 37301 - Physical Chemistry Laboratory
- CHM 37401 - Physical Chemistry Laboratory
- CHM 42400 - Analytical Chemistry II
- CHM 51300 - Chemical Literature
- CHM 53300 - Introductory Biochemistry
- CHM 19400 - Freshman Chemistry Orientation
- CHM 29400 - Sophomore Chemistry Seminar
- CHM 49400 - Junior-Senior Chemistry Seminar
- MA 26100 - Multivariate Calculus
- MA 26200 - Linear Algebra And Differential Equations
- PHYS 17200 - Modern Mechanics (satisfies Science Selective for core)

- CHM 12500 - Introduction To Chemistry I or
- CHM 11500 - General Chemistry (satisfies Science Selective for core)

- CHM 12600 - Introduction To Chemistry II or
- CHM 11600 - General Chemistry

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning Selective for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

- PHYS 27200 - Electric And Magnetic Interactions (satisfies Science Selective for core) or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

- CHM Elective - CHM 46200 or CHM 49900 or CHM 56000 or CHM 57900 or CHM 58100 or CHM 53800

Other Departmental /Program Course Requirements (27-38 credits)

- COM 21700 - Science Writing And Presentation (satisfies Oral Communication for core)

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy Selective for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy Selective for core)

- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy Selective for core) or
- STAT 35000 - Introduction To Statistics (satisfies Information Literacy Selective for core)

- CS 15800 - C Programming or
- CS 17700 - Programming With Multimedia Objects

- Language I Selective - Credit Hours: 0.00 - 3.00
- Language II Selective - Credit Hours: 0.00 - 3.00
- Language and Culture III Selective (select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 3.00
- General Education I Selective (select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education II Selective (select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education III Selective (select courses could satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- Great Issues Selective - Credit Hours: 3.00
- Multidisciplinary Selective (can be satisfied with a minor) - Credit Hours: 3.00 (select courses may satisfy the Science, Technology and Society for core)

Electives (2-17 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- CHM 19400 - Freshman Chemistry Orientation
- CHM 12500 - Introduction To Chemistry I * or
- CHM 11500 - General Chemistry
- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- ENGL 10600 - First-Year Composition * or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Language I (may be test out) - Credit Hours: 3.00 **

18 Credits

Spring 1st Year

- PHYS 17200 - Modern Mechanics
- CHM 12600 - Introduction To Chemistry II or
- CHM 11600 - General Chemistry
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- Language II - Credit Hours: 3.00 **

17 Credits

Fall 2nd Year

- CHM 26505 - Organic Chemistry
- CHM 26500 - Organic Chemistry Laboratory
- MA 26100 - Multivariate Calculus
- PHYS 27200 - Electric And Magnetic Interactions
- CHM 29400 - Sophomore Chemistry Seminar

14 Credits

Spring 2nd Year

- CHM 26605 - Organic Chemistry
- CHM 26600 - Organic Chemistry Laboratory

- MA 26200 - Linear Algebra And Differential Equations
- General Education - Credit Hours: 3.00 **
- Language and Culture - Credit Hours: 3.00 **

15 Credits

Fall 3rd Year

- CHM 32100 - Analytical Chemistry I
- STAT 30100 - Elementary Statistical Methods *
- CHM 37300 - Physical Chemistry
- CHM 37301 - Physical Chemistry Laboratory
- CS 17700 - Programming With Multimedia Objects ** or
- CS 15800 - C Programming **

14-15 Credits

Spring 3rd Year

- CHM 24100 - Introductory Inorganic Chemistry
- CHM 37400 - Physical Chemistry
- CHM 37401 - Physical Chemistry Laboratory
- CHM 51300 - Chemical Literature
- COM 21700 - Science Writing And Presentation
- General Education - Credit Hours: 3.00 **

15 Credits

Fall 4th Year

- CHM 53300 - Introductory Biochemistry
- CHM 42400 - Analytical Chemistry II
- CHM 49400 - Junior-Senior Chemistry Seminar
- Multidisc.**/STS Selective* - Credit Hours: 3.00
- General Education - Credit Hours: 3.00 **

14 Credits

Spring 4th Year

- CHM 34200 - Inorganic Chemistry
- CHM 34201 - Inorganic Chemistry Laboratory
- CHM Elective - Credit Hours: 3.00
- Great Issues - Credit Hours: 3.00 **

- Elective - Credit Hours: 2.00

12 Credits

Notes

*Satisfies a University Core Requirement

**Satisfies a Non-departmental Major Course Requirement

Students must earn a cumulative GPA of 2.0 in all CHM courses.

Students must have 32 credits at the 30000 level or above taken at Purdue.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Chemistry, BS

About the Program

Chemistry at Purdue University has a ratio of 1 faculty member for every 8 undergraduates, which allows students to enjoy a great deal of individualized attention. It also offers opportunities for mentoring programs and cutting-edge undergraduate research in a wide range of fields from drug discovery to climate change.

The B.S. program with chemistry as a field of study is designed for those who want training in chemistry and freedom to pursue minors or second majors in other areas. Common areas of interest have been Forensic Sciences, Biology, Foreign Languages, Management, Psychology, and other Liberal Arts areas. The flexibility in this program adapts easily to Study Abroad semesters.

Chemistry Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses

Required Major Courses (60-64 credits)

- CHM 26505 - Organic Chemistry
- CHM 26500 - Organic Chemistry Laboratory
- CHM 26605 - Organic Chemistry
- CHM 26600 - Organic Chemistry Laboratory
- CHM 32100 - Analytical Chemistry I
- CHM 24100 - Introductory Inorganic Chemistry
- CHM 34200 - Inorganic Chemistry
- CHM 37300 - Physical Chemistry
- CHM 37400 - Physical Chemistry
- CHM 37301 - Physical Chemistry Laboratory
- CHM 37401 - Physical Chemistry Laboratory
- CHM 19400 - Freshman Chemistry Orientation
- CHM 29400 - Sophomore Chemistry Seminar
- CHM 49400 - Junior-Senior Chemistry Seminar
- MA 26100 - Multivariate Calculus
- PHYS 17200 - Modern Mechanics (satisfies Science Selective for core)

- CHM 12500 - Introduction To Chemistry I or
- CHM 11500 - General Chemistry (satisfies Science Selective for core)

- CHM 12600 - Introduction To Chemistry II or
- CHM 11600 - General Chemistry

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning Selective for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

- PHYS 27200 - Electric And Magnetic Interactions (satisfies Science Selective for core) or
- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory

Other Departmental /Program Course Requirements (28-38 credits)

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10600 - First-Year Composition (satisfies Written Communication for core) (satisfies Information Literacy Selective for core)
- COM 21700 - Science Writing And Presentation (satisfies Oral Communication for core)

- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy Selective for core) or
- STAT 35000 - Introduction To Statistics (satisfies Information Literacy Selective for core)
- CS 15800 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- Language I Selective - Credit Hours: 0.00 - 3.00
- Language II Selective - Credit Hours: 0.00 - 3.00
- Language and Culture III Selective (select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 3.00
- General Education I Selective (select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education II Selective (select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education III Selective (select courses could satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- Great Issues Selective - Credit Hours: 3.00
- Multidisciplinary Selective (can be satisfied with a minor) - Credit Hours: 3.00
(select courses could satisfy Science, Technology and Society for core)

Electives (18-32 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- CHM 12500 - Introduction To Chemistry I *
- MA 16100 - Plane Analytic Geometry And Calculus I
- ENGL 10600 - First-Year Composition *

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- CHM 19400 - Freshman Chemistry Orientation
- Language I (may be test out) - Credit Hours: 3.00 **

18 Credits

Spring 1st Year

- CHM 12600 - Introduction To Chemistry II
- MA 16200 - Plane Analytic Geometry And Calculus II
- Language II - Credit Hours: 3.00 **
- Science, Technology and Society - Credit Hours: 3.00

16 Credits

Fall 2nd Year

- CHM 26505 - Organic Chemistry
- CHM 26500 - Organic Chemistry Laboratory
- MA 26100 - Multivariate Calculus
- PHYS 17200 - Modern Mechanics
- CHM 29400 - Sophomore Chemistry Seminar

14 Credits

Spring 2nd Year

- CHM 26605 - Organic Chemistry
- CHM 26600 - Organic Chemistry Laboratory
- PHYS 27200 - Electric And Magnetic Interactions
- General Education - Credit Hours: 3.00
- Language and Culture - Credit Hours: 3.00

15 Credits

Fall 3rd Year

- CHM 32100 - Analytical Chemistry I
- STAT 30100 - Elementary Statistical Methods *
- General Education - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15 Credits

Spring 3rd Year

- CHM 24100 - Introductory Inorganic Chemistry
- CS 17700 - Programming With Multimedia Objects or
- CS 15800 - C Programming
- General Education - Credit Hours: 3.00 **
- Great Issues - Credit Hours: 3.00

13 - 14 Credits

Fall 4th Year

- CHM 37300 - Physical Chemistry
- CHM 37301 - Physical Chemistry Laboratory
- CHM 49400 - Junior-Senior Chemistry Seminar
- COM 21700 - Science Writing And Presentation
- Multidisciplinary/Elective - Credit Hours: 3.00 **
- Elective - Credit Hours: 3.00

14 Credits

Spring 4th Year

- CHM 37400 - Physical Chemistry
- CHM 37401 - Physical Chemistry Laboratory
- CHM 34200 - Inorganic Chemistry
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 4.00 or 5.00

14 - 15 Credits

Notes

*Satisfies a University Core Requirement

**Satisfies a Non-departmental Major Course Requirement

Students must earn a cumulative GPA of 2.0 in all CHM courses.

Students must have 32 credits at the 30000 level or above taken at Purdue.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Minor

Chemistry Minor

Chemistry Minor provides a strong background in Chemistry for students majoring in some other discipline.

Requirements for the Minor (16 credits)

The 16 credits can come from Area 1 and/or Area 2 and/or Area 3 and/or Area 4.

Area 1 Organic Chemistry (0-10 credits)

Organic chemistry courses may only be taken during the first and second semester. Students may only take one (1) first semester and one (1) second semester organic course, as described below.

- CHM 25500 - Organic Chemistry or
- CHM 26100 - Organic Chemistry or
- CHM 26505 - Organic Chemistry or
- MCMP 20400 - Organic Chemistry I

- CHM 25600 - Organic Chemistry or
- CHM 26200 - Organic Chemistry or
- CHM 26605 - Organic Chemistry or
- MCMP 20500 - Organic Chemistry II

- CHM 25501 - Organic Chemistry Laboratory or
- CHM 26300 - Organic Chemistry Laboratory or
- CHM 26500 - Organic Chemistry Laboratory or
- CHM 26700 - Organic Chemistry Laboratory Honors

- CHM 25601 - Organic Chemistry Laboratory or

- CHM 26400 - Organic Chemistry Laboratory or
- CHM 26600 - Organic Chemistry Laboratory or
- CHM 26800 - Organic Chemistry Laboratory Honors

Area 2 Physical Chemistry (0-7 credits)

- CHM 37200 - Physical Chemistry or
- CHM 37300 - Physical Chemistry
- CHM 37000 - Topics In Physical Chemistry or
- CHM 37400 - Physical Chemistry

Area 3 Biochemistry (0-3 credits)

- CHM 53300 - Introductory Biochemistry or
- BCHM 56100 - General Biochemistry I or
- CHM 33900 - Biochemistry: A Molecular Approach

Area 4 Others (0-16 credits)

Course choices in addition to Area 1, Area 2 and Area 3 options:

- CHM 32100 - Analytical Chemistry I
- CHM 32300 - Analytical Chemistry I Honors
- CHM 42400 - Analytical Chemistry II
- CHM 24100 - Introductory Inorganic Chemistry
- CHM 34200 - Inorganic Chemistry
- CHM 34201 - Inorganic Chemistry Laboratory
- CHM 37301 - Physical Chemistry Laboratory
- CHM 37401 - Physical Chemistry Laboratory
- CHM 57900 - Computational Chemistry
- CHM 33901 - Biochemistry Laboratory
- CHM 46200 - Intermediate Organic Chemistry
- CHM 56000 - Organic Spectroscopic Analysis
- CHM 53800 - Molecular Biotechnology
- CHM 58100 - Atmospheric Chemistry
- CHM 51300 - Chemical Literature
- CHM 49900 - Special Assignments (up to 3 cr)
- CHM 29000 - Selected Topics In Chemistry For Lower-Division Students Integrated Science
- CHM 49000 - Selected Topics In Chemistry For Upper-Division Students Great Issues

Notes

- Please note that CHM 20000, CHM 22400, CHM 25700 and CHM 33300 cannot be used to complete the minor.
- To qualify for the minor, the following classes must be completed with a cumulative GPA of 2.0 or better.
- ALL COURSES FOR THIS MINOR LISTED BELOW MUST BE TAKEN AT PURDUE UNIVERSITY WEST LAFAYETTE.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Department of Computer Science

Department of Computer Science

Purdue Computer Science is one of the country's top-ranked programs. Faculty members are shaping the future of information technology through cutting-edge research. Students can take courses that include such topics as graphics and animation, competitive programming, cryptography and security, networks, software engineering, distributed systems, information systems, artificial intelligence, and bioinformatics. Computer Science graduates pursue careers in animation and visualization, biotechnology, computational finance, computer graphics, consulting, information security, wireless systems, and software engineering. Many also go on to graduate or professional school in areas such as business, law, or medicine.

The department is located in the Lawson Computer Science Building, which opened in 2006. In addition to offering an inviting and comfortable environment, the building is equipped with cutting-edge networking and computing technologies, including 10-gigabit Ethernet cabling and wireless access throughout the building. There are four classrooms, four instructional labs, five research labs, and a student activity center. The building also offers students a variety of interaction areas, and a deli-style café and espresso bar. A 16-by-9 foot tiled video wall donated by the Harris Corporation is used for a variety of purposes, including notices of campus events, workshop and colloquium speakers, news and information, research demonstrations, and class projects.

The Purdue Computer Science Department offers a Bachelor of Science (BS), a minor in computer science, or a 5-year combined BS/MS degree. The department also offers an Honors Program, and the opportunity to participate in the Cooperative Education Program. A transfer program is also available, TSAP in Computer Science.

Faculty

[Computer Science Website](#)

Contact Information

General Department Contact

Purdue University
Department of Computer Science
305 N. University Street
West Lafayette, IN 47907-2107
Phone: (765) 494-6010
Fax: (765) 494-0739

Graduate Information

For Graduate Information please see [Computer Science Graduate Program Information](#).

Baccalaureate

Computer Science Honors, BS

About the Program

Students in the Computer Science Honors major, in addition to fulfilling all the requirements for a BS in Computer Science, will complete additional coursework and a research project. Honors students must maintain an overall GPA of 3.25 plus at least a 3.6 in Computer Science and required CSHO courses. The program requirements include additional math coursework, three out of four selected CS and ECE courses, a research seminar and project, and a graduate level course. It is especially suitable for students planning on graduate level coursework, though it also offers advantages to students seeking employment.

Students are invited to declare the major if they meet the qualifications after their first semester or after completion of the six core courses. Students who have been admitted to the Honors College may also join the major. Students may also request to declare the major if they meet qualifications no later than their seventh semester (student must have at least 2 academic semesters remaining to accommodate both the research seminar and the research project).

- Computer Science Concentration - Computational Science and Engineering Track
- Computer Science Concentration - Computer Graphics and Visualization Track
- Computer Science Concentration - Database and Information Systems Track (DBIS)
- Computer Science Concentration - Foundations of Computer Science Track (FCS)
- Computer Science Concentration - Machine Intelligence Track (MI)
- Computer Science Concentration - Programming Language Track (PL)
- Computer Science Concentration - Security Track
- Computer Science Concentration - Software Engineering Track
- Computer Science Concentration - Systems Programming Track (Systems)

[Computer Science Website](#)

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click [here](#).

Computer Science Honors Major Courses (59-63 credits)

Required CS Honors Major Math Courses (7-8 credits)

(must have C or better to meet prerequisite for certain upper level CS courses)

- MA 35100 - Elementary Linear Algebra
- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Required CS Major Core Courses (21 credits)

(must have C or better in all courses)

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ (satisfies CoS Computing and Teambuilding requirement)
- CS 18200 - Foundations Of Computer Science
- CS 24000 - Programming In C
- CS 25000 - Computer Architecture
- CS 25100 - Data Structures And Algorithms
- CS 25200 - Systems Programming

Required CS Major Track Selectives (18-21 credits)

(must have C or better in all courses)

- CS Track Required course - Credit Hours: 3.00
- CS Track Required course - Credit Hours: 3.00
- CS Track Required/Elective course - Credit Hours: 3.00
- CS Track Required/Elective course - Credit Hours: 3.00
- CS Track Elective course - Credit Hours: 3.00
- CS Track Elective course - Credit Hours: 3.00
- CS Track Elective course (if Computational Science & Engineering track or Database & Information Systems track) - Credit Hours: 3.00

Required CS Honors - (13 credits)

(need CS GPA of 3.60 or better & cumulative GPA of 3.25 and must have a C or better in all courses)

- CS 39700 - Honors Seminar
- CS 49700 - Honors Research Project (may use for Track Elective - see Track chairperson for approval)

- MA course with course number higher than MA 35100 - Elementary Linear Algebra or
- STAT course with course number higher than STAT 51100 - Statistical Methods

- CS 50000 level course (may use for Track Elective - see Track chairperson for approval) - Credit Hours: 3.00
- Three out of the four following courses: CS 35400, CS 35200, CS 38100, ECE 27000. CS 354, CS 352, and CS 381 may be used to meet track requirements if the courses are required or electives for the student's track.

Other Departmental/Program Course Requirements (32-62 credits)

* Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy Selective for core) or
- HONR 19903 - Interdisciplinary Approaches In Writing (satisfies Written Communication and Information Literacy Selective for core) or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy Selective for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy Selective for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ (satisfies Quantitative Reasoning for core) (must have C or better *to meet prerequisite for CS 18200*) or
- MA 16500 - Analytic Geometry And Calculus I ♦ (satisfies Quantitative Reasoning for core) (must have C or better *to meet prerequisite for CS 18200*)

- MA 16200 - Plane Analytic Geometry And Calculus II (satisfies Quantitative Reasoning for core) or
- MA 16600 - Analytic Geometry And Calculus II (satisfies Quantitative Reasoning for core)

- STAT 35000 - Introduction To Statistics or
- STAT 51100 - Statistical Methods

- Technical Writing Option (COM 21700 recommended) - Credit Hours: 0.00 - 3.00
- Technical Presenting Option (COM 21700 recommended) (may satisfy Oral Communication for core) - Credit Hours: 0.00 - 3.00
- Language I * - select from three options; select from list - Credit Hours: 0.00 - 4.00
- Language II * - select from three options; select from list - Credit Hours: 0.00 - 4.00
- Language and Culture III * - (may satisfy Human Cultures Humanities for core) select from three options; select from list - Credit Hours: 0.00 - 4.00
- General Education I - (may satisfy Human Culture Humanities and Behavioral/Social Science for core) select from list - Credit Hours: 3.00
- General Education II - (may satisfy Human Culture Humanities and Behavioral/Social Science for core) select from list - Credit Hours: 3.00
- General Education III - select from list - Credit Hours: 3.00
- Great Issues -select from list - Credit Hours: 3.00
- Multidisciplinary Experience * (may satisfy Science, Technology and Society for core) - select from list - Credit Hours: 0.00 - 3.00
- Teambuilding and Collaboration Experience * (CS 18000 meets requirement) - select from list - Credit Hours: 0.00 - 4.00
- Lab Science I selective - (satisfies Science for core) select from list - Credit Hours: 3.00 - 4.00
- Lab Science II selective - (may satisfy Science for core) select from list - Credit Hours: 3.00 - 4.00

Electives (1-29 credits)

Enrollment in freshman seminar courses CS 19100 and CS 19300 is required with CS 18000. They are not degree requirements. CS 19700 Freshman Honors Seminar, CS 29100 Sophomore Seminar, and CS 39100 Junior Seminar are optional but recommended.

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication

- Quantitative Reasoning
For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

<https://www.cs.purdue.edu/undergraduate/curriculum/bachelor.html>

Fall 1st Year

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ ***
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- Language level I - Credit Hours: 3.00 - 4.00
- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦
- Elective - (CS 19300 recommended)
- Elective - (CS 19100 recommended)
- Elective - Credit Hours: 1.00

15-16 Credits

Spring 1st Year

- CS 18200 - Foundations Of Computer Science ***
- CS 24000 - Programming In C ***
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- COM 21700 - Science Writing And Presentation or
Language Level II - Credit Hours: 3.00 - 4:00
- General Education I - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (CS 19700 recommended)

15-16 Credits

Fall 2nd Year

- CS 25000 - Computer Architecture ***
- CS 25100 - Data Structures And Algorithms ***

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

- Elective: Credit Hours: 1.00 (CS 29100 recommended)
- Language level II - Credit Hours: 3.00 - 4.00

15-17 Credits

Spring 2nd Year

- CS 25200 - Systems Programming ***
- ECE 27000 - Introduction To Digital System Design
- MA 35100 - Elementary Linear Algebra
- Language level III or Culture course or Diversity course - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 1.00

15 Credits

Fall 3rd Year

- CS 39700 - Honors Seminar
- COM 21700 - Science Writing And Presentation (Recommended)

- STAT 35000 - Introduction To Statistics or
- STAT 51100 - Statistical Methods

- CS track requirement - Credit Hours: 3.00 ***
- CS track requirement - Credit Hours: 3.00 ***
- Elective - Credit Hours: 3.00

15 Credits

Spring 3rd Year

- CS track requirement/elective - Credit Hours: 3.00 ***
- CS track requirement/elective - Credit Hours: 3.00 ***
- Great Issues - Credit Hours: 3.00
- General Education II - Credit Hours: 3.00
- MA with course number higher than MA 35100 OR STAT course with number higher than 511 - Credit Hours: 3.00

15 Credits

Fall 4th Year

- CS 49700 - Honors Research Project
- CS track elective - Credit Hours: 3.00 ***
- Lab Science I - Credit Hours: 3.00 - 4.00
- Multidisciplinary Experience/Science, Technology and Society - Credit Hours: 0.00 to 3.00
- General Education III - Credit Hours: 3.00

15-16 Credits

Spring 4th Year

- CS track elective - Credit Hours: 3.00 ***
- Lab Science II - Credit Hours: 3.00 - 4.00
- CS 50000 level - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Notes

2.0 Major and Graduation GPA required for Bachelor of Science degree.

3.6 CS GPA and 3.25 cumulative GPA is required for graduation with the CS Honors degree.

***All CS core courses and all track requirements, regardless of department, must be completed with a grade of "C" or higher (effective fall 2011). All prerequisites to CS core courses and track requirements, regardless of department, must be completed with a grade of C or higher (effective Fall 2015). Information about CS Tracks -[click here](#)

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Computer Science, BS

About the Program

Purdue Computer Science is one of the country's top-ranked programs. Faculty members are shaping the future of information technology through cutting-edge research. Students can take courses that include such topics as graphics and animation, web programming, competitive programming, cryptography and security, networks, software engineering, distributed systems, information systems, artificial intelligence, and bioinformatics.

The Purdue University Department of Computer Science has a comprehensive and exciting curriculum for its undergraduate students. The flexible curriculum offers adventurous young women and men an excellent opportunity to be involved in a dynamic discipline that will continue to grow and to contribute significantly to progress in many other disciplines and ultimately to changes in human society that are nothing short of profound. Students learn communication skills, teamwork, and problem-solving skills and acquire the necessary technical skills for positions in computing in nearly any industry.

Computer Science students begin by taking six core courses that teach them the fundamentals of computer science. Students can then select one or more tracks, which allow them to deepen their understanding in a specific area (or areas) of Computer Science. These academic tracks include:

- Computer Science Concentration - Computational Science and Engineering Track
- Computer Science Concentration - Computer Graphics and Visualization Track
- Computer Science Concentration - Database and Information Systems Track (DBIS)
- Computer Science Concentration - Foundations of Computer Science Track (FCS)
- Computer Science Concentration - Machine Intelligence Track (MI)
- Computer Science Concentration - Programming Language Track (PL)
- Computer Science Concentration - Security Track
- Computer Science Concentration - Software Engineering Track
- Computer Science Concentration - Systems Programming Track (Systems)

[Computer Science Website](#)

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major

2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Computer Science Major Courses (46-50 credits)

Required CS Major Math Courses (7-8 credits)

(must have C or better to meet prerequisite for certain upper level CS courses)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

- MA 26500 - Linear Algebra or
- MA 35100 - Elementary Linear Algebra

Required CS Major Core Courses (21 credits)

(must have C or better in all courses)

- CS 18000 - Problem Solving And Object-Oriented Programming (satisfies CoS Computing and Teambuilding requirements) ♦
- CS 18200 - Foundations Of Computer Science
- CS 24000 - Programming In C
- CS 25000 - Computer Architecture
- CS 25100 - Data Structures And Algorithms
- CS 25200 - Systems Programming

Required CS Major Track Selectives - (18-21 credits)

Please see links to all track requirements above.

(must have C or better in all courses) select from list [LINK](#)

- CS Track Required course - Credit Hours: 3.00
- CS Track Required Course - Credit Hours: 3.00
- CS Track Required/Elective course - Credit Hours: 3.00
- CS Track Required/Elective course - Credit Hours: 3.00
- CS Track Elective course - Credit Hours: 3.00
- CS Track Elective course - Credit Hours: 3.00
- CS Track Elective course (if Computational Science & Engineering track or Database & Information Systems track) - Credit Hours: 3.00

Other Departmental/Program Course Requirements (32-62 credits)

* Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy Selective for core) or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy Selective for core) or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy Selective for core)
- MA 16100 - Plane Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) (must have C or better to meet prerequisite for CS 18200) ♦ or
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) (must have C or better to meet prerequisite for CS 18200) ♦
- MA 16200 - Plane Analytic Geometry And Calculus II (satisfies Quantitative Reasoning for core) or
- MA 16600 - Analytic Geometry And Calculus II (satisfies Quantitative Reasoning for core)

- STAT 35000 - Introduction To Statistics or
- STAT 51100 - Statistical Methods
- Technical Writing Option* - (COM 21700 recommended) select from list - Credit Hours: 0.00 - 3.00
- Technical Presenting Option* - (COM 21700 recommended) (may satisfy Oral Communication for core) select from list - Credit Hours: 0.00 - 3.00
- Language I * - select from three options; select from list - Credit Hours: 0.00 - 4.00
- Language II * - select from three options; select from list - Credit Hours: 0.00 - 4.00
- Language and Culture III * - (may satisfy Human Cultures Humanities for core) select from three options; select from list - Credit Hours: 0.00 - 4.00
- General Education I - (may satisfy Human Culture Humanities and Behavioral/Social Science for core) select from list - Credit Hours: 3.00
- General Education II - (may satisfy Human Culture Humanities and Behavioral/Social Science for core) select from list - Credit Hours: 3.00
- General Education III - select from list - Credit Hours: 3.00
- Great Issues -select from list - Credit Hours: 3.00
- Multidisciplinary Experience * - (may satisfy Science, Technology & Society for core) select from list - Credit Hours: 0.00 - 3.00
- Teambuilding and Collaboration Experience * (CS 18000 meets requirement) - select from list - Credit Hours: 0.00 - 4.00
- Lab Science I selective - (satisfies Science for core) select from list - Credit Hours: 3.00 - 4.00
- Lab Science II selective - (may satisfy Science for core) select from list - Credit Hours: 3.00 - 4.00

Electives (10-42 credits)

CS 19100 - Freshman Resources Seminar and CS 19300 - Tools are required freshman seminar courses; corequisites with CS 18000. They are not degree requirements. CS 29100 - Sophomore Development Seminar and CS 39100 - Junior Resources Seminar are optional but recommended.

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ *** (meets Computing and Teambuilding and Collaboration Requirement)
- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- Language Level I - Credit Hours: 3.00 - 4.00

- Elective - Credit Hours: 1.00 (CS 19300 recommended)
- Elective - Credit Hours: 1.00 (CS 19100 recommended)
- Elective - Credit Hours: 1.00

14-16 Credits

Spring 1st Year

- CS 18200 - Foundations Of Computer Science ***
- CS 24000 - Programming In C ***

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

- COM 21700 - Science Writing And Presentation or
- Language Level II - Credit Hours: 3.00 - 4.00

- Elective - Credit Hours: 1.00 - 3.00

14-16 Credits

Fall 2nd Year

- CS 25000 - Computer Architecture ***
- CS 25100 - Data Structures And Algorithms ***

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

- Language level II - Credit Hours: 3.00 - 4.00

- Elective (CS 29100 recommended) - Credit Hours: 1.00

15-17 Credits

Spring 2nd Year

- CS 25200 - Systems Programming ***
- MA 26500 - Linear Algebra or
- MA 35100 - Elementary Linear Algebra
- Elective - Credit Hours: 3.00 (COM 21700 recommended)
- Language level II or Culture course or Diversity course - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00

16 Credits

Fall 3rd Year

- STAT 35000 - Introduction To Statistics or
- STAT 51100 - Statistical Methods
- Elective- Credit Hours: 3.00
- General Education I - Credit Hours: 3.00
- Elective - Credit Hours: 1.00 (CS 39100 recommended)
- CS track requirement - Credit Hours: 3.00 ***
- CS track requirement - Credit Hours: 3.00 **

16 Credits

Spring 3rd Year

- CS track requirement/elective - Credit Hours: 3.00 ***
- CS track elective/requirement - Credit Hours: 3.00 ***
- Great Issues - Credit Hours: 3.00
- General Education II - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Fall 4th Year

- CS track elective - Credit Hours: 3.00 ***
- Lab Science I - Credit Hours: 3.00 - 4.00
- Multidisciplinary Experience/Science, Technology and Society - Credit Hours: 3.00

- General Education III - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Spring 4th Year

- CS track elective - Credit Hours: 3.00 ***
- Lab Science II - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Notes

2.0 Major and Graduation GPA required for Bachelor of Science degree.

***All CS core courses and all track requirements, regardless of department, must be completed with a grade of "C" or higher.

All prerequisites to CS core courses and track requirements, regardless of department, must be completed with a grade of C or higher.

Enrollment in freshman seminar courses CS 19100 and CS 19300 is required with CS 18000. They are not degree requirements. CS 29100 Sophomore Resources Seminar and CS 39100 Junior Resources Seminar are optional but recommended.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Data Science, BS (CS)

About the Program

Majoring in data science at Purdue will place you at the forefront of an emerging field and prepare you for an exciting career at the intersection of computer science and statistics.

Created jointly by Purdue's Department of Computer Science and Department of Statistics, the data science major will open pathways to careers in virtually every area of society, from healthcare, security and sustainability to education, business and economics.

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration

- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Degree Requirements

120 Credits Required

Data Science Major Courses (47-51 credits)

- MA 35100 - Elementary Linear Algebra
- CS 18000 - Problem Solving And Object-Oriented Programming ♦ (*satisfies College of Science Computing and Teambuilding requirements*)
- CS 18200 - Foundations Of Computer Science
- CS 19100 - Freshman Resources Seminar
- CS 25100 - Data Structures And Algorithms
- STAT 41600 - Probability
- STAT 41700 - Statistical Theory

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

- CS 49000 - Topics In Computer Sciences For Undergraduates - Large Scale Data Analysis (LSDA) or
- STAT 49000 - Topics In Statistics For Undergraduates - Large Scale Data Analysis (LSDA)

- CS Elective I - Credit Hours: 3.00
- CS Elective II - Credit Hours: 3.00
- STAT Elective - Credit Hours: 3.00
- Capstone Course or Experience - Credit Hours 0.00 - 3.00

Other Departmental/Program Course Requirements (45-55 credits)

- ENGL 10600 - First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- ENGL 10800 - Accelerated First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- HONR 19903 - Interdisciplinary Approaches In Writing (*satisfies Written Communication and Information Literacy for core*)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*) - must have C or better to meet prerequisite for CS 18200 or
- MA 16500 - Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*) - must have C or better to meet prerequisite for CS 18200)

- MA 16200 - Plane Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*) or
- MA 16600 - Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*)
- Technical Writing - COM 21700 recommended (*may satisfy Oral Communication for core*) select from list - Credit Hours: 3.00
- Technical Presentation - COM 21700 recommended (*may satisfy Oral Communication for core*) select from list - Credit Hours: 3.00
- Language I * - Select three options from list - Credit Hours: 3.00 - 4.00
- Language II * - Select three options from list - Credit Hours: 3.00 - 4.00
- Language and Culture III - (*may satisfy Human Cultures Humanities for core*) select three options from list - Credit Hours: 3.00 - 4.00
- General Education I - (*may satisfy Human Culture Humanities and Behavioral/Social Science for core*) select from list - Credit Hours: 3.00
- General Education II - (*may satisfy Human Culture Humanities and Behavioral/Social Science for core*) -select from list - Credit Hours: 3.00
- General Education III - select from list - Credit Hours: 3.00
- Great Issues - select from list - Credit Hours: 3.00
- Multidisciplinary Experience - (*may satisfy Science, Technology & Society for core*) - select from list - Credit Hours: 1.00 - 3.00
- Teambuilding and Collaboration Experience - (*CS 18000 meets requirement*) Select from list
- Lab Science I selective - (*satisfies Science for core*) - Select from list - Credit Hours: 3.00 - 4.00
- Lab Science II selective - (*may satisfy Science for core*) - Select from list - Credit Hours: 3.00 - 4.00

Electives (14-28 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ *
- CS 19100 - Freshman Resources Seminar
- CS 19300 - Tools

- MA 16100 - Plane Analytic Geometry And Calculus I ♦*or
- MA 16500 - Analytic Geometry And Calculus I ♦*

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00

- Elective - Credit Hours: 1.00

14-16 Credits

Spring 1st Year

- CS 18200 - Foundations Of Computer Science *
- CS 38003 - Python Programming

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00

- General Education I - Credit Hours: 3.00

14-16 Credits

Fall 2nd Year

- STAT 35500 - Statistics For Data Science

- CS 24200 - Introduction To Data Science or
- STAT 24200 - Introduction To Data Science

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

- Language 10200 - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 1.00 - 3.00

14-18 Credits

Spring 2nd Year

- CS 25100 - Data Structures And Algorithms *
- MA 35100 - Elementary Linear Algebra
- STAT 41600 - Probability
- Language 20100/Culture or Diversity course - Credit Hours: 3.00 - 4.00
- Science, Technology, and Society- Credit Hours: 1.00 - 3.00

13-16 Credits

Fall 3rd Year

- CS 37300 - Data Mining And Machine Learning
- STAT 41700 - Statistical Theory
- COM 21700 - Science Writing And Presentation
- General Education II - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Spring 3rd Year

- CS Elective I - Credit Hour 3.00
- STAT Elective - Credit Hours: 3.00
- Great Issues - Credit Hours: 3.00
- General Education III - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Fall 4th Year

- CS 49000 - Topics In Computer Sciences For Undergraduates - Large Scale Data Analytics (LSDA) or
- STAT 49000 - Topics In Statistics For Undergraduates - Large Scale Data Analytics (LSDA)

- CS elective II - Credit Hours: 3.00
- Lab Science I - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Spring 4th Year

- Capstone Experience/Course - Credit Hours: 0.00 - 3.00
- Lab Science II - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

12-16 Credits

Notes

A minimum of 32 semester credits of upper level (30000+) required

2.0 Major and Graduation GPA required for Bachelor of Science degree.

*All CS core courses and all track requirements, regardless of department, must be completed with a grade of "C" or better.

All prerequisites to CS core courses and track requirements, regardless of department, must be completed with a grade of "C" or better.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

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Minor

Computer Science Minor

Application Process

- Students must have completed with a 'C' grade or better both CS 18000 and a Math class as follows:
- CS 18000 (or receive a 4 or a 5 on the AP Computer Science test and pass the CS 18000 test-out exam) **and**
- For the Fall 2016 semester, one of the following courses
 - MA 16100 or MA 16500 or (MA 16010 and MA 16020)

- **or**, prior to the Fall 2016 semester, MA 16300, or MA 16700, or (MA 16010 and MA 16020), or MA 16021
- **or** establish credit for Calculus I through AP credit, Transfer Credit, or credit by exam.

To apply:

1. Complete the CS Minor Application with your advisor.
2. Submit complete and signed application to the administrative assistant in the CS Undergraduate Advising Office (LWSN 1123) between 8:00 am - 12:00 pm, or 1:00 pm - 5:00 pm, Monday through Friday, or to an advisor during their posted non-major walk-in hours. If the application is approved, a minor in Computer Science will be granted upon completion of the following requirements:

- Five (5) CS courses from the list below. AP credit plus CS 180 test out can be used for the minor application as described above, but will not count toward the five required CS courses.
- All courses' pre-requisites must be met in order to enroll in CS courses. Click the link for each course to see the required pre-requisites.
- All courses must be taken at the Purdue West Lafayette campus.
- A minimum grade of 'C' in all CS courses used towards the minor is required. (A 'C-' is not accepted.)
- **Enrollment in all CS courses is subject to space availability.** CS Minors are expected to take CS courses during off-peak sessions. Students are responsible for maintaining an up-to-date minor plan of study, for knowing registration timelines, and for requesting space through the correct process. Computer Science majors are given priority in registering for CS classes.
- CS Minors may take a total of five (5) CS major courses and no more.

Requirements for the Minor (16-18 credits)

Required Courses (10 credits)

- CS 18000 - Problem Solving And Object-Oriented Programming *
- CS 18200 - Foundations Of Computer Science **
- CS 24000 - Programming In C

Elective Courses - Choose Two (6-8 credits)

- CS 25000 - Computer Architecture
- CS 25100 - Data Structures And Algorithms
- CS 25200 - Systems Programming
- CS 30700 - Software Engineering I
- CS 31400 - Numerical Methods
- CS 33400 - Fundamentals Of Computer Graphics
- CS 34800 - Information Systems
- CS 35500 - Introduction To Cryptography
- CS 38100 - Introduction To The Analysis Of Algorithms
- CS 40800 - Software Testing
- CS 44800 - Introduction To Relational Database Systems
- CS 47100 - Introduction to Artificial Intelligence

Notes

- *Students with AP CS credit plus CS 180 test out (as described above) may use their AP credit in place of CS 18000 as a pre-requisite for other CS courses, but AP credit will not count toward the five (5) CS courses. In this case, the student must choose three of the following Elective Courses.
- **Math majors may use MA 37500 in place of CS 18200 as a pre-requisite for other CS courses, but MA 37500 will not count toward the five (5) CS courses. In this case, the student must choose three of the following Elective Courses.

Disclaimer

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The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Pre-Program

Data Science First Year (CS)

Data Science First Year (28-32 credits)

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ * (satisfies College of Science Computing and Teambuilding requirements)
- CS 18200 - Foundations Of Computer Science *
- CS 19100 - Freshman Resources Seminar
- CS 19300 - Tools
- CS 38003 - Python Programming

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ * or
- MA 16200 - Plane Analytic Geometry And Calculus II

- MA 16500 - Analytic Geometry And Calculus I ♦ * or
- MA 16600 - Analytic Geometry And Calculus II

- Elective - Credit Hours: 1.00
- General Education I - Credit Hours: 3.00

Program Requirements

Fall 1st Year

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ *
- CS 19100 - Freshman Resources Seminar
- CS 19300 - Tools
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00
- MA 16100 - Plane Analytic Geometry And Calculus I ♦ * or
- MA 16500 - Analytic Geometry And Calculus I ♦ *
- Elective - Credit Hours: 1.00

14-16 Credits

Spring 1st Year

- CS 18200 - Foundations Of Computer Science
- CS 38003 - Python Programming
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- General Education I - Credit Hours: 3.00

14-16 Credits

Notes

* All CS core courses and all track requirements, regardless of department, must be completed with a grade of "C" or better.

All prerequisites to CS core courses and track requirements, regardless of department, must be completed with a grade of "C" or better.

Department of Earth, Atmospheric, and Planetary Sciences

Overview

The Department of Earth, Atmospheric, and Planetary Sciences is dedicated to the scientific study of a myriad of spatial and temporal scales of physical, chemical, and dynamical processes that range from such seemingly diverse events as continental drift to asteroid impacts to tornadoes.

The new millennium has brought even greater challenges to unravel the mysteries of the past, present and future states of a holistic Earth system that affects our socio-economic well-being, as well as the delicate balance of weather, climate, and earth processes.

EAPS is the multidisciplinary department of the College of Science, requiring the use of mathematics, physics, chemistry, statistics, and computer sciences to research problems; along with state of the art computer and laboratory facilities for calculation, visualization, and experimentation. Our faculty, students and staff are dedicated to the department's mission and strategic plan and we hope that you enjoy your virtual tour of our world.

Indrajeet Chaubey
Department Head and Professor

Faculty

Department of Earth, Atmospheric, and Planetary Sciences Website

Contact Information

Earth, Atmospheric, and Planetary Sciences Department
550 Stadium Mall Drive
Purdue University
West Lafayette, IN 47907-2051

Phone: 765 494-3258

Fax: 765 496-1210

Graduate Information

For Graduate Information please see Earth, Atmospheric, and Planetary Sciences Graduate Program Information.

Baccalaureate

Atmospheric Science, BS

About the Program

Atmospheric science focuses on mathematics, physics, chemistry, computer science, and statistics as well as atmospheric science. In this major students have several electives credits which they can use to broaden and enhance their educational experience and to specialize in the areas of weather forecasting, research, environmental monitoring, business, or broadcasting. Students can also participate in real-world forecasting, field work, and related opportunities. Research is an integral part of the program, and the Earth, Atmospheric, and Planetary Sciences (EAPS) Department has an excellent faculty to student ratio which allows students to have one-to-one interaction with their professors.

Atmospheric Science/Meteorology Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (37 credits)

Required Major Courses (37 credits)

- EAPS 11700 - Introduction To Atmospheric Science ♦ (*satisfies Science for core*)
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences ♦
- EAPS 22500 - Science Of The Atmosphere ♦ (*satisfies Science for core*)
- EAPS 22700 - Introduction To Atmospheric Observation And Measurements
- EAPS 32000 - Physics Of Climate
- EAPS 42100 - Atmospheric Thermodynamics
- EAPS 43100 - Synoptic Laboratory I
- EAPS 42200 - Atmospheric Dynamics I
- EAPS 42300 - Atmospheric Dynamics II
- EAPS 43200 - Synoptic Laboratory II
- EAPS 43300 - Synoptic Lab III
- EAPS 53200 - Atmospheric Physics I
- EAPS 50900 - Data Analysis Techniques In Earth And Atmospheric Sciences
- EAPS 49700 - Earth And Atmospheric Sciences Undergraduate Readings And Research Credit Hours: 3.00
- EAPS 100-level Earth System Elective - Credit Hours: 3.00 ♦

Other Departmental/Program Course Requirements (65-74 credits)

- COM 21700 - Science Writing And Presentation (*satisfies Oral Communication for core*)
- CS 17700 - Programming With Multimedia Objects (*satisfies Teambuilding & Collaboration Experience*)
- MA 26600 - Ordinary Differential Equations (*satisfies Quantitative Reasoning for core*)
- PHYS 17200 - Modern Mechanics ♦ (*satisfies Science for core and Teambuilding & Collaboration Experience*)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*) or
- MA 16500 - Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*)

- MA 16200 - Plane Analytic Geometry And Calculus II ♦ (*satisfies Quantitative Reasoning for core*) or
- MA 16600 - Analytic Geometry And Calculus II ♦ (*satisfies Quantitative Reasoning for core*)

- MA 26100 - Multivariate Calculus (*satisfies Quantitative Reasoning for core*) or
- MA 27101 - Honors Multivariate Calculus

- CHM 11500 - General Chemistry ♦ (*satisfies Science for core*) or
- CHM 12500 - Introduction To Chemistry I

- CHM 11600 - General Chemistry ♦ (*satisfies Science for core*) or
- CHM 12600 - Introduction To Chemistry II

- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science for core*) or

- PHYS 24100 - Electricity And Optics and
- PHYS 25200 - Electricity And Optics Laboratory
- ENGL 10600 - First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (*satisfies Written Communication and Information Literacy for core*)
- Language I Selective - Credit Hours: 3.00 - 4.00
- Language II Selective - Credit Hours: 3.00 - 4.00
- Language III/Culture/Diversity Selective - Credit Hours: 3.00 - 4.00
- General Education I Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Behavioral/Social Science for core*)
- General Education II Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Humanities for core*)
- General Education III Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Behavioral/Social Science for core*)
- Great Issues Selective - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 3.00 (*satisfied by Science, Technology, & Society for core*)
- **Statistics Selective** (*satisfies Information Literacy for core*)
- EAPS 31000 - Introductory Statistics For Geosciences (recommended) or
- STAT 30100 - Elementary Statistical Methods or
- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

Electives (9-18 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

<http://www.eaps.purdue.edu>

Fall 1st Year

- EAPS 11700 - Introduction To Atmospheric Science ♦*
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences ♦
- CHM 11500 - General Chemistry ♦*

- MA 16100 - Plane Analytic Geometry And Calculus I ♦* or
- MA 16500 - Analytic Geometry And Calculus I ♦*

- ENGL 10600 - First-Year Composition * or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition *

15-17 Credits

Spring 1st Year

- CHM 11600 - General Chemistry ♦*

- MA 16200 - Plane Analytic Geometry And Calculus II ♦* or
- MA 16600 - Analytic Geometry And Calculus II ♦*

- EAPS 100-level Earth System Elective - Credit Hours: 3.00 ♦
- Language I Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15-16 Credits

Fall 2nd Year

- EAPS 22500 - Science Of The Atmosphere ♦*
- EAPS 22700 - Introduction To Atmospheric Observation And Measurements
- PHYS 17200 - Modern Mechanics ♦*

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus *

- Language III/Culture/Diversity Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15-16 Credits

Spring 2nd Year

- EAPS 32000 - Physics Of Climate
- EAPS 43100 - Synoptic Laboratory I
- MA 26600 - Ordinary Differential Equations *
- PHYS 27200 - Electric And Magnetic Interactions *
- Language III/Culture/Diversity Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15 Credits

Fall 3rd Year

- EAPS 42100 - Atmospheric Thermodynamics
- EAPS 42200 - Atmospheric Dynamics I
- EAPS 43200 - Synoptic Laboratory II
- CS 17700 - Programming With Multimedia Objects
- COM 21700 - Science Writing And Presentation *

14 Credits

Spring 3rd Year

- EAPS 42300 - Atmospheric Dynamics II
- EAPS 43300 - Synoptic Lab III
- EAPS 53200 - Atmospheric Physics I
- Statistics Selective (EAPS 31000 recommended) - Credit Hours: 3.00 *
- General Education I Selective - Credit Hours: 3.00 *
- Free Elective - Credit Hours: 3.00

16 Credits

Fall 4th Year

- EAPS 50900 - Data Analysis Techniques In Earth And Atmospheric Sciences
- EAPS 49700 - Earth And Atmospheric Sciences Undergraduate Readings And Research Credit Hours: 3.00
- Great Issues Selective - Credit Hours: 3.00
- General Education II Selective - Credit Hours: 3.00 *
- Elective - Credit Hours: 3.00

15 Credits

Spring 4th Year

- Multidisciplinary Experience Selective - Credit Hours: 3.00 *

- General Education III Selective - Credit Hours: 3.00 *
- Elective - Credit Hours:3.00
- Elective - Credit Hours:3.00
- Elective - Credit Hours:3.00

15 Credits

Notes

*Satisfies a University Core Requirement

2.0 Graduation GPA required for Bachelor of Science degree

2.0 average in EAPS major classes required to graduate

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Environmental Geoscience, BS

About the Program

The EAPS Environmental Geoscience major offers an interdisciplinary curriculum that immerses students in the fundamentals of geology, chemistry, atmospheric science, biology, math, and physics. This coursework prepares students so they can help solve challenging environmental problems such as climate change, emerging pollutants, shrinking and shifting energy resources, food production, and ecology. The Environmental Geoscience major at Purdue is flexible, allowing students to create their own coursework focus based on their particular scientific passion: air quality, soil and sediments, or hydrology. Undergraduate research is required in this major, and students have the opportunity to work directly with professors and industry leaders. Graduates develop quantitative problem-solving skills that make them highly competitive for further graduate school studies related to environmental science or careers in environmental monitoring, consulting, and decision support for environmental public policy.

Environmental Geoscience Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
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Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click [here](#).

Departmental/Program Major Courses (54 credits)

Required Major Courses (54 credits)

- ASM 54000 - Geographic Information System Application
- EAPS 11800 - Introduction To Earth Sciences ♦
- EAPS 10900 - The Dynamic Earth ♦
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences
- EAPS 31500 - Biogeochemistry
- EAPS 30900 - Computer-Aided Analysis For Geosciences
- EEE 36000 - Environmental And Ecological Engineering Laboratory

- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- POL 22300 - Introduction To Environmental Policy

- EAPS 20000 - Water World: Processes And Challenges In Global Hydrology ^ or
- AGRY 33700 - Environmental Hydrology

- EAPS 38500 - Principles Of Engineering Geology or
- EEE 35500 - Engineering Environmental Sustainability

- EAPS 49700 - Earth And Atmospheric Sciences Undergraduate Readings And Research - Credit Hours: 3.00 or
- EAPS 41900 - Internship In Environmental Geosciences - Credit Hours: 3.00

- Environmental Selective^ - Credit Hours: 15.00
- Environmental Selective with Lab^^ - Credit Hours: 8.00

Other Departmental/Program Course Requirements (54-63 credits)

- COM 21700 - Science Writing And Presentation (*satisfies Oral Communication for core*)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*) or
- MA 16500 - Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*)

- MA 16200 - Plane Analytic Geometry And Calculus II ♦ (*satisfies Quantitative Reasoning for core*) or
- MA 16600 - Analytic Geometry And Calculus II ♦ (*satisfies Quantitative Reasoning for core*)

- CHM 11500 - General Chemistry ♦ (*satisfies Science for core*) or
- CHM 12500 - Introduction To Chemistry I

- CHM 11600 - General Chemistry ♦ (*satisfies Science for core*) or
- CHM 12600 - Introduction To Chemistry II (*satisfies Science for core and Teaming & Collaboration Experience*)

- ENGL 10600 - First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (*satisfies Written Communication and Information Literacy for core*)
- Language I Selective - Credit Hours: 3.00-4.00
- Language II Selective - Credit Hours: 3.00-4.00
- Language III/Culture/Diversity Selective - Credit Hours: 3.00-4.00
- General Education I Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Behavioral/Social Science for core*)
- General Education II Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Humanities for core*)
- General Education III Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Behavioral/Social Science for core*)
- Great Issues Selective - Credit Hours: 3.00 (EAPS 36400 or EAPS 32700 recommended)
- Multidisciplinary Experience Selective - Credit Hours: 2.00-3.00 (BIOL 12100 recommended) (*satisfies Science, Technology, & Society for core*)

Physics Selective

- PHYS 22000 - General Physics or
- PHYS 21800 - General Physics or
- PHYS 23300 - Physics For Life Sciences I ♦ [if two semesters of Biology] or
- PHYS 17200 - Modern Mechanics ♦

Computing Selective (*satisfies Teaming & Collaboration Experience*)

- CS 17700 - Programming With Multimedia Objects (recommended) or
- CS 15800 - C Programming or
- CS 18000 - Problem Solving And Object-Oriented Programming

Statistics Selective (*could satisfy Information Literacy for core*)

- EAPS 31000 - Introductory Statistics For Geosciences (recommended) or
- STAT 30100 - Elementary Statistical Methods or
- STAT 35000 - Introduction To Statistics (*satisfies Information Literacy Selective for core*) or
- STAT 50300 - Statistical Methods For Biology (*satisfies Information Literacy Selective for core*) or
- STAT 51100 - Statistical Methods

Electives (3-12 credits)

Additional Degree Requirements

Environmental Geoscience Supplemental Information

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society

- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- EAPS 11800 - Introduction To Earth Sciences ♦
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences ♦
- CHM 11500 - General Chemistry ♦
- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

15-17 Credits

Spring 1st Year

- MA 16200 - Plane Analytic Geometry And Calculus II ♦ or
- MA 16600 - Analytic Geometry And Calculus II ♦
- EAPS 10900 - The Dynamic Earth ♦
- CHM 11600 - General Chemistry ♦
- Language I Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15 Credits

Fall 2nd Year

- General Education I Selective - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 3.00
- Environmental Selective - Credit Hours: 3.00 ^
- Environmental Selective with Lab - Credit Hours: 3.00 ^^

- Language II Selective - Credit Hours: 3.00

15 Credits

Spring 2nd Year

- AGRY 33700 - Environmental Hydrology
- Physics Selective - Credit Hours: 3.00 ♦
- Statistics Selective - Credit Hours: 3.00
- General Education II Selective - Credit Hours: 3.00
- Language III Selective/Culture/Diversity - Credit Hours: 3.00

16 Credits

Fall 3rd Year

- EEE 36000 - Environmental And Ecological Engineering Laboratory
- Environmental Selective^ - Credit Hours: 3.00
- Environmental Selective^ - Credit Hours: 3.00
- Computing Selective - Credit Hours: 3.00

16 Credits

Spring 3rd Year

- EAPS 30900 - Computer-Aided Analysis For Geosciences
- Environmental Selective with Lab - Credit Hours: 3.00 ^^
- Elective - Credit Hours: 3.00
- COM 21700 - Science Writing And Presentation

- EAPS 49700 - Earth And Atmospheric Sciences Undergraduate Readings And Research or
- EAPS 41900 - Internship In Environmental Geosciences

16 Credits

Fall 4th Year

- EAPS 39100 - Topics In Earth And Atmospheric Sciences - Biogeochemistry
- ASM 54000 - Geographic Information System Application
- Environmental Selective - Credit Hours: 3.00^
- General Education III Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Spring 4th Year

- Elective - Credit Hours: 3.00
- EAPS 38500 - Principles Of Engineering Geology
- Great Issues Selective - EAPS 36400 or EAPS 32700 recommended
- EEE 35500 - Engineering Environmental Sustainability

- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- POL 22300 - Introduction To Environmental Policy

15 Credits

Notes

- ^Environmental Selectives for advanced courses and specializations
- ^^Environmental Selectives with Labs for advanced courses and specializations
- 2.0 Graduation GPA required for Bachelor of Science degree
- 2.0 average in EAPS major courses required to graduate

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Geology and Geophysics, BS

About the Program

Within the geology and geophysics major, students study math, chemistry, physics, and enroll in coursework in physical and historical geology, earth materials, surface processes, plate tectonics, structural geology, sedimentation and stratigraphy, computer-aided analysis, field methods, and a summer geology field camp. Students have a number of electives which can be used to take advanced coursework in seismology, crustal tectonics, engineering geology, hydrogeology, and a wide variety of

other topics relevant to geologists. Faculty led classes, labs, and field experiences as well as undergraduate research (encouraged) are all components of this program.

Geology and Geophysics Website

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Degree Requirements

120 Credits Required

Departmental/Program Major Courses (48 credits)

Required Major Courses (48 credits)

- EAPS 11800 - Introduction To Earth Sciences ♦
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences ♦
- EAPS 24300 - Earth Materials I ♦ (*satisfies Science Selective for core*)
- EAPS 35400 - Plate Tectonics
- EAPS 35300 - Earth Surface Processes
- EAPS 47400 - Sedimentation And Stratigraphy
- EAPS 35200 - Structural Geology
- EAPS 39000 - Geologic Field Methods
- EAPS 30900 - Computer-Aided Analysis For Geosciences

- EAPS 10900 - The Dynamic Earth ♦ (*satisfies Science Selective for core*) or
- EAPS 11200 - Earth Through Time ♦ (*satisfies Science Selective for core*)

- EAPS 49000 - Field Geology In Rocky Mountains or
- EAPS Geology Field Experience (30000-level) - Credit Hours: 6.00

- EAPS Professional Elective (EAPS 30000:59900) - Credit Hours: 3.00
- EAPS Professional Elective (EAPS 30000:59900) - Credit Hours: 3.00
- Science/Engineering Elective (Level 20000:59900) -Credit Hours: 3.00
- Science/Engineering Elective (Level 20000:59900) - Credit Hours: 3.00

Other Departmental/Program Course Requirements (58-67 credits)

- COM 21700 - Science Writing And Presentation (*satisfies Oral Communication for core*)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*) or
- MA 16500 - Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*)

- MA 16200 - Plane Analytic Geometry And Calculus II ♦ (*satisfies Quantitative Reasoning for core*) or
- MA 16600 - Analytic Geometry And Calculus II ♦ (*satisfies Quantitative Reasoning for core*)

- CHM 11500 - General Chemistry ♦ (*satisfies Science Selective for core*) or
- CHM 12500 - Introduction To Chemistry I

- CHM 11600 - General Chemistry ♦ (*satisfies Science Selective for core*) or
- CHM 12600 - Introduction To Chemistry II

- PHYS 17200 - Modern Mechanics ♦ (*satisfies Science for core and Teambuilding & Collaboration Experience*) or

- PHYS 21800 - General Physics ♦ (*satisfies Science for core and Teambuilding & Collaboration Experience*) or
- PHYS 22000 - General Physics

- PHYS 22100 - General Physics (*satisfies Science Selective for core*) or
- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science Selective for core*) or
- PHYS 21900 - General Physics II or
- PHYS 24100 - Electricity And Optics
AND
- PHYS 25200 - Electricity And Optics Laboratory

- ENGL 10600 - First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (*satisfies Written Communication and Information Literacy for core*)

- Language I Selective - Credit Hours: 3.00-4.00
- Language II Selective - Credit Hours: 3.00-4.00
- Language III/Culture/Diversity Selective - Credit Hours: 3.00-4.00
- General Education I Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Behavioral/Social Science for core*)
- General Education II Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Humanities for core*)
- General Education III Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Behavioral/Social Science for core*)
- Great Issues Selective - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 3.00 (*satisfied by Science, Technology, & Society for core*)

- **Computing Selective:** (*satisfies Teambuilding & Collaboration Experience*)
- CS 17700 - Programming With Multimedia Objects (*recommended*) or
- CS 15800 - C Programming or
- CS 18000 - Problem Solving And Object-Oriented Programming

- **Statistics Selective:** (*could satisfy Information Literacy for core*)
- EAPS 31000 - Introductory Statistics For Geosciences (*recommended*)
- STAT 30100 - Elementary Statistical Methods or
- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

Electives (5-14 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication

- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- EAPS 11800 - Introduction To Earth Sciences ♦
- CHM 11500 - General Chemistry ♦
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences ♦
- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

15-17 Credits

Spring 1st Year

- CHM 11600 - General Chemistry ♦
- EAPS 11200 - Earth Through Time ♦ or
- EAPS 10900 - The Dynamic Earth ♦
- MA 16200 - Plane Analytic Geometry And Calculus II ♦ or
- MA 16600 - Analytic Geometry And Calculus II ♦
- Language I Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 1.00

15-16 Credits

Fall 2nd Year

- EAPS 24300 - Earth Materials I ♦
- PHYS 17200 - Modern Mechanics ♦ or

- PHYS 22000 - General Physics ♦
- Language II Selective - Credit Hours: 3.00-4.00
- Science/Engineering Elective (Level 20000:59900) - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15 Credits

Spring 2nd Year

- EAPS 35400 - Plate Tectonics
- PHYS 27200 - Electric And Magnetic Interactions or
- PHYS 22100 - General Physics
- Science/Engineering Elective (Level 20000:59900) - Credit Hours: 3.00
- Language III/Culture/Diversity Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 2.00

15 Credits

Fall 3rd Year

- EAPS 35300 - Earth Surface Processes
- EAPS 47400 - Sedimentation And Stratigraphy
- Computing Selective - Credit Hours: 3.00-4.00
- General Education I selective - Credit Hours: 3.00

14 Credits

Spring 3rd Year

- EAPS 35200 - Structural Geology
- EAPS 39000 - Geologic Field Methods
- EAPS 30900 - Computer-Aided Analysis For Geosciences
- Statistics Selective - Credit Hours: 3.00

12 Credits

Summer

- EAPS 49000 - Field Geology In Rocky Mountains or
- EAPS Geology Field Experience (30000-level) - Credit Hours: 6.00

6 Credits

Fall 4th Year

- EAPS Professional Elective (EAPS 30000:59900) - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 3.00
- Great Issues Selective - Credit Hours: 3.00
- General Education II Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Spring 4th Year

- COM 21700 - Science Writing And Presentation
- EAPS Professional Elective (EAPS 30000:59900) - Credit Hours: 3.00
- General Education III Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

13 Credits

Notes

- 2.0 Graduation GPA required for Bachelor of Science degree
- 2.0 average in EAPS major classes required to graduate

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Planetary Sciences, BS

About the Program

Planetary sciences is a multidisciplinary study of planetary dynamics and includes course work in planetary geology, planetary atmospheres, planetary physics, spacecraft design and operation, and astronomy with elective options in astrobiology, impact cratering, and related topics with which to focus their study. All students receive a strong background in math, chemistry, physics, computer science, geophysics, and remote sensing and are encouraged to get involved in undergraduate research in this unique program.

Planetary Sciences Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education

- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click [here](#).

Departmental/Program Major Courses (40 credits)

Required Major Courses (40 credits)

- EAPS 10500 - The Planets ♦ (*satisfies Science for core*)
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences ♦
- ASTR 36300 - The Solar System
- EAPS 55600 - Planetary Geology
- EAPS 44500 - Spacecraft Design
- EAPS 39500 - Astrobiology

- EAPS 11700 - Introduction To Atmospheric Science ♦ (*satisfies Science for core*) or
- EAPS 11800 - Introduction To Earth Sciences ♦

- EAPS 57700 - Remote Sensing Of The Planets or
- EAPS 30900 - Computer-Aided Analysis For Geosciences

- EAPS 10000:59900 - Credit Hours: 3.00 (*could satisfy Science, Technology, & Society for core*)
- Science/Engineering Elective based on areas of interest - Credit Hours: 3.00
- Science/Engineering Elective based on areas of interest - Credit Hours: 3.00
- Planetary Science Selective^ - Credit Hours: 9.00 total

Other Departmental/Program Course Requirements (66-75 credits)

- COM 21700 - Science Writing And Presentation (*satisfies Oral Communication for core*)
- MA 26100 - Multivariate Calculus ♦ (*satisfies Quantitative Reasoning for core*)
- MA 26200 - Linear Algebra And Differential Equations (*satisfies Quantitative Reasoning for core*)
- PHYS 17200 - Modern Mechanics ♦ (*satisfies Science for core and Teambuilding & Collaboration Experience*)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*) or
- MA 16500 - Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*)

- MA 16200 - Plane Analytic Geometry And Calculus II ♦ (*satisfies Quantitative Reasoning for core*) or
- MA 16600 - Analytic Geometry And Calculus II ♦ (*satisfies Quantitative Reasoning for core*)

- CHM 11500 - General Chemistry ♦ (*satisfies Science for core*) or
- CHM 12500 - Introduction To Chemistry I
- CHM 11600 - General Chemistry ♦ (*satisfies Science for core*) or
- CHM 12600 - Introduction To Chemistry II
- PHYS 27200 - Electric And Magnetic Interactions (*satisfies Science Selective for core*) or
- PHYS 24100 - Electricity And Optics
AND
- PHYS 25200 - Electricity And Optics Laboratory (*satisfies Teambuilding & Collaboration Experience*)
- ENGL 10600 - First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- ENGL 10800 - Accelerated First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity

Computing Selective

- CS 17700 - Programming With Multimedia Objects (*recommended*) or
- CS 15800 - C Programming or
- CS 18000 - Problem Solving And Object-Oriented Programming

Statistics Selective (*could satisfy Information Literacy for core*)

- EAPS 31000 - Introductory Statistics For Geosciences (Recommended; only offered Spring) or
- STAT 30100 - Elementary Statistical Methods or
- STAT 35000 - Introduction To Statistics or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods

- Language I Selective - Credit Hours: 3.00-4.00
- Language II Selective - Credit Hours: 3.00-4.00
- Language III/Culture/Diversity Selective - Credit Hours: 3.00-4.00
- General Education I Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Behavioral/Social Science for core*)
- General Education II Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Humanities for core*)
- General Education III Selective - Credit Hours: 3.00 (*could satisfy Human Cultures: Behavioral/Social Science for core*)
- Great Issues Selective - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 3.00 (*satisfied by Science, Technology & Society for core*)

Electives (5-14 credits)

Additional Requirements

Planetary Science Supplemental Information

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science

- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, [click here](#).

Program Requirements

Fall 1st Year

- CHM 11500 - General Chemistry ♦
- EAPS 13700 - Freshman Seminar In Earth And Atmospheric Sciences ♦
- EAPS 11700 - Introduction To Atmospheric Science ♦ or
- EAPS 11800 - Introduction To Earth Sciences ♦
- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity

15-17 Credits

Spring 1st Year

- CHM 11600 - General Chemistry ♦
- EAPS 10500 - The Planets ♦
- MA 16200 - Plane Analytic Geometry And Calculus II ♦ or
- MA 16600 - Analytic Geometry And Calculus II ♦
- Language I Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 1.00

15-16 Credits

Fall 2nd Year

- MA 26100 - Multivariate Calculus ♦
- PHYS 17200 - Modern Mechanics ♦
- General Education I Selective - Credit Hours: 3.00
- Language II Selective - Credit Hours: 3.00-4.00

14 Credits

Spring 2nd Year

- MA 26200 - Linear Algebra And Differential Equations
- PHYS 27200 - Electric And Magnetic Interactions
- EAPS 10000:59900 - Credit Hours: 3.00
- General Education II Selective - Credit Hours: 3.00
- Language III/Culture/Diversity Selective - Credit Hours: 3.00-4.00

17 Credits

Fall 3rd Year

- ASTR 36300 - The Solar System
- EAPS 55600 - Planetary Geology
- Planetary Science Selective[^] - Credit Hours: 3.00
- Computing Selective (CS 17700 recommended) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16 Credits

Spring 3rd Year

- COM 21700 - Science Writing And Presentation
- Planetary Science Selective[^] - Credit Hours: 3.00
- Great Issues Selective - Credit Hours: 3.00
- Statistics Selective (EAPS 31000 recommended) - Credit Hours: 3.00
- Science/Engineering Elective - Credit Hours: 3.00

15 Credits

Fall 4th Year

- EAPS 39500 - Astrobiology
- Planetary Science Selective[^] - Credit Hours: 3.00
- Multidisciplinary Experience Selective - Credit Hours: 3.00
- General Education III Selective - Credit Hours: 3.00

- Elective - Credit Hours: 3.00

15 Credits

Spring 4th Year

- EAPS 44500 - Spacecraft Design
- EAPS 57700 - Remote Sensing Of The Planets or
- EAPS 30900 - Computer-Aided Analysis For Geosciences
- Science/Engineering Elective - Credit Hours: 3.00
- Elective - Credit Hours 3.00
- Elective - Credit Hours: 1.00

13 Credits

Notes

- 2.0 Graduation GPA required for Bachelor of Science degree
- 2.0 average in EAPS major courses required to graduate

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Minor

Earth, Atmospheric, and Planetary Sciences Minor

Requirements for the Minor (18 credits)

Required Course (3 credits)

- EAPS 10900 - The Dynamic Earth or
- EAPS 11700 - Introduction To Atmospheric Science or
- EAPS 11800 - Introduction To Earth Sciences

Additional EAPS Coursework (15 credits)

- One EAPS 10000-level or higher course - Credit Hours: 3.00
- One EAPS 20000-level or higher course - Credit Hours: 3.00
- Three EAPS 30000-level or higher courses - Credit Hours: 9.00

Notes

- Credit allowed in no more than one EAPS 30100, 32700, 37500, 36000, or 36400 towards minor requirements
- No credit allowed in any EAPS 19100, 39100, or 59100 towards minor requirements
- No more than three (3) credits of EAPS 49700 towards minor requirements
- All courses for this minor must be taken at Purdue University West Lafayette

Sample Pathways

Atmospheric Science

- EAPS 10600 - Geosciences In The Cinema
- EAPS 11700 - Introduction To Atmospheric Science
- EAPS 22100 - Survey Of Atmospheric Science
- EAPS 32500 - Aviation Meteorology
- EAPS 32700 - Climate, Science And Society
- EAPS 42000 - Global Change Modeling

Environmental

- EAPS 10900 - The Dynamic Earth
- EAPS 11800 - Introduction To Earth Sciences
- EAPS 20000 - Water World: Processes And Challenges In Global Hydrology
- EAPS 31500 - Biogeochemistry
- EAPS 36400 - Natural Hazards: Science And Society
- EAPS 38500 - Principles Of Engineering Geology

Geology

- EAPS 11600 - Earthquakes And Volcanoes
- EAPS 11800 - Introduction To Earth Sciences
- EAPS 24300 - Earth Materials I
- EAPS 35300 - Earth Surface Processes

- EAPS 35400 - Plate Tectonics
- EAPS 37500 - Great Issues - Fossil Fuels, Energy And Society

Planetary Science

- EAPS 10500 - The Planets
- EAPS 11800 - Introduction To Earth Sciences
- EAPS 24300 - Earth Materials I
- EAPS 39500 - Astrobiology
- EAPS 55600 - Planetary Geology
- EAPS 57700 - Remote Sensing Of The Planets

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Department of Mathematics

Overview

The Department of Mathematics is one of seven departments making up Purdue's College of Science. The Department has an international reputation as an outstanding center for mathematical education, scholarship and research. Together with visiting researchers, its 65 professors provide it with active involvement in current developments in many major areas of mathematics. Faculty research interests can be found in the Faculty Research Areas list or in our Faculty directory.

The Department offers the Bachelor of Science, Master of Science and Doctor of Philosophy degrees. Also, the Department is closely associated with other programs, including Actuarial Science, Statistics, and Computer Science.

Please explore our website or contact us directly for more information about our undergraduate or graduate programs, faculty, research, job opportunities or information on how to support us. The annual department newsletter, PURview, is a good place to read about Departmental news.

Actuarial Science Program

The Purdue Actuarial Science Program is an interdisciplinary program offered jointly by the Department of Mathematics and Department of Statistics.

The program offers a major in Actuarial Science that prepares students for an actuarial career as well as providing complete preparation for the first five exams set by the Society of Actuaries and the Casualty Actuarial Society. Students receive an Actuarial Science Degree, a Statistics Degree, and a Management Minor. We do not offer graduate degrees in Actuarial Science. For more information contact Julie Morris.

Faculty

Department of Mathematics

Program Information

- [Admissions Information \(Includes application forms and online application\)](#)
- [Actuarial Sciences Faculty](#)
- [Purdue Exam Awards \(and Application\)](#)
- [SOA Exam Applications](#)
- [Purdue Actuarial Club](#)

Links

- BeAnActuary.org
- Actuary.com
- [Society of Actuaries](#)
- [Casualty Actuarial Society](#)
- [American Academy of Actuaries](#)
- [Conference of Consulting Actuaries](#)
- [American Society of Pension Professionals & Actuaries](#)
- [Canadian Institute of Actuaries](#)
- [Institute of Actuaries \(UK\)](#)
- [International Actuarial Association \(IAA\)](#)
- [Purdue Department of Statistics](#)
- [Purdue Department of Mathematics](#)
- [Undergraduate Mathematics Information](#)
- [Undergraduate Statistics Information](#)

Contact Information

The Department's Main Office (Room 835 of the MATH building) is open from eight am to five pm on all weekdays, except University holidays. The main office is closed from 12 to 1 p.m. in the summer. A phone number for the department is (765) 494-1901. The full address is:

Department of Mathematics
Purdue University
150 North University Street
West Lafayette, Indiana 47907-2067

Graduate Information

For Graduate Information please see [Mathematics Graduate Program Information](#) .

Baccalaureate

Actuarial Science Honors, BS

About the Program

Actuarial Science is a joint program of Mathematics and Statistics that emphasizes course work in Mathematics, Statistics, Economics, and Management. Students can prepare for four to five of the nine course exams to become an actuary and also will be eligible for all three VEEs (Validation by Educational Experience) upon successful completion of all required and recommended courses. In addition, students also earn a second major in Statistics and most also earn a minor in Management.

Actuarial Science Website

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Degree Requirements

120 Credits Required

Departmental/Program Major Courses (64-67 credits)

Required Major Courses (64-67 credits)

Students must earn a 2.5 average GPA among required MA/STAT/MGMT/ECON courses excluding Calculus I, II, III, and STAT 35000 AND A or B in major courses excluding MGMT 20000 and 20100 AND 3.5 Average GPA in major courses marked with a • and pass two SOA exams.

- MA 35100 - Elementary Linear Algebra
- MA 37300 - Financial Mathematics (satisfies Multidisciplinary Experience) ♦
- STAT 47201 - Actuarial Models- Life Contingencies •
- STAT 41700 - Statistical Theory •
- STAT 47301 - Introduction To Arbitrage-Free Pricing Of Financial Derivatives •
- MA 36600 - Ordinary Differential Equations
- STAT 47901 - Short Term Actuarial Models •
- STAT 51200 - Applied Regression Analysis
- STAT 42000 - Introduction To Time Series
- MGMT 20000 - Introductory Accounting
- MGMT 20100 - Management Accounting I
- MGMT 31000 - Financial Management
- MGMT 41100 - Investment Management
- ECON 25100 - Microeconomics (satisfies General Education Option)
- ECON 25200 - Macroeconomics

- MA 41600 - Probability ♦ or
- STAT 41600 - Probability ♦

- Calculus I Selective - MA 16100 or MA 16500 (satisfies Quantitative Reasoning for core) - Credit Hours: 4.00 - 5.00 ♦
- Calculus II Selective -MA 16200 or MA 16600 (satisfies Quantitative Reasoning for core) - Credit Hours: 4.00 - 5.00
- Calculus III Selective - MA 26100 or MA 27101 (satisfies Quantitative Reasoning for core) - Credit Hours: 4.00 - 5.00

Program Requirement (0 credits)

Documentation of passing two exams given by the Society of Actuaries

- Exam 1 - Credit Hours: 0.00
- Exam 2 - Credit Hours: 0.00

Other Departmental/Program Course Requirements (27-50 credits)

- STAT 35000 - Introduction To Statistics
- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Laboratory Science I Option (satisfies Science for core) - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option (satisfies Science for core) - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
- Great Issues Option - Credit Hours: 3.00
- Multidisciplinary Experience* (Select courses COULD satisfy Science, Technology, and Society for core) - met within major

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

Electives (3-29 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, [click here](#).

Program Requirements

Fall 1st Year

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

- MA 17000 - Introduction To Actuarial Science or
- STAT 17000 - Introduction To Actuarial Science or
- Elective - Credit Hours: 2.00

- Calculus I Option - Credit Hours: 4.00 - 5.00 ♦
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00

15-18 Credits

Spring 1st Year

- MA 37300 - Financial Mathematics ♦
- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing Option (CS 17700 & meets Teambuilding & Collaboration) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 1.00

14-17 Credits

Fall 2nd Year

- MGMT 20000 - Introductory Accounting
- ECON 25100 - Microeconomics
- STAT 35000 - Introduction To Statistics
- Calculus III Option - Credit Hours: 4.00 - 5.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00

16-17 Credits

Spring 2nd Year

- MA 35100 - Elementary Linear Algebra
- MGMT 20100 - Management Accounting I
- COM 21700 - Science Writing And Presentation (Satisfies Technical Writing Option and Technical Presenting Option)

- MA 41600 - Probability ♦ or

- STAT 41600 - Probability ♦
- Elective (STAT 25000 RECOMMENDED) - Credit Hours: 2.00 - 3.00

15-18 Credits

Fall 3rd Year

- STAT 47201 - Actuarial Models- Life Contingencies •
- STAT 41700 - Statistical Theory •
- MGMT 31000 - Financial Management
- ECON 25200 - Macroeconomics
- Laboratory Science I Option - Credit Hours: 3.00 - 4.00

16-17 Credits

Spring 3rd Year

- STAT 47301 - Introduction To Arbitrage-Free Pricing Of Financial Derivatives •
- Laboratory Science II Option - Credit Hours: 3.00 -4.00
- General Education I Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00
- Elective (recommended - STAT 47500 Life Contingencies II Credit Hours: 2.00

16-17 Credits

Fall 4th Year

- MA 36600 - Ordinary Differential Equations
- STAT 51200 - Applied Regression Analysis
- General Education II Option - Credit Hours: 3.00
- Elective (satisfies Science, Technology & Society for core) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00 - 3.00

15-16 Credits

Spring 4th Year

- STAT 42000 - Introduction To Time Series
- STAT 47901 - Short Term Actuarial Models •
- MGMT 41100 - Investment Management
- Great Issue Option - Credit Hours: 3.00
- Honors Investment Management is required if offered.
- Elective - Credit Hours: 2.00

15 Credits

Notes

Students must earn a 2.5 average GPA among required MA/STAT/MGMT/ECON courses excluding Calculus I, II, III, and STAT 35000 AND A or B in major courses excluding MGMT 20000 and 20100 AND 3.5 Average GPA in major courses marked with a • and pass two SOA exams.

3.3 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Actuarial Science, BS

About the Program

Actuarial Science is a joint program of Mathematics and Statistics that emphasizes course work in Mathematics, Statistics, Economics, and Management. Students can prepare for four to five of the nine course exams to become an actuary and also will be eligible for all three VEEs (Validation by Educational Experience) upon successful completion of all required and recommended courses. In addition, students also earn a second major in Statistics and most also earn a minor in Management.

Actuarial Science Website

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum

3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Degree Requirements

120 Credits Required

Departmental/Program Major Courses (61-64 credits)

Required Major Courses (61-64 credits)

Average GPA in courses must be 2.50 excluding Calculus I, II, and III

- Calculus I Selective - MA 16100 or MA 16500 (satisfies Quantitative Reasoning for core) - Credit Hours: 4.00 - 5.00 ♦
- Calculus II Selective - MA 16200 or MA 16600 (satisfies Quantitative Reasoning for core) - Credit Hours: 4.00 - 5.00
- Calculus III Selective - MA 26100 or MA 27101 (satisfies Quantitative Reasoning for core) - Credit Hours: 4.00 - 5.00
- MA 35100 - Elementary Linear Algebra
- MA 37300 - Financial Mathematics (satisfies Science Core Multidisciplinary Experience) ♦
- STAT 47201 - Actuarial Models- Life Contingencies
- STAT 47301 - Introduction To Arbitrage-Free Pricing Of Financial Derivatives
- STAT 41700 - Statistical Theory
- MA 36600 - Ordinary Differential Equations
- STAT 51200 - Applied Regression Analysis
- STAT 47901 - Short Term Actuarial Models
- STAT 42000 - Introduction To Time Series
- MGMT 20000 - Introductory Accounting
- MGMT 20100 - Management Accounting I
- MGMT 31000 - Financial Management
- ECON 25100 - Microeconomics (satisfies Science Core of General Education)
- ECON 25200 - Macroeconomics

- MA 41600 - Probability ♦ or
- STAT 41600 - Probability ♦

Other Departmental/Program Course Requirements (27-50 credits)

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

- STAT 35000 - Introduction To Statistics

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)

- Language I Option * (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language II Option * (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Technical Writing Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Laboratory Science I Option (satisfies Science for core) - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option (satisfies Science for core) - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- Computing - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration * - Credit Hours: 0.00 - 4.00
- Great Issues in Science- Credit Hours: 3.00

Electives (6-32 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

- Calculus I Option - Credit Hours: 4.00 - 5.00
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective (MA/STAT 17000 recommended) - Credit Hours: 2.00
- Elective - Credit Hours: 3.00

15-18 Credits

Spring 1st Year

- MA 37300 - Financial Mathematics ♦
- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing (rec. CS 17700 & meets Teambuilding and Collaboration) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Teambuilding & Collaboration - Credit Hours: 0.00
- Elective - Credit Hours: 1.00

14-17 Credits

Fall 2nd Year

- ECON 25100 - Microeconomics
- MGMT 20000 - Introductory Accounting
- STAT 35000 - Introduction To Statistics
- Calculus III Selective - Credit Hours: 4.00 - 5.00
- Language Selective III - Credit Hours: 3.00 - 4.00

16-18 Credits

Spring 2nd Year

- ECON 25200 - Macroeconomics
- MA 35100 - Elementary Linear Algebra
- MGMT 20100 - Management Accounting I

- MA 41600 - Probability ♦ or
- STAT 41600 - Probability ♦

- Elective (STAT 25000 - Problems Solving In Probability RECOMMENDED) - Credit Hours: 2.00
- Elective - Credit Hours: 1.00

15-18 Credits

Fall 3rd Year

- STAT 47201 - Actuarial Models- Life Contingencies
- STAT 41700 - Statistical Theory
- MGMT 31000 - Financial Management
- Laboratory Science I Option - Credit Hours: 3.00 - 4.00
- Technical Writing Option and Technical Presenting Option (COM 21700) - Credit Hours: 3.00 - 6.00

15 Credits

Spring 3rd Year

- STAT 47301 - Introduction To Arbitrage-Free Pricing Of Financial Derivatives
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- General Education I Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective (recommended - STAT 47500 Life Contingencies II Credit Hours: 2.00

16-17 Credits

Fall 4th Year

- MA 36600 - Ordinary Differential Equations
- STAT 51200 - Applied Regression Analysis
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective to satisfy Science, Technology & Society for core- Credit Hours: 3.00

16 Credits

Spring 4th Year

- STAT 42000 - Introduction To Time Series
- STAT 47901 - Short Term Actuarial Models
- Great Issue Option - Credit Hours: 3.00
- Elective - MGMT 41100 Investment Management RECOMMENDED - Credit Hours: 3.00 - Honors Version of Investment Management is suggested
- Elective - Credit Hours: 2.00

15 Credits

Notes

Students must earn a 2.5 average GPA among required MA/STAT/MGMT/ECON courses excluding Calculus I, II, III, and STAT 35000.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Applied Mathematics, BS

About the Program

Math students enjoy a great deal of personal attention. Most math classes for math majors are 40 students or less, and many upper-level classes have fewer than 25 students. In addition, the math curriculum is flexible enough that students can take classes in other interest areas or pursue double major or a minor without too much difficulty. Math specializations include:

- Applied mathematics
- Business mathematics
- Mathematics
- Mathematics teaching
- Mathematics with computer sciences option
- Mathematics with statistics option
- Operations research

Important note: When applying for any specialization within Mathematics, select "Mathematics" as your major. You will have the opportunity to specialize as you progress through the curriculum.

Mathematics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (73-102 credits)

Required Major Courses (43-46 credits)

Average GPA in courses must be 2.00 excluding Calculus I, II, and III

- MA 35100 - Elementary Linear Algebra ♦
- MA 35300 - Linear Algebra II With Applications
- MA 36600 - Ordinary Differential Equations

- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I

- CS 31400 - Numerical Methods or
- MA 51400 - Numerical Analysis

- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors

- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences or
- MA 30400 - Differential Equations And Analysis Of Nonlinear Systems For Engineering And The Sciences

Calculus I Selective - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Selective - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Selective - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Advanced Calculus Selective (3 credits)

- MA 36200 - Topics In Vector Calculus or
- MA 44200 - Honors Real Analysis II

Applied Math Selective (3 credits)

- MA 42500 - Elements Of Complex Analysis or
- MA 42800 - Introduction To Fourier Analysis or
- MA 52300 - Introduction To Partial Differential Equations

Math/Statistics Selective (3 credits)

- MA 41600 - Probability or
- STAT 41600 - Probability or
- STAT 51600 - Basic Probability And Applications or
- MA 37500 - Introduction To Discrete Mathematics or
- MA 42100 - Linear Programming And Optimization Techniques or
- MA 42500 - Elements Of Complex Analysis or
- MA 42800 - Introduction To Fourier Analysis

Other Departmental/Program Course Requirements (30-56 credits)

- STAT 35000 - Introduction To Statistics
- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00

- Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
- Multidisciplinary Experience (Select courses COULD satisfy Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00
- Great Issues Option - Credit Hours: 3.00

Electives (18-47 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

- Elective - MA 10800 - Mathematics As A Profession And A Discipline
- Calculus I Option - Credit Hours: 4.00 - 5.00 ♦
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00 - 4.00

15-17 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing Option (rec. CS 17700 & meets Teambuilding and Collaboration Experiences) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-18 Credits

Fall 2nd Year

- Calculus III Option - Credit Hours: 4.00 - 5.00
- Laboratory Science I Option - Credit Hours: 3.00 - 4.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Elective MA 30100 - An Introduction To Proof Through Real Analysis
- Elective - Credit Hours: 2.00

15-18 Credits

Spring 2nd Year

- MA 35100 - Elementary Linear Algebra ♦
- STAT 35000 - Introduction To Statistics
- COM 21700 - Science Writing And Presentation Recommended for Technical Writing Option & Technical Presenting Option - Credit Hours: 3.00 - 6.00
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 0.00 - 3.00

15-16 Credits

Fall 3rd Year

- MA 36600 - Ordinary Differential Equations
- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I
- General Education I Option - Credit Hours: 3.00

- Elective/Science, Technology & Society Selective Course - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15 Credits

Spring 3rd Year

- MA 35300 - Linear Algebra II With Applications
- CS 31400 - Numerical Methods or
- MA 51400 - Numerical Analysis
- Advanced Calculus Selective - Credit Hours: 3.00
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Fall 4th Year

- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences or
- MA 30400 - Differential Equations And Analysis Of Nonlinear Systems For Engineering And The Sciences
- Multidisciplinary Experience - Credit Hours: 0.00 - 3.00
- General Education III Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00 - 6.00

15-18 Credits

Spring 4th Year

- Applied Math Selective - Credit Hours: 3.00
- Math/Statistics Elective - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Note

Student should earn minimum of a B- or better in Critical Courses - see advisor for further details.

Students must earn a 2.0 average in MATH/STAT/CS courses required for major.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Mathematics Education, BS

About the Program

Math students enjoy a great deal of personal attention. Most math classes for math majors have 40 or fewer students, and many upper-level classes have fewer than 25 students. In addition, the math curriculum is flexible enough that students can take classes in other interest areas or pursue a double major or a minor without too much difficulty. Math specializations include:

- Applied mathematics
- Business mathematics
- Mathematics
- Mathematics teaching
- Mathematics with computer science option
- Mathematics with statistics option
- Operations research

Important note: When applying for any specialization within Mathematics, select "Mathematics" as your major. You will have the opportunity to specialize as you progress through the curriculum.

Mathematics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (98-116 credits)

Required Major Courses (44-47 credits)

Average GPA in courses below [higher of grade between STAT 35000 and MA Selective is used] must be 2.50

- MA 35100 - Elementary Linear Algebra
- MA 36600 - Ordinary Differential Equations
- MA 37500 - Introduction To Discrete Mathematics
- MA 46000 - Geometry
- STAT 31100 - Introductory Probability
- STAT 35000 - Introduction To Statistics (satisfies Statistics Requirement)

- CS 17700 - Programming With Multimedia Objects (CS 17700 satisfies Computing Requirement and is the recommended course) or
- CS 15800 - C Programming or
- CS 15900 - Programming Applications For Engineers or
- CS 18000 - Problem Solving And Object-Oriented Programming

- MA 30100 - An Introduction To Proof Through Real Analysis or
- MA 34100 - Foundations Of Analysis

- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors

Calculus I Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

MA Selective (3 credits)

MA Elective must be 300 level or higher (CANNOT be MA 37300, MA 30300, or MA 30400. You must apply and be accepted for MA 48400- see advisor for more details)

- MA 35300 - Linear Algebra II With Applications
- MA 36200 - Topics In Vector Calculus
- MA 38500 - Introduction To Logic
- MA 42100 - Linear Programming And Optimization Techniques
- MA 42500 - Elements Of Complex Analysis
- MA 42800 - Introduction To Fourier Analysis
- MA 48400 - Seminar On Teaching College Algebra And Trigonometry

Educational Program Course Requirements (36 credits)

Average GPA in courses must be 3.00 - no grade lower than C-

- EDCI 27000 - Introduction To Educational Technology And Computing
- EDCI 20500 - Exploring Teaching As A Career
- EDCI 28500 - Multiculturalism And Education
- EDPS 23500 - Learning And Motivation (satisfies Behavior/Social Science for core) (satisfies General Education Requirement)
- EDPS 26500 - The Inclusive Classroom (satisfies Behavior/Social Science for core)
- EDST 20010 - Educational Policies And Laws
- EDPS 32700 - Classroom Assessment
- EDPS 43010 - Secondary Creating And Managing Learning Environments
- EDCI 42500 - Teaching Of Mathematics In Secondary Schools (satisfies Multidisciplinary Requirement)
- EDCI 42600 - Teaching Mathematics In The Middle And Junior High School
- EDCI 49800 - Supervised Teaching (satisfies Teamwork Experience requirement)

Other Departmental/Program Course Requirements (21-35 credits)

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
 - SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
 - ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
 - Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communications for core) - Credit Hours: 3.00 - 6.00
 - Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
 - Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
 - General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
 - General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
 - Great Issues Option - Credit Hours: 3.00
- *Requirement may be met with a zero credit experiential learning option. See your advisor for more information

Electives (4-22 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- EDCI 20500 - Exploring Teaching As A Career
- Calculus I Option - Credit Hours: 4.00 - 5.00 ♦

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

- Language I Option - Credit Hours: 3.00 - 4.00
- Elective (MA 10800 is RECOMMENDED) - Credit Hours: 1.00
- Elective - Credit Hours: 1.00

15-18 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- CS 17700 - Programming With Multimedia Objects
- EDCI 28500 - Multiculturalism And Education
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective (EDCI Math Education Seminar RECOMMENDED) - Credit Hours: 1.0

15-17 Credits

Fall 2nd Year

- MA 46000 - Geometry
Calculus III Selective - Credit Hours: 4.00-5.00
- EDCI 27000 - Introduction To Educational Technology And Computing
- EDST 20010 - Educational Policies And Laws
- Laboratory Science I Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 1.00

16-18 Credits

Spring 2nd Year

- MA 37500 - Introduction To Discrete Mathematics
- STAT 31100 - Introductory Probability
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- Technical Writing Option and Technical Presenting Option (COM 21700 RECOMMENDED) - Credit Hours: 3.00 - 6.00
- Elective (EDCI Math Education Seminar RECOMMENDED) - Credit Hours: 1.00

13-17 Credits

Fall 3rd Year

- MA 30100 - An Introduction To Proof Through Real Analysis
- MA 35100 - Elementary Linear Algebra
- EDPS 23500 - Learning And Motivation
- EDPS 26500 - The Inclusive Classroom
- EDPS 32700 - Classroom Assessment
- General Education I Option - Credit Hours: 3.00

16 Credits

Spring 3rd Year

- STAT 35000 - Introduction To Statistics
- MA 36600 - Ordinary Differential Equations
- EDCI 42500 - Teaching Of Mathematics In Secondary Schools
- EDPS 43010 - Secondary Creating And Managing Learning Environments
- Great Issues Option - Credit Hours: 3.00
- Elective (EDCI Math Methods Seminar RECOMMENDED) - Credit Hours: 1.0

17 Credits

Fall 4th Year

- MA 48400 - Seminar On Teaching College Algebra And Trigonometry
- EDCI 42600 - Teaching Mathematics In The Middle And Junior High School
- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors
- General Education II Option - Credit Hours: 3.00
- Elective (Science, Technology & Society Selective Course) - Credit Hours: 4.00

15 Credits

Spring 4th Year

- EDCI 49800 - Supervised Teaching

12 Credits

Notes

◆ Student should earn minimum of a B- see advisor for further details.

Students must earn a 2.5 average in MATH/STAT/CS courses required for major.

2.5 Graduation GPA required for Bachelor of Science degree.

*For Licensing - Students must pass GATE C

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ◆ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Mathematics Honors, BS

About the Program

Math students enjoy a great deal of personal attention. Most math classes for math majors have 40 or fewer students, and many upper-level classes have fewer than 25 students. In addition, the math curriculum is flexible enough that students can take classes in other interest areas or pursue a double major or a minor without too much difficulty. Math specializations include:

- Applied mathematics
- Business mathematics
- Mathematics
- Mathematics teaching
- Mathematics with computer science option
- Mathematics with statistics option
- Operations research

Important note: When applying for any specialization within Mathematics, select "Mathematics" as your major. You will have the opportunity to specialize as you progress through the curriculum.

Mathematics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (70-99 credits)

Required Major Courses (40-43 credits)

Average GPA in courses must be 3.50 or higher excluding Calculus I, II and III. Average GPA in MA 44000, MA 44200 and MA 45000 must be 3.50 or higher.

- MA 35100 - Elementary Linear Algebra ♦
- MA 35300 - Linear Algebra II With Applications
- MA 36600 - Ordinary Differential Equations
- MA 45000 - Algebra Honors

- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I

Calculus I Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Advanced Calculus Selective (3 credits)

- MA 36200 - Topics In Vector Calculus or
- MA 44200 - Honors Real Analysis II

MA Selective (9 credits)

- MA Selective - No more than two courses from any one group (if student takes MA 34100, he or she must take MA 44000 for this MA Selective) and/or (if student takes MA 36200 or MA 51000, he or she must take MA 44200 for this MA Selective) - Credit Hours: 9.00

Algebra

- MA 42100 - Linear Programming And Optimization Techniques

Analysis

- MA 42500 - Elements Of Complex Analysis
- MA 42800 - Introduction To Fourier Analysis
- MA 44000 - Honors Real Analysis I
- MA 44200 - Honors Real Analysis II

Computer Science

- CS 24000 - Programming In C
- CS 25100 - Data Structures And Algorithms

Discrete Mathematics, Foundations

- CS 38100 - Introduction To The Analysis Of Algorithms
- CS 48300 - Introduction To The Theory Of Computation
- MA 37500 - Introduction To Discrete Mathematics
- MA 38500 - Introduction To Logic

Numerical Analysis

- CS 31400 - Numerical Methods
- CS 51400 - Numerical Analysis
- CS 51500 - Numerical Linear Algebra
- CS 51501 - Parallelism In Numerical Linear Algebra

- CS 52000 - Computational Methods In Optimization

Statistics, Probability

- MA 41600 - Probability
- STAT 41600 - Probability
- STAT 41700 - Statistical Theory
- STAT 51600 - Basic Probability And Applications
- STAT 51700 - Statistical Inference
- STAT 51900 - Introduction To Probability
- MA 51900 - Introduction To Probability

Approved for MATH/MAED dual majors ONLY

- MA 48400 - Seminar On Teaching College Algebra And Trigonometry

Approved for MATH/PHYS dual majors ONLY

- PHYS 60000 - Methods Of Theoretical Physics I
- PHYS 60100 - Methods Of Theoretical Physics II

Other Departmental/Program Course Requirements (30-56 credits)

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

- STAT 35000 - Introduction To Statistics
- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- Language I Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00 *
- Language II Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00 *
- Language III/Culture/Diversity Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00 *
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- Computing Options - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00 - 4.00 *

- Great Issues Option - Credit Hours: 3.00
- Multidisciplinary Experience (Select courses COULD satisfy Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00 *

Electives (21-50 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition
- Calculus I Option - Credit Hours: 4.00 - 5.00 ♦
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective MA 10800 - Mathematics As A Profession And A Discipline
- Elective - Credit Hours: 4.00

15-18 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing Option (CS 17700 Meets Teambuilding and Collaboration Experience) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 2.00

- Elective - Credit Hours: 3.00

15-18 Credits

Fall 2nd Year

- Calculus III Option - Credit Hours: 4.00 - 5.00
- Laboratory Science I Option - Credit Hours: 3.00 - 4.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Elective MA 30100 - An Introduction To Proof Through Real Analysis
- Elective - Credit Hours: 2.00

15-18 Credits

Spring 2nd Year

- COM 21700 - Science Writing And Presentation
- MA 35100 - Elementary Linear Algebra ♦
- STAT 35000 - Introduction To Statistics
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 0.00 - 3.00
Technical Writing Option and Technical Presenting Option - Credit Hours: 3.00 - 6.00

15-16 Credits

Fall 3rd Year

- MA 36600 - Ordinary Differential Equations
- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I
- General Education I Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15 Credits

Spring 3rd Year

- MA 35300 - Linear Algebra II With Applications
- Advance Calculus Selective - Credit Hours: 3.00
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Fall 4th Year

- MA 45000 - Algebra Honors
- MA Selective - MA 4400 if not taken in place of MA 34100 MA 44000 - Honors Real Analysis I
- Multidisciplinary Experience - Credit Hours: 0.00 - 4.00
- General Education III Option - Credit Hours: 3.00
- Elective (Science, Technology & Society Selective Course) - Credit Hours: 3.00 - 6.00

15-18 Credits

Spring 4th Year

- Math Selective - MA 44200 if not take as Advanced Calculus Selective MA 44200 - Honors Real Analysis II
- Math Selective - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Notes

Student should earn minimum of a B- or better in Critical Courses, see advisor for further details.

Average GPA in courses must be 3.50 or higher excluding Calculus III Option AND Average GPA in MA 44000, MA 44200 and MA 45000 must be 3.50 or higher.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

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The student is ultimately responsible for knowing and completing all degree requirements.

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Mathematics, BS

About the Program

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- Applied mathematics
- Business mathematics
- Mathematics
- Mathematics teaching
- Mathematics with computer science option
- Mathematics with statistics option
- Operations research

Important note: When applying for any specialization within Mathematics, select "Mathematics" as your major. You will have the opportunity to specialize as you progress through the curriculum.

Mathematics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

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- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

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majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

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- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (70-99 credits)

Required Major Courses (40-43 credits)

Average GPA in courses must be 2.00 excluding Calculus I, II and III.

- MA 35100 - Elementary Linear Algebra ♦
- MA 36600 - Ordinary Differential Equations
- MA 35300 - Linear Algebra II With Applications

- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I

- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors

- MA Selective - Credit Hours: 9.00

Calculus I Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or

- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Advanced Calculus Selective (3 credits)

- MA 36200 - Topics In Vector Calculus or
- MA 44200 - Honors Real Analysis II

Math Selective (9 credits)

No more than two courses in any one category.

Algebra

- MA 42100 - Linear Programming And Optimization Techniques

Analysis

- MA 42500 - Elements Of Complex Analysis
- MA 42800 - Introduction To Fourier Analysis
- MA 44000 - Honors Real Analysis I
- MA 44200 - Honors Real Analysis II

Computer Science

- CS 24000 - Programming In C
- CS 25100 - Data Structures And Algorithms

Discrete Mathematics, Foundations

- CS 38100 - Introduction To The Analysis Of Algorithms
- CS 48300 - Introduction To The Theory Of Computation
- MA 37500 - Introduction To Discrete Mathematics
- MA 38500 - Introduction To Logic

Numerical Analysis

- CS 31400 - Numerical Methods
- CS 51400 - Numerical Analysis
- CS 51500 - Numerical Linear Algebra
- CS 51501 - Parallelism In Numerical Linear Algebra
- CS 52000 - Computational Methods In Optimization

Statistics, Probability

- MA 41600 - Probability
- STAT 41600 - Probability
- STAT 41700 - Statistical Theory
- STAT 51600 - Basic Probability And Applications
- STAT 51700 - Statistical Inference
- STAT 51900 - Introduction To Probability

Allowed for MATH/MAED dual majors ONLY

- MA 48400 - Seminar On Teaching College Algebra And Trigonometry

Allowed for MATH/PHYS dual majors ONLY

- PHYS 60000 - Methods Of Theoretical Physics I
- PHYS 60100 - Methods Of Theoretical Physics II

Other Departmental/Program Course Requirements (30-56 credits)

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

- STAT 35000 - Introduction To Statistics
- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy for core) or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- Language I Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00 *
- Language II Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00 *
- Language III/Culture/Diversity Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00 *
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00

- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00 - 4.00 *
- Great Issues Option - Credit Hours: 3.00
- Multidisciplinary Experience (Select courses COULD satisfy Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00 *

Electives (21-50 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Calculus I Option - Credit Hours: 4.00 - 5.00 ♦
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective MA 10800 - Mathematics As A Profession And A Discipline
- Elective - Credit Hours: 3.00 - 4.00

15-18 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing Option (rec. CS 17700 & meets Teambuilding and Collaboration Experience) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 2.00
- Elective - Credit Hours: 3.00

15-18 Credits

Fall 2nd Year

- Calculus III Option - Credit Hours: 4.00 - 5.00
- Laboratory Science I Option - Credit Hours: 3.00 - 4.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Elective MA 30100 - An Introduction To Proof Through Real Analysis
- Elective - Credit Hours: 2.00

15-18 Credits

Spring 2nd Year

- COM 21700 - Science Writing And Presentation
- MA 35100 - Elementary Linear Algebra ♦
- STAT 35000 - Introduction To Statistics
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
Technical Writing Option and Technical Presenting Option - Credit Hours: 3.00 - 6.00
- Elective - Credit Hours: 0.00 - 3.00

15-16 Credits

Fall 3rd Year

- MA 36600 - Ordinary Differential Equations
- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I
- General Education I Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15 Credits

Spring 3rd Year

- MA 35300 - Linear Algebra II With Applications
- Advanced Calculus Selective - Credit Hours: 3.00
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Fall 4th Year

- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors
- MA Selective - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 3.00
- General Education III Option - Credit Hours: 3.00
- Elective (Science, Technology & Society Selective Course) - Credit Hours: 3.00 - 6.00

15-18 Credits

Spring 4th Year

- Math Selective - Credit Hours: 3.00
- Math Selective - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Notes

Student should earn minimum of a B- in critical courses; see advisor for further details.

Students must earn a 2.0 average in MATH/STAT/CS courses required for major (excluding Calculus I, II, III)

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Mathematics/Business, BS

About the Program

Math students enjoy a great deal of personal attention. Most math classes for math majors have 40 or fewer students, and many upper-level classes have fewer than 25 students. In addition, the math curriculum is flexible enough that students can take classes in other interest areas or pursue a double major or a minor without too much difficulty. Math specializations include:

- Applied mathematics
- Business mathematics
- Mathematics
- Mathematics teaching
- Mathematics with computer science option
- Mathematics with statistics option
- Operations research

Important note: When applying for any specialization within Mathematics, select "Mathematics" as your major. You will have the opportunity to specialize as you progress through the curriculum.

Mathematics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.

- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click here.

Departmental/Program Major Courses (75-104 credits)

Required Major Courses (48-51 credits)

Average GPA in courses must be 2.00 excluding Calculus I, II and III

- MGMT 20000 - Introductory Accounting (satisfies General Education Selective)
- MA 35100 - Elementary Linear Algebra ♦
- MA 41600 - Probability or
- STAT 41600 - Probability or
- STAT 51600 - Basic Probability And Applications
- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I

- MA 35300 - Linear Algebra II With Applications
- MA 36600 - Ordinary Differential Equations
- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors
- STAT 51200 - Applied Regression Analysis

Calculus I Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Option Course Selective I (6 credits)

- MA 37500 - Introduction To Discrete Mathematics or
- MA 42100 - Linear Programming And Optimization Techniques or
- CS 31400 - Numerical Methods or
- STAT 41700 - Statistical Theory or
- STAT 51700 - Statistical Inference

Option Course Selective II (6 credits)

- MA 37300 - Financial Mathematics or
- MGMT 30400 - Introduction To Financial Management or
- MGMT 31000 - Financial Management or
- MGMT 41100 - Investment Management or
- MGMT 54400 - Database Management Systems or
- MGMT 32300 - Principles Of Marketing

Other Departmental/Program Course Requirements (27-53 credits)

*Requirement may be met with a zero credit experiential learning option. See your advisor for more information

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)

- Language I Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00 *
- Language II Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00 *
- Language III/Culture/Diversity Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00 *
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- STAT 35000 - Introduction To Statistics
- Computing Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00 - 4.00 *
- Great Issues Option - Credit Hours: 3.00
- Multidisciplinary Experience (Select courses COULD satisfy Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00 *

Electives (16-45 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Additional Degree Requirements

Program Requirements

Fall 1st Year

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- Calculus I Option - Credit Hours: 4.00 - 5.00 ♦

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition

- Language I Option - Credit Hours: 3.00 - 4.00
- Elective MA 10800 - Mathematics As A Profession And A Discipline
- Elective - Credit Hours: 3.00 - 4.00

15-17 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing Option (rec. CS 17700 will also meet Teambuilding & Collaboration) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-18 Credits

Fall 2nd Year

- Calculus III Option - Credit Hours: 4.00 - 5.00
- MGMT 20000 - Introductory Accounting
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Elective MA 30100 - An Introduction To Proof Through Real Analysis
- Elective - Credit Hours: 2.00

15-17 Credits

Spring 2nd Year

- MA 35100 - Elementary Linear Algebra ♦
- Option Course Selective I - Credit Hours: 3.00
- STAT 35000 - Introduction To Statistics
- COM 21700 - Science Writing And Presentation Technical Writing Option and Technical Presenting Option - Credit Hours: 3.00 - 6.00
- Elective - Credit Hours: 0.00 - 3.00

15 -18 Credits

Fall 3rd Year

- MA 41600 - Probability or
- STAT 41600 - Probability or
- STAT 51600 - Basic Probability And Applications

- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I

- Laboratory Science I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective (Science, Technology & Society Selective Course) - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

- MA 35300 - Linear Algebra II With Applications
- Option Course Selective I - Credit Hours: 3.00
- General Education I Option - Credit Hours: 3.00
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00

15-16 Credits

Fall 4th Year

- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors

- MA 36600 - Ordinary Differential Equations
- Option Course Selective II - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 0.00 - 4.00
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 0.00 - 2.00

15-18 Credits

Spring 4th Year

- Option Course Selective II - Credit Hours: 3.00
- STAT 51200 - Applied Regression Analysis
- Great Issues Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

- Elective - Credit Hours: 3.00

15 Credits

Notes

Student should earn minimum of a B- or better in Critical Courses, see advisor for further details.

Students must earn a 2.0 average in MATH/STAT/MGMT courses required for major excluding Calculus III Option and STAT 35000.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Mathematics/Computer Science, BS

About the Program

Math students enjoy a great deal of personal attention. Most math classes for math majors have 40 or fewer students, and many upper-level classes have fewer than 25 students. In addition, the math curriculum is flexible enough that students can take classes in other interest areas or pursue a double major or a minor without too much difficulty. Math specializations include:

- Applied mathematics
- Business mathematics
- Mathematics
- Mathematics teaching
- Mathematics with computer science option
- Mathematics with statistics option
- Operations research

Important note: When applying for any specialization within Mathematics, select "Mathematics" as your major. You will have the opportunity to specialize as you progress through the curriculum.

Mathematics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration

- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (73-102 credits)

Required Major Courses (43-46 credits)

Average GPA in courses must be 2.00 excluding Calculus I, II, and III

- MA 35100 - Elementary Linear Algebra ♦
- MA 37500 - Introduction To Discrete Mathematics
- MA 36600 - Ordinary Differential Equations
- CS 24000 - Programming In C
- CS 25100 - Data Structures And Algorithms

- CS 31400 - Numerical Methods or
- MA 51400 - Numerical Analysis

Calculus I Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

MACS Math Selective (6 credits)

- MA 35300 - Linear Algebra II With Applications or
- MA 38500 - Introduction To Logic or
- MA 45300 - Elements Of Algebra I or

- MA 45000 - Algebra Honors

CS Selective - (3 credits)

- CS 38100 - Introduction To The Analysis Of Algorithms or
- CS 33400 - Fundamentals Of Computer Graphics or
- CS 48300 - Introduction To The Theory Of Computation or
- CS 51400 - Numerical Analysis or
- CS 51500 - Numerical Linear Algebra or
- CS 52000 - Computational Methods In Optimization

MA/STAT Selective (3 credits)

- MA 34100 - Foundations Of Analysis or
- MA 36200 - Topics In Vector Calculus or
- MA 41600 - Probability or
- STAT 41600 - Probability or
- MA 42100 - Linear Programming And Optimization Techniques or
- MA 42500 - Elements Of Complex Analysis or
- STAT 42000 - Introduction To Time Series or
- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors or
- MA 44000 - Honors Real Analysis I or
- MA 44200 - Honors Real Analysis II or
- MA 51800 - Advanced Discrete Mathematics

Other Departmental/Program Course Requirements (30-56 credits)

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
- General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00

- STAT 35000 - Introduction To Statistics
- Computing Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
- Great Issues Option - Credit Hours: 3.00
- Multidisciplinary Experience* (Select courses COULD satisfy Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00

Electives (18-47 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- Calculus I Option - Credit Hours: 4.00 - 5.00 ♦
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective MA 10800 - Mathematics As A Profession And A Discipline
- Elective CS 17700 - Programming With Multimedia Objects

15-18 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- CS 18000 - Problem Solving And Object-Oriented Programming
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15-17 Credits

Fall 2nd Year

- Calculus III Option - Credit Hours: 4.00 - 5.00
- STAT 35000 - Introduction To Statistics
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- General Education I Option - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-17 Credits

Spring 2nd Year

- MA 35100 - Elementary Linear Algebra ♦
- MA 37500 - Introduction To Discrete Mathematics (used as CS 18200 pre-requisite)
- Technical Writing Option and Technical Presenting Option - Credit Hours: 3.00 - 6.00 COM 21700 - Science Writing And Presentation
- General Education II Option - Credit Hours: 3.00
- Elective - Credit Hours: 0.00 - 3.00

15 Credits

Fall 3rd Year

- MA 36600 - Ordinary Differential Equations
- CS 24000 - Programming In C
- Laboratory Science I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-16 Credits

Spring 3rd Year

- MACS Math Selective I - Credit Hours: 3.00
- CS 25100 - Data Structures And Algorithms
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 6.00

15-16 Credits

Fall 4th Year

- CS 31400 - Numerical Methods or
- MA 51400 - Numerical Analysis

- MACS Math Selective II - Credit Hours: 3.00
- General Education III Option - Credit Hours: 3.00
- Elective (Science, Technology & Society Selective Course) - Credit Hours: 6.00

15 Credits

Spring 4th Year

- MA/STAT Selective - Credit Hours: 3.00
- CS Selective - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 0.00 - 4.00
- Great Issues Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00 - 6.00

15-18 Credits

Notes

Student should earn minimum of a B- or better in Critical Courses, see advisor for further details.

Students must earn a 2.0 average in MATH/STAT/CS courses required for major.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Mathematics/Statistics, BS

About the Program

Math students enjoy a great deal of personal attention. Most math classes for math majors are 40 students or less, and many upperlevel classes have fewer than 25 students. In addition, the math curriculum is flexible enough that students can take classes in other interest areas or pursue double major or a minor without too much difficulty. Math specializations include:

- Applied mathematics
- Business mathematics
- Mathematics
- Mathematics teaching
- Mathematics with computer sciences option
- Mathematics with statistics option
- Operations research

Important note: When applying for any specialization within Mathematics, select "Mathematics" as your major. You will have the opportunity to specialize as you progress through the curriculum.

Mathematics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
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Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests

or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (69-99 credits)

Required Major Courses (42-46 credits)

Average GPA in courses must be 2.00 excluding Calculus I, II, and III

- MA 35100 - Elementary Linear Algebra ♦
- STAT 35000 - Introduction To Statistics (satisfies Statistics Requirement)

- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I

- MA 41600 - Probability or
- STAT 41600 - Probability or
- STAT 51600 - Basic Probability And Applications

- STAT 41700 - Statistical Theory or
- STAT 51700 - Statistical Inference

- STAT 51200 - Applied Regression Analysis
- MA 35300 - Linear Algebra II With Applications

Calculus I Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Advanced Calculus Selective (3 credits)

- MA 36200 - Topics In Vector Calculus or
- MA 44200 - Honors Real Analysis II

Advanced MA Selective (3-4 credits)

- MA 36600 - Ordinary Differential Equations or
- MA 37500 - Introduction To Discrete Mathematics or
- MA 42100 - Linear Programming And Optimization Techniques or
- MA 42500 - Elements Of Complex Analysis or
- MA 42800 - Introduction To Fourier Analysis or
- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors

STAT Selective (3 credits)

- STAT 51300 - Statistical Quality Control or
- STAT 51400 - Design Of Experiments or
- STAT 42000 - Introduction To Time Series or
- IE 53000 - Quality Control

Other Departmental/Program Course Requirements (27-53 credits)

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core)
or

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
 - ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
 - Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
 - Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
 - Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
 - General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
 - General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
 - General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
 - Computing Option - Credit Hours: 3.00 - 4.00
 - Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
 - Great Issues Option - Credit Hours: 3.00
 - Multidisciplinary Experience* (Select courses COULD satisfy Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00
- *Requirement may be met with a zero credit experiential learning option. See your advisor for more information

Electives (21-51 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- Calculus I Option - Credit Hours: 4.00 - 5.00 ♦

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition

- Language I Option - Credit Hours: 3.00 - 4.00
- Elective MA 10800 - Mathematics As A Profession And A Discipline
- Elective - Credit Hours: 3.00 - 4.00

15-17 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing Option (rec. CS 17700 & meets Teambuilding and Collaboration Experience) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-18 Credits

Fall 2nd Year

- Calculus III Option - Credit Hours: 4.00 - 5.00
- General Education I Option - Credit Hours: 3.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Elective MA 30100 - An Introduction To Proof Through Real Analysis
- Elective - Credit Hours: 2.00

15-17 Credits

Spring 2nd Year

- MA 35100 - Elementary Linear Algebra ♦
- STAT 35000 - Introduction To Statistics - Credit Hours: 3.00 - 6.00
- Technical Writing Option and Technical Presenting Option COM 21700 - Science Writing And Presentation
- Elective - Credit Hours: 3.00 - 6.00

15 Credits

Fall 3rd Year

- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I
- MA 41600 - Probability or
- STAT 41600 - Probability or
- STAT 51600 - Basic Probability And Applications
- Laboratory Science I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

- Advance Calculus Selective - Credit Hours: 3.00
- STAT 41700 - Statistical Theory or
- STAT 51700 - Statistical Inference
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- Great Issues Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Fall 4th Year

- Advanced MA Selective - Credit Hours: 3.00
- STAT 51200 - Applied Regression Analysis
- General Education II Option - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 0.00 - 3.00
- Elective (Science, Technology & Society Selective Course) - Credit Hours: 3.00 - 6.00

15-18 Credits

Spring 4th Year

- MA 35300 - Linear Algebra II With Applications
- STAT Selective - Credit Hours: 3.00
- General Education III Option - Credit Hours: 3.00
- Elective - Credit Hours: 6.00

15 Credits

Notes

Student should earn minimum of a B- or better in Critical Courses, see advisor for further details.

Students must earn a 2.0 average in MATH/STAT/IE courses required for major.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Minor

Mathematics Minor

The Mathematics Minor provides a strong background in mathematics for students majoring in some other discipline.

Pre-requisite Courses for Math Minor

To complete the required courses for the Mathematics minor, you will need to first complete the following pre-requisite courses [by completing the course or establishing credit]. These courses are not part of the Mathematics minor.

- MA 26100 - Multivariate Calculus

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Requirements for the Minor (12-13 credits)

To qualify for the minor, the following classes must be completed with a C- or better (pass/no pass grade option is not allowed for the minor).

Area 1 (Choose one course) 3 credits

- MA 35100 - Elementary Linear Algebra
- MA 26500 - Linear Algebra [must be completed with a B- or better] *
- MA 35300 - Linear Algebra II With Applications - [recommended for students with TR or CR for MA 26500]

Area 2 (Choose one course) 3 credits

- MA 45300 - Elements Of Algebra I (Algebra group)
- MA 45000 - Algebra Honors (Algebra group)
- MA 34100 - Foundations Of Analysis (Analysis group)
- MA 44000 - Honors Real Analysis I (Analysis group)

Area 3 (Choose two course) 6-7 credits

Group Options:

The three courses used for Areas 2 and 3 cannot all be from the same group.

Analysis

- MA 30100 - An Introduction To Proof Through Real Analysis
- MA 34100 - Foundations Of Analysis
- MA 36200 - Topics In Vector Calculus
- MA 42500 - Elements Of Complex Analysis
- MA 42800 - Introduction To Fourier Analysis
- MA 44000 - Honors Real Analysis I
- MA 44200 - Honors Real Analysis II

Algebra

- MA 42100 - Linear Programming And Optimization Techniques
- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors

Differential Equations

Only one differential equations course can be used in AREA 3.

- MA 36600 - Ordinary Differential Equations or **
- MA 26600 - Ordinary Differential Equations or
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences or

- MA 30400 - Differential Equations And Analysis Of Nonlinear Systems For Engineering And The Sciences

Discrete Mathematics, Foundation

- CS 38100 - Introduction To The Analysis Of Algorithms
- CS 48300 - Introduction To The Theory Of Computation
- MA 37500 - Introduction To Discrete Mathematics
- MA 38500 - Introduction To Logic

Computer Science

- CS 24000 - Programming In C
- CS 25100 - Data Structures And Algorithms

Numerical Analysis

- CS 31400 - Numerical Methods
- CS 51400 - Numerical Analysis
- CS 51500 - Numerical Linear Algebra
- CS 51501 - Parallelism In Numerical Linear Algebra
- CS 52000 - Computational Methods In Optimization

Statistics, Probability

Only one statistics, probability course can be used in AREA 3.

- MA 41600 - Probability or
- STAT 41600 - Probability or
- STAT 41700 - Statistical Theory or
- STAT 51600 - Basic Probability And Applications or
- STAT 51900 - Introduction To Probability

Linear Algebra

- MA 35300 - Linear Algebra II With Applications

Notes

- No substitutions are allowed.
- A course can only be used in one area.
- ALL COURSES FOR THIS MINOR LISTED BELOW MUST BE TAKEN AT PURDUE UNIVERSITY
- *For many students, MA 26500 may not be adequate preparation for upper division mathematics classes. Students planning a Mathematics Minor should consider taking MA 35100 instead. Only students with a very firm grasp of the MA 26500 material [and a grade of B- or better] should contemplate taking MA 35300 without MA 35100.
- ** MA 26600 with at least a "B-" can be used in place of MA 36600 [only one of MA 26600 /MA 36600/MA 30300/ or MA 30400 can be used in Area 3]. MA 26200 will not be accepted for the minor.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Department of Physics and Astronomy

Overview

The Department of Physics and Astronomy serves the citizens of Indiana, the United States and the world through discovery that expands knowledge in the field of physics and closely related sciences, through conveyance of this knowledge to our students in an excellent learning environment, and through engagement in which we share our skills, knowledge, and enthusiasm with diverse communities beyond the University.

At present we have 58 faculty members, 62 postdocs and research scientists, 146 graduate students, and 196 undergraduate physics majors. These individuals conduct research across a broad spectrum of physics:

- Accelerator mass spectrometry
- Applied physics, experimental
- Astrophysics, experimental and theoretical
- Atomic, molecular, and optical (AMO) physics, experimental and theoretical
- Biophysics, experimental and theoretical
- Condensed matter physics, experimental and theoretical
- Geophysics, experimental
- High energy nuclear physics, experimental and theoretical
- High energy particle physics, experimental and theoretical
- Physics education
- Planetary physics

Our faculty members are recognized as world leaders in their respective fields. Included in our ranks are a member of the National Academy of Sciences, a winner of the Hamburg Prize for Theoretical Physics, the immediate past president of the National Association for Research in Science Teaching, 3 AAAS fellows, and 10 APS fellows.

On campus, the department occupies two buildings, the "Physics Building" (originally named the Charles Benedict Stuart Laboratory of Applied Physics) and an attached two-story subterranean laboratory complex containing offices, work rooms, and laboratories dedicated to accelerator mass spectrometry, the Purdue Rare Isotope Measurement Laboratory (PRIME Lab). We also make use of campus facilities in Purdue's Discover Park, particularly the Birck Nanotechnology Center and the Bindley Bioscience Center. Off campus, we participate in research that occurs at the Large Hadron Collider at CERN, Argonne National Laboratory, Brookhaven National Laboratory, Fermilab, the Stanford Linear Accelerator, and several observatories around the globe.

Our department has undergraduate programs in Physics, Honors Physics, Applied Physics, Applied Honors Physics, and Physics Teaching. We also have undergraduate minors in both Astronomy and Physics. Our graduate program offers both M.S. and PH.D. degrees with a wide variety of specializations.

All physics major students must complete the majority of upper level (300 level and above) physics courses in residence at Purdue. Students can use transfer credits for no more than 50 percent of the upper level physics courses in order to receive a Physics and Astronomy B.S. Degree.

Through our outreach programs we bring our love of physics to thousands of elementary and high school students and their teachers every year. Classroom visits are complete with demonstrations hands-on learning activities. Teachers receive high-quality, content-based professional development in our workshops and through summer research opportunities.

Faculty

Department of Physics and Astronomy Website

Contact Information

Mailing Address

Department of Physics and Astronomy
525 Northwestern Avenue
West Lafayette, IN 47907-2036

Telephone and Fax

(765) 494-3000 (main office)
(765) 494-2970 (undergraduate office)
(765) 494-0706 (fax)

Department directory

General questions

physcontacts@purdue.edu

Graduate Information

For Graduate Information please see Physics and Astronomy Graduate Program Information.

Baccalaureate

Applied Physics Honors, BS

About the Program

Purdue physics is an internationally recognized department for excellence in forefront research and undergraduate and graduate education. Our undergraduate classes for physics majors average 30 or fewer students and are taught by professors actively engaged in forefront research. Undergraduate research is strongly encouraged and opportunities exist as early as the second semester to work in a research group. These groups include experimental and theoretical condensed matter physics, high energy physics, nano-physics, nuclear physics, astrophysics, biological physics, geophysics, relativity, and interdisciplinary areas of material science, engineering, or computational science.

The department also helps undergraduates with external internships, particularly for the summers. Upon graduation our students are accepted for graduate programs at many of the top universities and are also sought after for positions in industry, particularly high-tech positions. Our graduates have an exceptional record of career accomplishment in a wide variety of settings, including academia and major industrial and government labs.

The specialties under the applied physics curriculum can range from different areas. Individually tailored specialties may be chosen by the student in consultation with an advisor. Currently available specialties include:

- Geophysics and Atmospheric Sciences
- Astrophysics
- Computational Physics
- Nuclear Physics
- Material Science & Engineering
- Chemical Engineering
- Aeronautical & Astronautical Engineering
- Industrial Engineering
- Electrical and Computer Engineering
- Mechanical Engineering
- Medical Physics

In addition, many physics majors manage to complete dual or multiple major programs within the College of Science. This is possible because of a considerable overlap of the College of Science requirements. Popular dual majors with physics are: mathematics, computer science and chemistry.

The following stipulations need to be met in order to be in, stay in and graduate in the Honors or Applied Honors Program:

- No D+ or worse grade is allowed in any course for a student to stay in the Honors Programs.
- No more than one C range grade is allowed in all physics courses taken for a student to graduate with Honor. Note that a course can be re-taken for the purpose of satisfying this guideline.
- Both the physics AND overall GPAs of 3.0 or better are required for a student to graduate with Honor.
- All the core courses (PHYS 17200, 27200, 30600, 30700, 34400, 34000, and 42200) be complete with a B or better.
- Students need to petition to Undergraduate Committee for exceptions or requests.

Physics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Applied Physics Honors Major Courses (68-69 credits)

Required Major Courses (44-45 credits)

- PHYS 17200 - Modern Mechanics ♦ Physics Majors are required to take the honors sections of PHYS 17200 - Modern Mechanics (also satisfies Science Selective for core and CoS teambuilding experience requirement) (fall)
- PHYS 27200 - Electric And Magnetic Interactions Physics Majors are required to take the honors sections of PHYS 27200 - Electric and Magnetic Interactions Honors (also satisfies Science Selective for core) (spring)
- PHYS 30600 - Mathematical Methods Of Physics I
- PHYS 30700 - Mathematical Methods Of Physics II
- PHYS 34000 - Modern Physics Laboratory
- PHYS 34400 - Modern Physics
- PHYS 41000 - Physical Mechanics I Honors
- PHYS 41600 - Thermal And Statistical Physics Honors
- PHYS 42200 - Waves And Oscillations
- PHYS 43000 - Electricity And Magnetism I Honors
- PHYS 45000 - Intermediate Laboratory
- PHYS 46000 - Quantum Mechanics I Honors
- PHYS 59300 - Independent Research

Calculus III Option - Select from:

- MA 26100 - Multivariate Calculus (satisfies Quantitative Reasoning for core) or
- MA 27101 - Honors Multivariate Calculus (satisfies Quantitative Reasoning for core)

Major Selective* - (24 credits - in chosen applied area(s) approved by the Physics and Astronomy Department)

Other Departmental/Program Course Requirements (37-66 credits)

- CHM 11500 - General Chemistry (satisfies Science Selective for core)
- CHM 11600 - General Chemistry (satisfies Science Selective for core)
- First Year Composition Option (satisfies Written Communication and Information Literacy for core) - Credit Hours: 3.00 - 4.00
- Technical Writing Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 0.00 - 3.00
- Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 0.00 - 3.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00 - 4.00
- Language I Option - Credit Hours: 0.00 - 4.00
- Language II Option - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Great Issues Option (satisfies one of the Science/Engineering requirements for Physics Selective) - Credit Hours: 3.00
- Multidisciplinary Experience (Select courses could satisfy Science, Technology & Society Selective for core) - Credit Hours: 0.00 - 3.00
- Statistics Option - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education III Option (Select courses could satisfy Humanities Behavioral/Social Science for core) - Credit Hours: 3.00

Calculus I Option: (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16500 - Analytic Geometry And Calculus I

Calculus II Option: (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II

Electives (1-15 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- PHYS 17200 - Modern Mechanics (Honors sections) * ♦
- CHM 11500 - General Chemistry *
- Calculus I Option - Credit Hours: 4.00 - 5.00 *
- First Year Composition Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00

15-17 Credits

Spring 1st Year

- PHYS 27200 - Electric And Magnetic Interactions (Honors sections) * ♦
- CHM 11600 - General Chemistry *
- Calculus II Option - Credit Hours: 4.00 - 5.00 *
- Language I Option - Credit Hours: 3.00 - 4.00

15-17 Credits

Fall 2nd Year

- PHYS 30600 - Mathematical Methods Of Physics I
- PHYS 34000 - Modern Physics Laboratory
- PHYS 34400 - Modern Physics
- Calculus III Option - Credit Hours: 4.00 - 5.00

- Language II Option - Credit Hours: 3.00 - 4.00

15-17 Credits

Spring 2nd Year

- PHYS 30700 - Mathematical Methods Of Physics II
- PHYS 42200 - Waves And Oscillations
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Statistics Option - Credit Hours: 3.00
- General Education I Option (Humanities) - Credit Hours: 3.00 *
- Elective (PHYS 23500) - Credit Hours: 1.00

16-17 Credits

Fall 3rd Year

- PHYS 41000 - Physical Mechanics I Honors
- PHYS 46000 - Quantum Mechanics I Honors
- PHYS 45000 - Intermediate Laboratory
- Technical Writing Option and Technical Presenting Option (COM 21700* Recommended) - Credit Hours: 3.00 - 6.00
- Computing Option (CS 15800 Recommended) - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 1.00

15-19 Credits

Spring 3rd Year

- PHYS 43000 - Electricity And Magnetism I Honors
- Major Selective - Credit Hours: 3.00
- Major Selective - Credit Hours: 3.00
- Major Selective - Credit Hours: 3.00
- General Education II Option (Humanities) - Credit Hours: 3.00 *

15 Credits

Fall 4th Year

- PHYS 41600 - Thermal And Statistical Physics Honors
- PHYS 59300 - Independent Research
- Major Selective - Credit Hours: 3.00
- Major Selective - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00

16 Credits

Spring 4th Year

- Major Selective - Credit Hours: 3.00
- Major Selective - Credit Hours: 3.00
- Major Selective - Credit Hours: 3.00
- General Education III Option (Behav./Social Science) - Credit Hours: 3.00 *
- Multidisciplinary Experience (STS) - Credit Hours: 1.00 - 3.00 *
- Elective - Credit Hours: 2.00

15-17 Credits

Notes

*Satisfies a University Core Requirement

3.0 Graduation GPA required for Bachelor of Science degree.

3.0 average in PHYS/ASTR classes required to graduate.

No more than one C grade (i.e., C+, C, or C-) is allowed in all physics courses taken

No grade of D+ or worse is allowed in any course.

◆ Identified as a critical course. Students should earn minimum of a B- see advisor for further details

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ◆ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Applied Physics, BS

About the Program

Purdue physics is an internationally recognized department for excellence in forefront research and undergraduate and graduate education. Our undergraduate classes for physics majors average 30 or fewer students and are taught by professors actively engaged in forefront research. Undergraduate research is strongly encouraged and opportunities exist as early as the second semester to work in a research group. These groups include experimental and theoretical condensed matter physics, high energy physics, nano-physics, nuclear physics, astrophysics, biological physics, geophysics, relativity, and interdisciplinary areas of material science, engineering, or computational science.

The department also helps undergraduates with external internships, particularly for the summers. Upon graduation our students are accepted for graduate programs at many of the top universities and are also sought after for positions in industry, particularly high-tech positions. Our graduates have an exceptional record of career accomplishment in a wide variety of settings, including academia and major industrial and government labs.

The specialties under the applied physics curriculum can range from different areas. Individually tailored specialties may be chosen by the student in consultation with an advisor. Currently available specialties include:

- Geophysics and Atmospheric Sciences
- Astrophysics
- Computational Physics
- Nuclear Physics
- Material Science & Engineering
- Chemical Engineering
- Aeronautical & Astronautical Engineering
- Industrial Engineering
- Electrical and Computer Engineering
- Mechanical Engineering
- Medical Physics

In addition, many physics majors manage to complete dual or multiple major programs within the College of Science. This is possible because of a considerable overlap of the College of Science requirements. Popular dual majors with physics are: mathematics, computer science and chemistry.

Physics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.

- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click here.

Applied Physics Major Courses (65 - 66 credits)

Required Major Courses (41-42 credits)

- PHYS 17200 - Modern Mechanics ♦ Physics Majors are required to take the honors sections of PHYS 17200 - Modern Mechanics (also satisfies Science Selective for core and CoS teambuilding experience requirement) (fall)
- PHYS 27200 - Electric And Magnetic Interactions ♦ Physics Majors are required to take the honors sections of PHYS 27200 - Electric and Magnetic Interactions Honors (also satisfies Science Selective for core) (spring)
- PHYS 30600 - Mathematical Methods Of Physics I
- PHYS 30700 - Mathematical Methods Of Physics II
- PHYS 31000 - Intermediate Mechanics
- PHYS 33000 - Intermediate Electricity And Magnetism
- PHYS 34000 - Modern Physics Laboratory
- PHYS 34400 - Modern Physics
- PHYS 36000 - Quantum Mechanics

- PHYS 42200 - Waves And Oscillations
- PHYS 45000 - Intermediate Laboratory
- PHYS 51500 - Thermal And Statistical Physics

Calculus III Option - Select from:

- MA 26100 - Multivariate Calculus (satisfies Quantitative Reasoning for core)
or
- MA 27101 - Honors Multivariate Calculus (satisfies Quantitative Reasoning for core)

Major Selective* - (24 credits - in chosen applied area(s) approved by the Physics and Astronomy Department)

Other Departmental/Program Course Requirements (37-66 credits)

- CHM 11500 - General Chemistry (satisfies Science Selective for core)
- CHM 11600 - General Chemistry (satisfies Science Selective for core)
- First Year Composition Option (satisfies Written Communication and Information Literacy for core) - Credit Hours: 3.00 - 4.00
- Technical Writing Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 0.00 - 3.00
- Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 0.00 - 3.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00 - 4.00
- Language I Option - Credit Hours: 0.00 - 4.00
- Language II Option - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Great Issues Option (satisfies one of the Science/Engineering requirements for Physics Selective) - Credit Hours: 3.00
- Multidisciplinary Experience (Select courses could satisfy Science, Technology & Society Selective for core) - Credit Hours: 0.00 - 3.00
- Statistics Option - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education III Option (Select courses could satisfy Humanities Behavioral/Social Science for core) - Credit Hours: 3.00

Calculus I Option: (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16500 - Analytic Geometry And Calculus I

Calculus II Option: (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II

- MA 16600 - Analytic Geometry And Calculus II

Electives (1-18 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Additional Degree Requirements

Program Requirements

Fall 1st Year

- PHYS 17200 - Modern Mechanics (Honors sections) * ♦
- CHM 11500 - General Chemistry *
- Calculus I Option - Credit Hours: 4.00 - 5.00 *
- First Year Composition Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00

15-17 Credits

Spring 1st Year

- PHYS 27200 - Electric And Magnetic Interactions (Honors sections) * ♦
- CHM 11600 - General Chemistry *
- Calculus II Option - Credit Hours: 4.00 - 5.00 *
- Language I Option - Credit Hours: 3.00 - 4.00

15-17 Credits

Fall 2nd Year

- PHYS 30600 - Mathematical Methods Of Physics I
- PHYS 34000 - Modern Physics Laboratory
- PHYS 34400 - Modern Physics
- Calculus III Option - Credit Hours: 4.00 - 5.00 *
- Language II Option - Credit Hours: 3.00 - 4.00

15-17 Credits

Spring 2nd Year

- PHYS 30700 - Mathematical Methods Of Physics II
- PHYS 42200 - Waves And Oscillations
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Statistics Option - Credit Hours: 3.00
- General Education I Option (Humanities) - Credit Hours: 3.00 *
- Elective (PHYS 23500) - Credit Hours: 1.00

16-17 Credits

Fall 3rd Year

- PHYS 31000 - Intermediate Mechanics
- PHYS 33000 - Intermediate Electricity And Magnetism
- PHYS 45000 - Intermediate Laboratory
- Technical Writing Option and Technical Presenting Option (COM 21700* Recommended) - Credit Hours: 3.00 - 6.00
- Computing Option (CS 15800 Recommended) - Credit Hours: 3.00 - 4.00

15-19 Credits

Spring 3rd Year

- PHYS 36000 - Quantum Mechanics
- PHYS 51500 - Thermal And Statistical Physics
- Major Selective - Credit Hours: 3.00
- Major Selective - Credit Hours: 3.00
- General Education II Option (Humanities) - Credit Hours: 3.00 *

15 Credits

Fall 4th Year

- Major Selective - Credit Hours: 3.00
- Major Selective - Credit Hours: 3.00

- Major Selective - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- Electives - Credit Hours: 3.00

15 Credits

Spring 4th Year

- Major Selective - Credit Hours: 3.00
- Major Selective - Credit Hours: 3.00
- Major Selective - Credit Hours: 3.00
- General Education III Option (Behav./Social Science) - Credit Hours: 3.00 *
- Multidisciplinary Experience (STS) - Credit Hours: 1.00 - 3.00 *
- Electives - Credit Hours: 2.00

15-17 Credits

Notes

*Satisfies a University Core Requirement

2.0 Graduation GPA required for Bachelor of Science degree.

2.0 average in PHYS/ASTR classes required to graduate.

◆ Identified as a critical course. Students should earn minimum of a B- see advisor for further details

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ◆ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Physics Honors, BS

About the Program

Purdue physics is an internationally recognized department for excellence in forefront research and undergraduate and graduate education. Our undergraduate classes for physics majors average 30 or fewer students and are taught by professors actively engaged in forefront research. Undergraduate research is strongly encouraged and opportunities exist as early as the second semester to work in a research group. These groups include experimental and theoretical condensed matter physics, high energy physics, nano-physics, nuclear physics, astrophysics, biological physics, geophysics, relativity, and interdisciplinary areas of material science, engineering, or computational science.

The department also helps undergraduates with external internships, particularly for the summers. Upon graduation our students are accepted for graduate programs at many of the top universities and are also sought after for positions in industry, particularly high-tech positions. Our graduates have an exceptional record of career accomplishment in a wide variety of settings, including academia and major industrial and government labs.

The honors program offers an intensive concentration in physics that provides a solid foundation for advanced studies. Successful graduates of this challenging program are recognized for both the depth and breadth of their physics education, and they have gone on to the premier graduate schools in the country and, ultimately, to many different career choices.

The honors program provides a solid theoretical and experimental background in mechanics, electromagnetism, waves and oscillations, thermal physics, quantum mechanics, and the micro-structure of matter.

A very important feature of this plan is a senior research project (PHYS 59300) with a written report in some area of modern physics, such as condensed matter physics, nuclear physics, elementary particle physics, biophysics, geophysics, etc. Students receive individual supervision and guidance from a faculty member whose specialty matches the area of their research project. PHYS 593 introduces students to the type of research atmosphere they later might encounter as professional physicists, and it promotes self-motivation and independence in their work.

The Honors Program in the Department of Physics and Astronomy begins in the Junior Year. All physics majors typically start by taking PHYS 172H and 272H as freshmen. Students from other majors who have taken PHYS 172/272 may switch into the Honors Physics major. Admission to, and continuation in, the honors program requires that all the core courses (PHYS 17200, 27200, 30600, 30700, 34400, 34000, and 42200) be complete with a B or better, or special permission from the Physics Undergraduate Committee.

The following stipulations need to be met in order to be in, stay in and graduate in the Honors or Applied Honors Program:

- No D+ or worse grade is allowed in any course for a student to stay in the Honors Programs.
- No more than one C range grade is allowed in all physics courses taken for a student to graduate with Honor. Note that a course can be re-taken for the purpose of satisfying this guideline.
- Both the physics AND overall GPAs of 3.0 or better are required for a student to graduate with Honor.
- All the core courses (PHYS 17200, 27200, 30600, 30700, 34400, 34000, and 42200) be complete with a B or better.
- Students need to petition to Undergraduate Committee for exceptions or requests.

Physics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click [here](#).

Physics Honors Major Courses (66-68 credits)

Required Major Courses (51-52 credits)

- PHYS 17200 - Modern Mechanics ♦ Physics Majors are required to take the honors sections of PHYS 17200 - Modern Mechanics (also satisfies Science Selective for core and CoS teambuilding experience requirement)
- PHYS 27200 - Electric And Magnetic Interactions ♦ Physics Majors are required to take the honors sections of PHYS 27200 - Electric and Magnetic Interactions Honors (also satisfies Science Selective for core)
- PHYS 30600 - Mathematical Methods Of Physics I
- PHYS 30700 - Mathematical Methods Of Physics II
- PHYS 34000 - Modern Physics Laboratory
- PHYS 34400 - Modern Physics
- PHYS 41000 - Physical Mechanics I Honors
- PHYS 41100 - Physical Mechanics II Honors
- PHYS 41600 - Thermal And Statistical Physics Honors
- PHYS 42200 - Waves And Oscillations
- PHYS 43000 - Electricity And Magnetism I Honors
- PHYS 43100 - Electricity And Magnetism II Honors
- PHYS 45000 - Intermediate Laboratory
- PHYS 46000 - Quantum Mechanics I Honors
- PHYS 46100 - Quantum Mechanics II Honors
- PHYS 59300 - Independent Research

Calculus III Option - Select from (4-5 credits)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Major Selective* (15-16 credits)

- PHYS 53600 - Electronic Techniques For Research or
- PHYS 57000 - Selected Topics In Physics - Computational Physics (spring even years) or
- PHYS 58000 - Computational Physics
- PHYS/ASTR Selective \geq 500 level - Credit Hours: 3.00
- PHYS/ASTR Selective \geq 500 level - Credit Hours: 3.00
- Science/Engineering Selective \geq 300 level (could be met by CoS statistics requirement) - Credit Hours: 3.00
- Science/Engineering Selective \geq 300 level (could be met by CoS Great Issues requirement) - Credit Hours: 3.00

Other Departmental/Program Course Requirements (37-66 credits)

- CHM 11500 - General Chemistry (satisfies Science Selective for core)
- CHM 11600 - General Chemistry (satisfies Science Selective for core)
- First Year Composition Option (satisfies Written Communication and Information Literacy for core) - Credit Hours: 3.00 - 4.00
- Technical Writing Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 0.00 - 3.00
- Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 0.00 - 3.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00 - 4.00
- Language I Option - Credit Hours: 0.00 - 4.00
- Language II Option - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Great Issues Option (satisfies one of the Science/Engineering requirements for Physics Selective) - Credit Hours: 3.00

- Multidisciplinary Experience (Select courses could satisfy Science, Technology & Society Selective for core) - Credit Hours: 0.00 - 3.00
- Statistics Option - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education III Option (Select courses could satisfy Humanities Behavioral/Social Science for core) - Credit Hours: 3.00

Calculus I Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I

Calculus II Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Electives (1-17 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- PHYS 17200 - Modern Mechanics (Honors sections) ♦*
- CHM 11500 - General Chemistry *
- Calculus I Option* - Credit Hours: 4.00 - 5.00
- First Year Composition Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00

15-17 Credits

Spring 1st Year

- PHYS 27200 - Electric And Magnetic Interactions (Honors sections) ♦*
- CHM 11600 - General Chemistry *
- Calculus II Option* - Credit Hours: 4.00 - 5.00
- Language I Option - Credit Hours: 3.00 - 4.00

15-17 Credits

Fall 2nd Year

- PHYS 30600 - Mathematical Methods Of Physics I
- PHYS 34000 - Modern Physics Laboratory
- PHYS 34400 - Modern Physics
- Calculus III Option - Credit Hours: 4.00 - 5.00
- Language II Option - Credit Hours: 3.00 - 4.00

15-17 Credits

Spring 2nd Year

- PHYS 30700 - Mathematical Methods Of Physics II
- PHYS 42200 - Waves And Oscillations
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Statistics Option - Credit Hours: 3.00
- Science/Engineering Selective ≥ 300 - Credit Hours: 3.00
- Elective PHYS 23500

16-17 Credits

Fall 3rd Year

- PHYS 41000 - Physical Mechanics I Honors
- PHYS 46000 - Quantum Mechanics I Honors
- PHYS 45000 - Intermediate Laboratory
- Technical Writing Option and Technical Presenting Option COM 21700* (Recommended)- Credit Hours: 3.00 - 6.00
- General Education I Option (Humanities)* - Credit Hours: 3.00

- Elective - Credit Hours: 1.00

15-18 Credits

Spring 3rd Year

- PHYS 41100 - Physical Mechanics II Honors
- PHYS 46100 - Quantum Mechanics II Honors
- PHYS 43000 - Electricity And Magnetism I Honors
- General Education II Option (Humanities)* - Credit Hours: 3.00
- Computing Option CS 15800 (Recommended)- Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 1.00

15-16 Credits

Fall 4th Year

- PHYS 41600 - Thermal And Statistical Physics Honors
- PHYS 43100 - Electricity And Magnetism II Honors
- PHYS 59300 - Independent Research
- Science/Engineering Selective ≥ 300 - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00

15 Credits

Spring 4th Year

- Adv. Lab Option - Credit Hours: 3.00 - 4.00
- PHYS/ASTR Selective ≥ 500 - Credit Hours: 3.00
- PHYS/ASTR Selective ≥ 500 - Credit Hours: 3.00
- General Education III Option (Behav./Social Science)* - Credit Hours: 3.00
- Multidisciplinary Experience (STS)* - Credit Hours: 2.00
- Elective - Credit Hours: 1.00

15-16 Credits

Notes

*Satisfies a University Core Requirement

3.0 Graduation GPA required for Bachelor of Science degree.

3.0 average in PHYS/ASTR classes required to graduate.

No more than one C grade (i.e., C+, C, or C-) is allowed in all physics courses taken

No grade of D+ or worse is allowed in any course.

◆ Identified as a critical course. Students should earn minimum of a B- see advisor for further details

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ◆ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Physics, BS

About the Program

Purdue physics is an internationally recognized department for excellence in forefront research and undergraduate and graduate education. Our undergraduate classes for physics majors average 30 or fewer students and are taught by professors actively engaged in forefront research. Undergraduate research is strongly encouraged and opportunities exist as early as the second semester to work in a research group. These groups include experimental and theoretical condensed matter physics, high energy physics, nano-physics, nuclear physics, astrophysics, biological physics, geophysics, relativity, and interdisciplinary areas of material science, engineering, or computational science.

The department also helps undergraduates with external internships, particularly for the summers. Upon graduation our students are accepted for graduate programs at many of the top universities and are also sought after for positions in industry, particularly high-tech positions. Our graduates have an exceptional record of career accomplishment in a wide variety of settings, including academia and major industrial and government labs.

This program offers a specialization in physics as the core of a broad general education. The core courses provide a solid foundation in Classical Mechanics, Electricity and Magnetism, Waves and Oscillations, Quantum Mechanics, Thermal and Statistical Physics, Modern Physics, Relativity, Electronics, and Computational Physics.

By using electives in the program, a student can include concentrations in condensed matter physics (PHYS 54500), nuclear physics (PHYS 55600), astrophysics (PHYS 56000), particle physics (PHYS 56400), and other areas. Students also are encouraged to participate in one or two semesters of individual research projects with a selected faculty member (PHYS 39000, 49000, or 59000).

Opportunities for employment in fields related to physics will also be enhanced by taking electives in additional science courses such as biological sciences, chemistry, computer science, geosciences, meteorology, and in various branches of engineering. With assistance from an advisor, a student can prepare an individualized program suited to career plans by selecting electives from these areas or from any other area within the University. Normally, students take such electives as juniors and seniors.

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Physics Major Courses (53-55 credits)

Required Major Courses (41-42 credits)

- PHYS 17200 - Modern Mechanics ♦ Physics Majors are required to take the honors sections of PHYS 17200 - Modern Mechanics (also satisfies Science Selective for core and CoS teambuilding experience requirement)
- PHYS 27200 - Electric And Magnetic Interactions ♦ Physics Majors are required to take the honors sections of PHYS 27200H - Electric and Magnetic Interactions Honors (also satisfies Science Selective for core) (spring)
- PHYS 30600 - Mathematical Methods Of Physics I
- PHYS 30700 - Mathematical Methods Of Physics II
- PHYS 31000 - Intermediate Mechanics
- PHYS 33000 - Intermediate Electricity And Magnetism
- PHYS 34000 - Modern Physics Laboratory
- PHYS 34400 - Modern Physics
- PHYS 36000 - Quantum Mechanics
- PHYS 42200 - Waves And Oscillations
- PHYS 45000 - Intermediate Laboratory
- PHYS 51500 - Thermal And Statistical Physics

Calculus III Option - Select from (4-5 credits)

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus (satisfies Quantitative Reasoning for core)

Major Selective* (12-13 credits)

- PHYS 53600 - Electronic Techniques For Research or
- PHYS 58000 - Computational Physics

- PHYS/ASTR \geq 300 level - Credit Hours: 3.00
- Science/Engineering Elective \geq 300 level (could be met by CoS statistics requirement) - Credit Hours: 3.00
- Science/Engineering Elective \geq 300 level (could be met by CoS Great Issues requirement) - Credit Hours: 3.00

Other Departmental/Program Course Requirements (37-66 credits)

- CHM 11500 - General Chemistry (satisfies Science Selective for core)
- CHM 11600 - General Chemistry (satisfies Science Selective for core)
- First Year Composition Option (satisfies Written Communication and Information Literacy for core) - Credit Hours: 3.00 - 4.00
- Technical Writing Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 0.00 - 3.00
- Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 0.00 - 3.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00 - 4.00
- Language I Option - Credit Hours: 0.00 - 4.00
- Language II Option - Credit Hours: 0.00 - 4.00

- Language III/Culture/Diversity Option (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Great Issues Option (satisfies one of the Science/Engineering requirements for Physics Selective) - Credit Hours: 3.00
- Multidisciplinary Experience (Select courses could satisfy Science, Technology & Society Selective for core) - Credit Hours: 0.00 - 3.00
- Statistics Option - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses could satisfy Human Cultures Humanities for core) - Credit Hours: 3.00
- General Education III Option (Select courses could satisfy Humanities Behavioral/Social Science for core) - Credit Hours: 3.00

Calculus I Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I

Calculus II Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Electives (1-30 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- PHYS 17200 - Modern Mechanics (Honors sections) ♦*
- CHM 11500 - General Chemistry *
- Calculus I Option* - Credit Hours: 4.00 - 5.00
- First Year Composition Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience - Credit Hours: 0.00

15-17 Credits

Spring 1st Year

- PHYS 27200 - Electric And Magnetic Interactions (Honors sections) ♦ *
- CHM 11600 - General Chemistry *
- Calculus II Option* - Credit Hours: 4.00 - 5.00
- Language I Option - Credit Hours: 3.00 - 4.00

15-17 Credits

Fall 2nd Year

- PHYS 30600 - Mathematical Methods Of Physics I
- PHYS 34000 - Modern Physics Laboratory
- PHYS 34400 - Modern Physics
- Calculus III Option* - Credit Hours: 4.00 - 5.00
- Language II Option - Credit Hours: 3.00 - 4.00

15-17 Credits

Spring 2nd Year

- PHYS 30700 - Mathematical Methods Of Physics II
- PHYS 42200 - Waves And Oscillations
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Statistics Option - Credit Hours: 3.00
- Elective PHYS 23500 (Recommended)
- Elective - Credit Hours: 2.00

15-16 Credits

Fall 3rd Year

- PHYS 31000 - Intermediate Mechanics

- PHYS 33000 - Intermediate Electricity And Magnetism
- PHYS 45000 - Intermediate Laboratory
- Technical Writing Option and Technical Presenting Option COM 21700* (Recommended)- Credit Hours: 3.00 - 6.00
- General Education I Option (Humanities)* - Credit Hours: 3.00

15-18 Credits

Spring 3rd Year

- PHYS 36000 - Quantum Mechanics
- PHYS 51500 - Thermal And Statistical Physics
- Computing Option CS 15800 (Recommended) - Credit Hours: 3.00 - 4.00
- General Education II Option (Humanities)* - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Fall 4th Year

- PHYS/ASTR Selective ≥ 300 level - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- General Education III Option (Behav./Social Science)* - Credit Hours: 3.00 *
- Science/Engineering Selective ≥ 300 - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Spring 4th Year

- Adv. Lab Option - Credit Hours: 3.00 - 4.00
- Multidisciplinary Experience (STS)* - Credit Hours: 1.00 - 3.00
- Science/Engineering Selective ≥ 300 - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-18 Credits

Notes

* Satisfies a University Core Requirement

2.0 Graduation GPA required for Bachelor of Science degree.

2.0 average in PHYS/ASTR classes required to graduate.

◆ Identified as a critical course. Students should earn minimum of a B- see advisor for further details

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ◆ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Minor

Astronomy Minor

Prerequisite Courses (6 credits)

The following prerequisite courses must be completed:

- PHYS 15200 - Mechanics or
- PHYS 17200 - Modern Mechanics

- PHYS 24100 - Electricity And Optics or
- PHYS 26100 - Electricity And Optics or
- PHYS 27200 - Electric And Magnetic Interactions

Requirements for the Minor (15-16 credits)

A. Required Courses (12-13 credits)

- ASTR 36300 - The Solar System
- ASTR 36400 - Stars And Galaxies
- ASTR 37000 - Cosmology

- PHYS 34200 - Modern Physics or
- PHYS 34400 - Modern Physics

B. Additional Course - Choose One (3 credits)

- PHYS 56000 - Stellar Evolution
- ASTR 56000 - Stellar Evolution
- PHYS 56100 - Galaxies And Large Scale Structure
- ASTR 56100 - Galaxies And Large Scale Structure
- PHYS 56200 - Introduction To High Energy Astrophysics
- ASTR 56200 - Introduction To High Energy Astrophysics
- PHYS 56300 - Astroparticle Physics
- ASTR 56300 - Astroparticle Physics
- ASTR 56700 - Observational Techniques In Astronomy
- PHYS 56700 - Observational Techniques In Astronomy
- PHYS/ASTR - Approved PHYS/ASTR at or above 400 level - Credit Hours: 3.00

Notes

- A student must receive a GPA of 2.0 or higher in required minor courses
- In addition, GPA over all PHYS and ASTR courses must be 2.0 or higher. (These requirements apply to students who matriculate at Purdue in or after Fall 2011.)
- ALL REQUIRED COURSES FOR THIS MINOR MUST BE TAKEN AT PURDUE UNIVERSITY

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Physics Minor

Minor Prerequisites

To complete the required courses listed below, the following prerequisite courses must be completed.

- PHYS 24100 - Electricity And Optics
- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- PHYS 15200 - Mechanics or
- PHYS 17200 - Modern Mechanics
- PHYS 25200 - Electricity And Optics Laboratory or
- PHYS 27200 - Electric And Magnetic Interactions

Requirements for the Minor (10-11 credits)

A student must receive a GPA of 2.0 or higher in required minor courses

Required Courses

All required courses below must be taken at Purdue University.

- PHYS 34000 - Modern Physics Laboratory
- PHYS 34200 - Modern Physics or
- PHYS 34400 - Modern Physics

Physics courses 30000-level or above (6 credits)

- PHYS 30000-59999 (Except PHYS 31700, PHYS 39000, PHYS 49000, or PHYS 59000)

Notes

- In addition, GPA over all PHYS courses must be 2.0 or higher.
- These requirements apply to students who matriculate at Purdue in or after Fall 2011.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Department of Statistics

Overview

The Department of Statistics is housed in Haas Hall and the Mathematical Sciences Building. The main office, the graduate office, and some of the department's faculty, staff, and student offices are located on the first and second floors of HAAS. The rest of the faculty, staff, and graduate students are located on the fifth, second, and ground floors of the MATH building. The Department's Graduate program is ranked in the top 10 by U.S. News and World Report, April 2008.

There are 39 tenured and tenure-track professors, 3 emeriti faculty, 5 adjunct faculty members, 7 visiting professors and 17 lecturers who form the Department of Statistics faculty. Visiting Scholars from all over the world enrich the group.

The Department of Statistics has about 433 undergraduate students majoring in statistics and/or actuarial science (a joint major with the Department of Mathematics).

The Department of Statistics has 114 graduate students, 70 are Ph.D. Students and 44 are M.S. students.

Faculty

Department of Statistics Website

Contact Information

Department of Statistics

Purdue University
250 N. University Street
West Lafayette, IN 47907-2066
USA

Phone: 1-765-494-6030

Fax: 1-765-494-0558

Administrative Contacts

Department Head: Hao Zhang zhanghao@purdue.edu

Associate Head: Tom Sellke tsellke@purdue.edu

Assistant to the Head: Linda Foster foster2@purdue.edu

Graduate Information

For Graduate Information please see Statistics Graduate Program Information.

Baccalaureate

Applied Statistics, BS

About the Program

Statistics at Purdue University is one of the largest (students and faculty) in the United States. It is consistently rated by U.S. News and World Report as one of the top departments in the country. It offers courses in fundamental statistics and probability, and also courses that focus on statistical computation to train students as future data scientists. Students enjoy a great deal of interaction with faculty as well as small classes. The department offers a master's program in which a student can earn both a bachelor's degree and a master's degree in five years.

The statistics major consists of two options:

- Applied statistics
- Mathematical statistics (Mathematical statistics usually leads to a double major in mathematics and statistics.)

Statistics - Applied Statistics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the preceding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click [here](#).

Departmental/Program Major Courses (63-93 credits)

Required Major Courses (36-40 credits)

Average GPA in courses must be 2.00 excluding Calculus I, II and III. Calculus I, II, III and MA 35100 must have a grade of C or higher.

- MA 35100 - Elementary Linear Algebra ♦ **Grade of C or better required.**
- STAT 35000 - Introduction To Statistics (satisfies Statistics Requirement)
- STAT 51200 - Applied Regression Analysis

- MA 36200 - Topics In Vector Calculus or
- STAT 42000 - Introduction To Time Series

- MA 41600 - Probability ♦ or
- STAT 41600 - Probability ♦ or
- STAT 51600 - Basic Probability And Applications ♦

- STAT 41700 - Statistical Theory or
- STAT 51700 - Statistical Inference

Calculus I Option (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Option (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Option (4-5 credits)

(satisfies Quantitative Reasoning for core) **Grade of C or better required.**

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Applied Statistics Selective (6-7 credits)

(Check with advisor for additional approved courses.)

- STAT 51300 - Statistical Quality Control or
- STAT 51400 - Design Of Experiments or
- STAT 42000 - Introduction To Time Series or
- STAT 47201 - Actuarial Models- Life Contingencies or
- STAT 50600 - Statistical Programming And Data Management or
- STAT 52200 - Sampling And Survey Techniques

Other Departmental/Program Course Requirements (27-53 credits)

* Requirement may be met with a zero credit experiential learning option. See your advisor for more information

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)

- Language I Option * (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language II Option * (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option * (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Technical Writing Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience * - Credit Hours: 0.00 - 4.00
- Multidisciplinary Experience (Select courses COULD satisfy Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00
- Great Issues Option - Credit Hours: 3.00

Electives (27-57 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition

- Elective - Credit Hours: 1.00 (STAT 19000 Recommended)
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 4.00
- Calculus I Selective - Credit Hours: 4.00 - 5.00

15-18 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing Option (CS 17700 Recommended) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-18 Credits

Fall 2nd Year

- Calculus III Option - Credit Hours: 4.00 - 5.00 ♦
- General Education I Option - Credit Hours: 3.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 5.00

15-17 Credits

Spring 2nd Year

- MA 35100 - Elementary Linear Algebra
- STAT 35000 - Introduction To Statistics Recommended for Technical Writing Option & Technical Presenting Option
- COM 21700 - Science Writing And Presentation
- Elective - Credit Hours: 3.00 - 6.00

15 Credits

Fall 3rd Year

- MA 36200 - Topics In Vector Calculus or
- STAT 42000 - Introduction To Time Series

- MA 41600 - Probability ♦ or
- STAT 41600 - Probability ♦ (or STAT 51600)

- Laboratory Science Option I - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

- STAT 41700 - Statistical Theory (or STAT 51700)
- Applied STAT Selective - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 6.00

15-17 Credits

Fall 4th Year

- STAT 51200 - Applied Regression Analysis
- General Education II Option - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 3.00
- Elective/Science, Technology & Society Selective Course - Credit Hours: 6.00 - 9.00

15-18 Credits

Spring 4th Year

- Applied STAT Selective - Credit Hours: 3.00 - 4.00
- General Education III Option - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- Elective - Credit Hours: 6.00

15-16 Credits

Notes

Student should earn minimum of a C.

Students must earn a 2.0 average in MATH/STAT/IE courses required for major. Calculus I, II, and III must have a grade of C or higher.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Data Science, BS (Statistics)

About the Program

Majoring in data science at Purdue will place you at the forefront of an emerging field and prepare you for an exciting career at the intersection of computer science and statistics.

Created jointly by Purdue's Department of Computer Science and Department of Statistics, the data science major will open pathways to careers in virtually every area of society, from healthcare, security and sustainability to education, business and economics.

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.

- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click here.

Degree Requirements

120 Credits Required

Data Science Major Courses (47-51 credits)

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ (satisfies College of Science Computing and Teambuilding requirements)
- CS 18200 - Foundations Of Computer Science
- CS 19100 - Freshman Resources Seminar
- CS 25100 - Data Structures And Algorithms
- MA 35100 - Elementary Linear Algebra
- STAT 41600 - Probability
- STAT 41700 - Statistical Theory

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus
- CS 49000 - Topics In Computer Sciences For Undergraduates - Large Scale Data Analysis (LSDA) or
- STAT 49000 - Topics In Statistics For Undergraduates - Large Scale Data Analysis (LSDA)
- CS Elective I - Credit Hours: 3.00
- CS Elective II - Credit Hours: 3.00
- STAT Elective - Credit Hours: 3.00
- Capstone Course or Experience - Credit Hours 0.00 - 3.00

Other Departmental/Program Course Requirements (45-55 credits)

- ENGL 10600 - First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- ENGL 10800 - Accelerated First-Year Composition (*satisfies Written Communication and Information Literacy for core*) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- HONR 19903 - Interdisciplinary Approaches In Writing (*satisfies Written Communication and Information Literacy for core*)
- MA 16100 - Plane Analytic Geometry And Calculus I ♦(*satisfies Quantitative Reasoning for core*) -must have C or better to meet prerequisite for CS 18200 or
- MA 16500 - Analytic Geometry And Calculus I ♦ (*satisfies Quantitative Reasoning for core*) - must have C or better to meet prerequisite for CS 18200)
- MA 16200 - Plane Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*) or
- MA 16600 - Analytic Geometry And Calculus II (*satisfies Quantitative Reasoning for core*)
- Technical Writing - COM 21700 recommended (*may satisfy Oral Communication for core*) select from list - Credit Hours: 3.00
- Technical Presentation - COM 21700 recommended (*may satisfy Oral Communication for core*) select from list - Credit Hours: 3.00
- Language I * - select three options from list - Credit Hours: 3.00 - 4.00
- Language II * - select three options from list - Credit Hours: 3.00 - 4.00
- Language and Culture III - (*may satisfy Human Cultures Humanities for core*) select three options from list - Credit Hours: 3.00 - 4.00
- General Education I - (*may satisfy Human Culture Humanities and Behavioral/Social Science for core*) select from list - Credit Hours: 3.00
- General Education II - (*may satisfy Human Culture Humanities and Behavioral/Social Science for core*) -select from list - Credit Hours: 3.00
- General Education III - select from list - Credit Hours: 3.00
- Great Issues - select from list - Credit Hours: 3.00
- Multidisciplinary Experience - (*may satisfy Science, Technology & Society for core*) - select from list - Credit Hours: 1.00 - 3.00
- Teambuilding and Collaboration Experience - CS 18000 meets requirement - select from list
- Lab Science I selective - (*satisfies Science for core*) - select from list - Credit Hours: 3.00 - 4.00
- Lab Science II selective - (*may satisfy Science for core*) - select from list - Credit Hours: 3.00 - 4.00

Electives (14-28 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click [here](#).

Program Requirements

Fall 1st Year

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ *
- CS 19100 - Freshman Resources Seminar
- CS 19300 - Tools

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00

- Elective - Credit Hours: 1.00

14-16 Credits

Spring 1st Year

- CS 18200 - Foundations Of Computer Science *
- CS 38003 - Python Programming

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

General Education I - Credit Hours: 3.00

14-16 Credits

Fall 2nd Year

- STAT 35500 - Statistics For Data Science

- CS 24200 - Introduction To Data Science or
- STAT 24200 - Introduction To Data Science

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

- Language 10200 - Credit Hours: 3.00 - 4:00
- Elective - Credit Hours: 1.00 - 3.00

14-18 Credits

Spring 2nd Year

- CS 25100 - Data Structures And Algorithms *
- MA 35100 - Elementary Linear Algebra
- STAT 41600 - Probability
- Language 20100/Culture or Diversity course - Credit Hours: 3.00 - 4.00
- Science, Techonology, and Society- Credit Hours: 1.00 - 3.00

13-16 Credits

Fall 3rd Year

- COM 21700 - Science Writing And Presentation
- CS 37300 - Data Mining And Machine Learning
- STAT 41700 - Statistical Theory
- General Education II - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Spring 3rd Year

- CS Elective I - Credit Hourse 3.00
- STAT Elective - Credit Hours: 3.00
- Great Issues - Credit Hours: 3.00
- General Education III - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Fall 4th Year

- CS 49000 - Topics In Computer Sciences For Undergraduates - Large Scale Data Analytics (LSDA) or
- STAT 49000 - Topics In Statistics For Undergraduates - Large Scale Data Analytics (LSDA)

- CS elective II - Credit Hours: 3.00
- Lab Science I - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Spring 4th Year

- Capstone Experience/Course - Credit Hours: 0.00 - 3.00
- Lab Science II - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

12-16 Credits

Notes

A minimum of 32 semester credits of upper level (30000+) required

2.0 Major and Graduation GPA required for Bachelor of Science degree.

*All CS core courses and all track requirements, regardless of department, must be completed with a grade of "C" or better.

All prerequisites to CS core courses and track requirements, regardless of department, must be completed with a grade of "C" or better.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Statistics - Math Emphasis, BS

About the Program

Statistics at Purdue University is one of the largest (students and faculty) in the United States. It is consistently rated by *U.S. News and World Report* as one of the top departments in the country. It offers courses in fundamental statistics and probability, and also courses that focus on statistical computation to train students as future data scientists. Students enjoy a great deal of interaction with faculty as well as small classes. The department offers a master's program in which a student can earn both a bachelor's degree and a master's degree in five years.

The statistics major consists of two options:

- Applied statistics
- Mathematical statistics (Mathematical statistics usually leads to a double major in mathematics and statistics.)

Statistics - Applied Statistics Website

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

1. Major
2. Science Core Curriculum
3. Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.

- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please click here.

Departmental/Program Major Courses (69-99 credits)

Required Major Courses (42-46 credits)

Average GPA in courses must be 2.00 excluding Calculus I, II and III. Calculus I, II, III and MA 35100 must have a grade of C or higher.

- MA 35100 - Elementary Linear Algebra ♦ **Grade of C or better required.**
- STAT 35000 - Introduction To Statistics (satisfies Statistics Requirement)
- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I
- MA 41600 - Probability ♦ or
- STAT 41600 - Probability ♦ or

- STAT 51600 - Basic Probability And Applications ♦
- STAT 41700 - Statistical Theory or
- STAT 51700 - Statistical Inference
- STAT 51200 - Applied Regression Analysis
- MA 35300 - Linear Algebra II With Applications

Calculus I Option (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Option (4-5 credits)

(satisfies Quantitative Reasoning for core)

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core) Grade of C or Better Required

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Advance Calculus Selective (3 credits)

- MA 36200 - Topics In Vector Calculus or
- MA 44200 - Honors Real Analysis II or
- MA 51000 - Vector Calculus

Advanced Math Selective (3-4 credits)

- MA 36600 - Ordinary Differential Equations or
- MA 37500 - Introduction To Discrete Mathematics or
- MA 42100 - Linear Programming And Optimization Techniques or
- MA 42500 - Elements Of Complex Analysis or
- MA 42800 - Introduction To Fourier Analysis or
- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors

Statistics Selective (3 credits)

- STAT 51300 - Statistical Quality Control or
- STAT 51400 - Design Of Experiments or
- STAT 42000 - Introduction To Time Series or
- IE 53000 - Quality Control

Other Departmental/Program Course Requirements (27-53 credits)

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
 - SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
 - ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)

 - Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
 - Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
 - Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
 - Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
 - General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
 - General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
 - General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science for core) - Credit Hours: 3.00
 - Computing Option - Credit Hours: 3.00 - 4.00
 - Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
 - Great Issues Option - Credit Hours: 3.00
 - Multidisciplinary Experience* (Select courses COULD satisfy Science, Technology, and Society Selective for core) - Credit Hours: 0.00 - 3.00
- * Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

Electives (21-51 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, [click here](#).

Program Requirements

Fall 1st Year

- Calculus I Option - Credit Hours: 4.00 - 5.00
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective (STAT 19000 - Topics In Statistics For Undergraduates)
- Elective - Credit Hours: 3.00 - 4.00

15-18 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing Option (rec. CS 17700 & meets Teambuilding and Collaboration Experience) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

15-18 Credits

Fall 2nd Year

- Calculus III Option - Credit Hours: 4.00 - 5.00 ♦
- General Education I Option - Credit Hours: 3.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00 MA 30100 - An Introduction To Proof Through Real Analysis
- Elective - Credit Hours: 2.00

15-17 Credits

Spring 2nd Year

- MA 35100 - Elementary Linear Algebra
- STAT 35000 - Introduction To Statistics - Credit Hours: 3.00

- Technical Writing Option and Technical Presenting Option COM 21700 - Science Writing And Presentation
- Elective - Credit Hours: 3.00 - 6.00

15 Credits

Fall 3rd Year

- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I
- MA 41600 - Probability ♦ or
- STAT 41600 - Probability ♦
- Laboratory Science I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

- MA 36200 - Topics In Vector Calculus or
- MA 44200 - Honors Real Analysis II or
- MA 51000 - Vector Calculus
- STAT 41700 - Statistical Theory or
- STAT 51700 - Statistical Inference
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- Elective - Credits Hours: 6.00

15-16 Credits

Fall 4th Year

- Advanced MA Selective - Credit Hours: 3.00
- STAT 51200 - Applied Regression Analysis
- General Education II Option - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 0.00 - 3.00
- Elective (Science, Technology & Society Selective Course) - Credit Hours: 3.00 - 6.00

15-18 Credits

Spring 4th Year

- MA 35300 - Linear Algebra II With Applications
- STAT Selective - Credit Hours: 3.00

- General Education III Option - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

Notes

- ◆ Student should earn minimum of a C.

Students must earn a 2.0 average in MATH/STAT/IE courses required for major.

Calculus I, II, III and MA 35100 must have a grade of C or higher.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ◆ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

Statistics Honors, BS

About the Program

Statistics at Purdue University is the only doctorate-granting program in statistics in Indiana and is one of the largest (students and faculty) in the United States. It is consistently rated by *U.S. News and World Report* as one of the top departments in the country. Students enjoy a great deal of interaction with faculty as well as small classes. For students with excellent preparation in high school, the department offers a master's program in which a student can earn both a bachelor's degree and a master's degree in five years.

The statistics major consists of two options:

- Applied statistics
- Mathematical statistics (Mathematical statistics usually leads to a double major in mathematics and statistics.)

Degree Requirements

120 Credits Required

Curriculum and Degree Requirements for College of Science

A College of Science degree is conferred when a student successfully completes all requirements in their degree program. Students will complete coursework or approved experiential learning activities to meet the following three degree components:

- Major
- Science Core Curriculum
- Electives

Students may use any of the following options to meet College of Science degree requirements:

- Purdue Coursework
- Ap, IB, and CLEP credit. The use of AP and IB coursework varies between College of Science degree plans.
- Transfer Credit. Students should consult the Admissions Transfer Credit Resource page for all available transfer options.

College of Science degree programs vary widely in their approval and use of the proceeding options and thus students are strongly encouraged to work closely with their academic advisors and to regularly consult their MyPurduePlan to view the use of each option in their degree plan.

Most College of Science degree programs contain elective credits students may use to pursue courses that relate to their interests or which support their major area of study. The elective area of a degree plan may also be used to complete minors, second majors and certificates such as the Entrepreneurial Certificate. With the exception of courses on the No Count List, any Purdue course may be used to meet the elective area of a student's degree plan.

College of Science Core Requirements

All Students starting Purdue University Fall semester, 2007 or later are required to pursue the 2007 Science Core curriculum.

The College of Science Core Curriculum requires the completion of approved coursework and/or experiential learning opportunities in the following academic areas:

- Composition and Presentation
- Computing
- Culture and Diversity
- General Education
- Great Issues in Science
- Laboratory Science
- Mathematics
- Multidisciplinary Experience
- Statistics
- Teambuilding and Collaboration
- No Count List

Earning Core Curricular Requirements through Experience

Students may meet selected core curriculum requirements through approved experiential learning opportunities. Interested students should contact their academic advisor for more information on this option and incorporating experiential learning into their four-year program of study. For more information on earning requirements through experience, please [click here](#).

Departmental/Program Major Courses (69-99 credits)

Required Major Courses (42-46 credits)

Average GPA in courses must be 2.00 excluding Calculus I, II, and III. An Average GPA in MA 44000, MA 44200, MA 45000, STAT 51600 or STAT 51700 must be 3.5 or higher - must take **three** of these five courses*.

- MA 35100 - Elementary Linear Algebra ♦ Grade of C or Better Required
- STAT 35000 - Introduction To Statistics (satisfies Statistics Requirement)

- MA 34100 - Foundations Of Analysis or
- MA 44000 - Honors Real Analysis I *

- MA 41600 - Probability ♦ or
- STAT 41600 - Probability ♦ or
- STAT 51600 - Basic Probability And Applications * ♦

- STAT 41700 - Statistical Theory or
- STAT 51700 - Statistical Inference *
- STAT 51200 - Applied Regression Analysis
- MA 35300 - Linear Algebra II With Applications

Calculus I Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core). Grade of C or Better Required

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I ♦

Calculus II Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core). Grade of C or Better Required

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II

Calculus III Option - Select from (4-5 credits)

(satisfies Quantitative Reasoning for core) Grade of C or Better Required

- MA 26100 - Multivariate Calculus or
- MA 27101 - Honors Multivariate Calculus

Advance Calculus Selective (3 credits)

- MA 36200 - Topics In Vector Calculus or
- MA 44200 - Honors Real Analysis II * or
- MA 51000 - Vector Calculus

Advanced MA Selective (3-4 credits)

- MA 36600 - Ordinary Differential Equations or
- MA 37500 - Introduction To Discrete Mathematics or
- MA 42100 - Linear Programming And Optimization Techniques or
- MA 42500 - Elements Of Complex Analysis or
- MA 42800 - Introduction To Fourier Analysis or
- MA 45300 - Elements Of Algebra I or
- MA 45000 - Algebra Honors * or
- MA 52000 - Boundary Value Problems Of Differential Equations
(check with advisor for additional approved courses)

STAT Selective (3 credits)

- STAT 51300 - Statistical Quality Control or
- STAT 51400 - Design Of Experiments or
- STAT 42000 - Introduction To Time Series or
- IE 53000 - Quality Control

Other Departmental/Program Course Requirements (27-53 credits)

- ENGL 10600 - First-Year Composition (satisfies Written Communication and Information Literacy for core) or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity (satisfies Written Communication and Information Literacy for core) or
- ENGL 10800 - Accelerated First-Year Composition (satisfies Written Communication and Information Literacy for core)
- Language I Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language II Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Language III/Culture/Diversity Option* (Select courses COULD satisfy Human Cultures Humanities for core) - Credit Hours: 0.00 - 4.00
- Technical Writing Option and Technical Presenting Option (Select courses COULD satisfy Oral Communication for core) - Credit Hours: 3.00 - 6.00
- Laboratory Science I Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- Laboratory Science II Option (satisfies Science Selective for core) - Credit Hours: 3.00 - 4.00
- General Education I Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education II Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- General Education III Option (Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core) - Credit Hours: 3.00
- Computing Option - Credit Hours: 3.00 - 4.00
- Teambuilding and Collaboration Experience* - Credit Hours: 0.00 - 4.00
- Great Issues Optione - Credit Hours: 3.00

- Multidisciplinary Experience* (Select courses COULD satisfy Science, Technology, and Society Selective for core)
- Credit Hours: 0.00 - 3.00
*Requirement may be met with a zero credit experiential learning option. See your advisor for more information.

Electives (21-51 credits)

University Core Requirements

- Human Cultures Humanities
- Human Cultures Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

For a complete listing of course selectives, visit the Provost's Website.

Prerequisite Information:

For current pre-requisites for courses, click here.

Program Requirements

Fall 1st Year

- Calculus I Option - Credit Hours: 4.00 - 5.00
- ENGL 10600 - First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- ENGL 10800 - Accelerated First-Year Composition
- Language I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 4.00
- Elective - STAT 19000 Seminar Recommended - Credit Hours: 1.00

15-18 Credits

Spring 1st Year

- Calculus II Option - Credit Hours: 4.00 - 5.00
- Computing Option (rec. CS 17700 & meets Teambuilding and Collaborating Experience) - Credit Hours: 3.00 - 4.00
- Language II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00

- Elective - Credit Hours: 2.00

15-18 Credits

Fall 2nd Year

- MA 26100 - Multivariate Calculus
or
- MA 27101 - Honors Multivariate Calculus
- MA 30100 - An Introduction To Proof Through Real Analysis
- General Education I Option - Credit Hours: 3.00
- Language III/Culture/Diversity Option - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 2.00

15-17 Credits

Spring 2nd Year

- MA 35100 - Elementary Linear Algebra
- STAT 35000 - Introduction To Statistics
- Technical Writing Option and Technical Presenting Option COM 21700 - Science Writing And Presentation -
Credit Hours: 3.00 - 6.00
- Elective - Credit Hours: 0.00 - 3.00
- Elective - Credit Hours: 3.00

15 Credits

Fall 3rd Year

- MA 34100 - Foundations Of Analysis *
or
- MA 44000 - Honors Real Analysis I *
- MA 41600 - Probability * ♦
or
- STAT 41600 - Probability * ♦
or
- STAT 51600 - Basic Probability And Applications * ♦
- Laboratory Science I Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Spring 3rd Year

- MA 36200 - Topics In Vector Calculus or
- MA 44200 - Honors Real Analysis II *
- STAT 41700 - Statistical Theory *
- or
- STAT 51700 - Statistical Inference *
- Laboratory Science II Option - Credit Hours: 3.00 - 4.00
- Elective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15-16 Credits

Fall 4th Year

- MA 35300 - Linear Algebra II With Applications
- STAT 51200 - Applied Regression Analysis
- General Education II Option - Credit Hours: 3.00
- Multidisciplinary Experience - Credit Hours: 0.00 - 3.00
- Elective (Science, Technology & Society Selective Course) - Credit Hours: 3.00 - 6.00

15-18 Credits

Spring 4th Year

- Advanced MA Selective MA 45000 - Algebra Honors *
- STAT Selective - Credit Hours: 3.00
- General Education III Option - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Great Issues Option - Credit Hours: 3.00

15-16 Credits

Notes

- ◆ Student should earn minimum of a C.

Students must earn a 2.0 average in MATH/STAT/IE courses required for major AND Average GPA in MA 44000, MA 44200, MA 45000, STAT 51600 or STAT 41700 must be 3.5 or higher - must take **three** of these five courses*. Calculus I, II, III and MA 35100 must have a grade of C or higher.

2.0 Graduation GPA required for Bachelor of Science degree.

Foreign Language Courses

Foreign Language proficiency requirements vary by program.

For acceptable languages and proficiency levels, see your advisor: American Sign Language, Arabic, Chinese, French, German, (ancient) Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish

Critical Course

The ♦ course is considered critical. A Critical Course is one that a student must be able to pass to persist and succeed in a particular major.

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Minor

Statistics Minor

Pre-requisite Courses for Statistics Minor

To complete the required courses for the Statistics minor, you will need to first complete the following pre-requisite courses [by completing the course or establishing credit]. These courses are not part of the Statistics minor.

- MA 16500 - Analytic Geometry And Calculus I or
- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16010 - Applied Calculus I [Note: students only completing MA 16010 will have limited pathways to finish the minor due to pre-requisites]

Requirements for the Minor (15 credits)

To obtain a minor in Statistics, the following courses must be completed. A course can only be used in one area.

3 credits from AREA 1, 3 credits from AREA 2, 3 credits from AREA 3, 6 credits from AREA 4 = 15 TOTAL Credits

Area 1 - Choose One (3 credits)

- STAT 35000 - Introduction To Statistics
- STAT 35500 - Statistics For Data Science
- STAT 50300 - Statistical Methods For Biology
- STAT 51100 - Statistical Methods
- MGMT 30500 - Business Statistics (Management students only)

Area 2 - Choose One (3 credits)

- STAT 22500 - Introduction To Probability Models
- STAT 31100 - Introductory Probability
- STAT 41600 - Probability
- MA 41600 - Probability
- IE 23000 - Probability And Statistics In Engineering I (Industrial Engineering students only)*

Area 3 (3 credits)

- STAT 51200 - Applied Regression Analysis

Area 4 - Choose Two (6 credits)

- IE 33600 - Operations Research - Stochastic Models
- STAT 41700 - Statistical Theory
- STAT 51400 - Design Of Experiments

- STAT 51300 - Statistical Quality Control or
- IE 53000 - Quality Control

Due to Minor Requirements and Pre-requisites, Below are the Suggested Pathways for Specific Majors

Krannert Students

- STAT 22500 - Introduction To Probability Models
- MGMT 30500 - Business Statistics
- STAT 51200 - Applied Regression Analysis
- STAT 51300 - Statistical Quality Control
- STAT 51400 - Design Of Experiments

IE Majors

- IE 23000 - Probability And Statistics In Engineering I
- STAT 51200 - Applied Regression Analysis
- STAT 51400 - Design Of Experiments

- STAT 51300 - Statistical Quality Control or
- IE 53000 - Quality Control

Pharmacy, Nursing, Biology, Agriculture Majors

- STAT 50300 - Statistical Methods For Biology
- STAT 22500 - Introduction To Probability Models
- STAT 51200 - Applied Regression Analysis
- STAT 51300 - Statistical Quality Control
- STAT 51400 - Design Of Experiments

MATH Majors

- STAT 35000 - Introduction To Statistics

- STAT 41600 - Probability
- STAT 51200 - Applied Regression Analysis
- STAT 41700 - Statistical Theory
- STAT 51400 - Design Of Experiments

Science

- STAT 51100 - Statistical Methods
- STAT 22500 - Introduction To Probability Models
- STAT 51200 - Applied Regression Analysis
- STAT 51300 - Statistical Quality Control
- STAT 51400 - Design Of Experiments

Notes

- ALL COURSES FOR THIS MINOR MUST BE TAKEN AT PURDUE UNIVERSITY
- AT LEAST 9 credits of the 15 credit hour minor must be STAT courses.
- *IE 53000 and MA 41600 are considered a STAT course due to cross-listing
- Students Majoring in Actuarial Science, Actuarial Science Honors, Data Science, Applied Statistics, Mathematical Statistics, Statistics with Math, and/or Statistics Honors cannot complete this minor.
- Students must earn a 2.0 average in MATH/STAT/IE courses required for the minor.
- Courses that do not require calculus, such as PSY 20100 and SOC 38200 are not equivalent to the courses listed.
- Credit for the STAT minor is not allowed for more than one course in each group (per Course Catalog descriptions):
- STAT 22500, STAT 31100, STAT 41600 or MA 41600
- STAT 30100, STAT 35000, STAT 50100
- STAT 50300 and STAT 51100

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Pre-Program

Data Science First Year (Statistics)

Data Science First Year (28-32 credits)

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ * (satisfies College of Science Computing and Teambuilding requirements)
- CS 18200 - Foundations Of Computer Science
- CS 19100 - Freshman Resources Seminar
- CS 19300 - Tools
- CS 38003 - Python Programming
- ENGL 10600 - First-Year Composition or

- ENGL 10800 - Accelerated First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ * or
- MA 16200 - Plane Analytic Geometry And Calculus II

- MA 16500 - Analytic Geometry And Calculus I ♦ * or
- MA 16600 - Analytic Geometry And Calculus II

- Elective - Credit Hours: 1.00
- General Education I - Credit Hours: 3.00

Program Requirements

Fall 1st Year

Fall 1st Year

- CS 18000 - Problem Solving And Object-Oriented Programming ♦ *
- CS 19100 - Freshman Resources Seminar
- CS 19300 - Tools

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00

- MA 16100 - Plane Analytic Geometry And Calculus I ♦ * or
- MA 16500 - Analytic Geometry And Calculus I ♦ *

- Elective - Credit Hours: 1.00

14-16 Credits

Spring 1st Year

Spring 1st Year

- CS 18200 - Foundations Of Computer Science
- CS 38003 - Python Programming

- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- Language 10100 - Credit Hours: 3.00 - 4.00

- MA 16200 - Plane Analytic Geometry And Calculus II or

- MA 16600 - Analytic Geometry And Calculus II
- General Education I - Credit Hours: 3.00

14-16 Credits

Notes

* All CS core courses and all track requirements, regardless of department, must be completed with a grade of "C" or better.

All prerequisites to CS core courses and track requirements, regardless of department, must be completed with a grade of "C" or better.