PURDUE UNIVERSITY

Mathematics with Computer Science
College of Science

MATH-BS
Code-MACS

Departmental/Program Major Courses (70-98 credits)

Required Major Courses (35-36 credits): Average GPA in courses must be 2.00 excluding Calculus III Selective

_____ (4-5) Calculus III Selective – Select from MA 26100, MA 27101 ***(satisfies Quantitative Reasoning for core)***
_____ (3) MA 35100 Elementary Linear Algebra
_____ (3) MA 37500 Introduction To Discrete Mathematics
_____ (4) MA 36600 Ordinary Differential Equations
_____ (3) CS 24000 Programming In C
_____ (6) MACS Math Selective: MA 35300 - Linear Algebra II With Applications/MA 38500 - Introduction To Logic / MA 45300 - Elements Of Algebra I or MA 45000 - Algebra Honors
_____ (3) CS 25100 Data Structures And Algorithms
_____ (3) CS 31400/MA 51400 Numerical Methods
_____ (3) MA/STAT Selective: MA 34100 - Foundations Of Analysis/MA 36200 - Topics In Vector Calculus/MA or STAT 41600 – Probability/MA 42100 - Linear Programming And Optimization Techniques/MA 42500 - Elements Of Complex Analysis/MA 46200 - Elementary Differential Geometry/STAT 42000 – Introduction to Time Series/MA 45300 - Elements Of Algebra I or MA 45000 - Algebra Honors/MA 44000 - Real Analysis Honors/MA 44200 - Multivariate Analysis I Honors/MA 51800 - Advanced Discrete Mathematics
_____ (3) CS Selective: CS 38100 - Introduction To The Analysis Of Algorithms/CS 33400 - Fundamentals Of Computer Graphics/CS 48300 - Introduction To The Theory Of Computation/CS 51400 - Numerical Analysis/CS 51500 -Numerical Linear Algebra/CS 52000 - Computational Methods In Optimization

Other Departmental /Program Course Requirements (35-62 credits)

_____ (4-5) Calculus I Selective – Select from MA 16100, MA 16500 ***(satisfies Quantitative Reasoning for core)***
_____ (4-5) Calculus II Selective – Select from MA 16200, MA 16600 ***(satisfies Quantitative Reasoning for core)***
_____ (3-4) ENGL 10600 or ENGL 10800 - ***(satisfies Written Communication and Information Literacy for core)***
_____ (0-4) Language I Selective –LINK
_____ (0-4) Language II Selective – LINK
_____ (0-4) Language and Culture III Selective –*LINK* ***(Select courses COULD satisfy Human Cultures Humanities for core)***
_____ (0-3) Technical Writing Selective LINK ***(Select courses COULD satisfy Oral Communication for core)***
_____ (0-3) Technical Presenting Selective LINK ***(Select courses COULD satisfy Oral Communication for core)***
_____ (3-4) Laboratory Science I Selective LINK ***(satisfies Science Selective for core)***
_____ (3-4) Laboratory Science II Selective LINK ***(satisfies Science Selective for core)***
_____ (3) General Education I Selective LINK ***(Select courses COULD satisfy Human Culture Behavioral/Social Science for core)***
_____ (3) General Education II Selective LINK ***(Select courses COULD satisfy Human Culture Behavioral/Social Science for core)***
_____ (3) General Education III Selective LINK ***(Select courses COULD satisfy Human Culture Behavioral/Social Science for core)***
_____ (3) STAT 35000 Introduction To Statistics
_____ (3-4) Computing Selective LINK – CS 18000 Prob. Solving & O-O Programming
_____ (0) Teambuilding Experience LINK
_____ (0-3) Multidisciplinary Experience LINK ***(Select courses COULD satisfies Science, Technology, and Society Selective for core)***
_____ (3) Great Issues Selective LINK

Electives (22-50 credits)

_____ ( ) _____ ____ ( ) _____ ____ ( ) _____ ____ ( ) _____
_____ ( ) _____ ____ ( ) _____ ____ ( ) _____ ____ ( ) _____

University Core Requirements LINK

Human Cultures Humanities	☐	*Science, Technology & Society Selective*	☐
Human Cultures Behavioral/Social Science	☐	*Written Communication*	☐
Information Literacy	☐	*Oral Communication*	☐
Science Selective	☐	*Quantitative Reasoning*	☐
Science Selective	☐		

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

Degree Works is knowledge source for specific requirements and completion

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Revised 2/2015 (effective Fall 2015)

Mathematics with Computer Science

http://www.science.purdue.edu/Current_Students/majors/index.html

Suggested Arrangement of Courses:

Credits	**Fall 1st Year**	**Prerequisite**	Credits	**Spring 1st Year**	**Prerequisite**
4-5	Calculus I Selective	ALEKS 85	4-5	Calculus II Selective	Calculus I
3-4	ENGL 10600/10800		4	CS 18000 – CS 18000 Prob. Solving & O-O Programming	
3-4	Language I Selective		3-4	Language II Selective	Language 10100
1	Free Elective MA 10800		0	Teambuilding Experience	
4	Free Elective CS 17700		3	Free Elective	
			1	Free Elective	
15-18			**15-17**		

Credits	**Fall 2nd Year**	**Prerequisite**	Credits	**Spring 2nd Year**	**Prerequisite**
4-5	Calculus III Selective	Calculus II	3	MA 35100 Elementary Linear Algebra	Calculus III
3	STAT 35000 Introduction To Statistics	Calculus II	3	MA 37500 Introduction To Discrete Mathematics	Calculus III
3-4	Language Selective III	See Course Info	3	COM 21700 Science Writing & Presentation	
3	General Education I Selective		3	General Education II Selective	
2	Free Elective		3	Free Elective	
15-17			**15**		

Credits	**Fall 3rd Year**	**Prerequisite**	Credits	**Spring 3rd Year**	**Prerequisite**
4	MA 36600 Ordinary Differential Equations	Calculus III; co-req or pre MA 35100	3	MACS Math Selective	Varies by Class
3	CS 24000 Programming In C	CS 18000	3	CS 25100 Data Structures And Algorithms	CS 24000
3-4	Laboratory Science I Selective		3-4	Laboratory Science II Selective	Lab Sci Selective I
3	Free Elective		6	Free Elective	
2	Free Elective				
15-16			**15-16**		

Credits	**Fall 4th Year**	**Prerequisite**	Credits	**Spring 4th Year**	**Prerequisite**
3	CS 31400/MA 51400 Numerical Methods	CS Programming and MA 35100	3	MA/STAT Selective	Varies by Class
3	MA Selective I	Varies by Class	3	CS Selective	Varies by Class
3	General Education III Selective		0-4	Multidisciplinary	
6	Free Elective/ Science, Technology & Society Selective Course		3	Great Issues Selective	Jr/Sr Standing; may require COM or ENGL
			3-6	Free Elective	
15			**12-18**		

Identified as a critical course. Student should earn minimum of a B- see advisor for further details.

Students must earn a 2.0 average in MATH/STAT/CS courses required for major.

120 semester credits required for Bachelor of Science degree.

2.0 Graduation GPA required for Bachelor of Science degree.

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