PURDUE UNIVERSITY

Mathematics with Computer Science
College of Science

MATH-BS
Code-MACS
120 Credits

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

_____ (4-5) Calculus I Option – Select from MA 16100, MA 16500 ***(satisfies Quantitative Reasoning for core)*** CC
_____ (4-5) Calculus II Option – Select from MA 16200, MA 16600 ***(satisfies Quantitative Reasoning for core)***
_____ (4-5) Calculus III Option – Select from MA 26100, MA 27101 ***(satisfies Quantitative Reasoning for core)***
_____ (3) MA 35100 Elementary Linear Algebra CC
_____ (3) MA 37500 Introduction To Discrete Mathematics
_____ (4) MA 36600 Ordinary Differential Equations
_____ (3) CS 24000 Programming In C
_____ (3) CS 25100 Data Structures And Algorithms
(3) CS 31400 or MA 51400 Numerical Methods
_____ (6) MACS Math Selective: MA 35300 - Linear Algebra II With Applications/MA 38500 - Introduction To Logic / MA 45000 - Algebra Honors or MA 45300 - Elements Of Algebra I
_____ (3) CS Selective: CS 33400 - Fundamentals Of Computer Graphics/CS 38100 - Introduction To The Analysis Of Algorithms/CS 48300 - Introduction To The Theory Of Computation/CS 51400 - Numerical Analysis/CS 51500 -Numerical Linear Algebra/CS 52000 - Computational Methods In Optimization
_____ (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/STAT 42000 – Introduction to Time Series/MA 45000 - Algebra Honors or MA 45300 - Elements Of Algebra I/MA 44000 - Real Analysis Honors/MA 44200 - Multivariate Analysis I Honors/MA 51800 - Advanced Discrete Mathematics

Other Departmental /Program Course Requirements (30-56 credits)

_____ Met within Major Calculus I Option – Select from MA 16100, MA 16500 ***(satisfies Quantitative Reasoning for core)*** CC
_____ Met within Major Calculus II Option – 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 Option* ***(Select courses COULD satisfy Human Cultures Humanities for core)***
_____ (0-4) Language II Option* ***(Select courses COULD satisfy Human Cultures Humanities for core)***
_____ (0-4) Language III/Culture/Diversity Option* ***(Select courses COULD satisfy Human Cultures Humanities for core)***
_____ (3-6) Technical Writing Option and Technical Presenting Option ***(Select courses COULD satisfy Oral Communication for core)***
_____ (3-4) Laboratory Science I Option ***(satisfies Science Selective for core)***
_____ (3-4) Laboratory Science II Option ***(satisfies Science Selective for core)***
_____ (3) General Education I Option ***(Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core)***
_____ (3) General Education II Option ***(Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core)***
_____ (3) General Education II Option ***(Select courses COULD satisfy Human Culture Behavioral/Social Science or Humanities for core)***
_____ (3) STAT 35000 Introduction To Statistics
_____ (3-4) Computing Option
_____ (0-4) Teambuilding and Collaboration Experience*
_____ (3) Great Issues Option
_____ (0-3) Multidisciplinary Experience* ***(Select courses COULD satisfies Science, Technology, and Society Selective for core)***

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

Electives (18-47 credits)

_____ ( ) _____ _____ ( ) _____ _____ ( ) _____ _____ ( ) _____
_____ ( ) _____ _____ ( ) _____ _____ ( ) _____ _____ ( ) _____

University Core Requirements

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) MyPurduePlan is knowledge source for specific requirements and completion

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Mathematics with Computer Science

Suggested Arrangement of Courses:

Credits	**Fall 1st Year**	**Prerequisite**	Credits	**Spring 1st Year**	**Prerequisite**
4-5	Calculus I Option[cc]	ALEKS 85	4-5	Calculus II Option	Calculus I C- or higher
3-4	ENGL 10600/10800		4	CS 18000 – CS 18000 Prob. Solving & O-O Programming (meets Computing / Teambuilding& Collaboration)	Calculus I C or higher or co-req
3-4	Language I Option		3-4	Language II Option	Language 10100
1	Free Elective (MA 10800)				
4	Free Elective or Computing Option (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 Option	Calculus II C- or higher	3	MA 35100[cc] Elementary Linear Algebra	Calculus III C- or higher
3	STAT 35000 Introduction To Statistics	Calculus II C- or higher	3	MA 37500 Introduction To Discrete Mathematics (used as CS 18200 pre-requisite)	Calculus III C- or higher
3-4	Language III/Culture/Diversity Option	See Course Info	3-6	Technical Writing Option and Technical Presenting Option (COM 21700)	
3	General Education I Option		3	General Education II Option	
2	Free Elective		0-3	Free Elective	
15-17			**15**		

Credits	**Fall 3rd Year**	**Prerequisite**	Credits	**Spring 3rd Year**	**Prerequisite**
4	MA 36600 Ordinary Differential Equations	Co-req or pre MA 35100 C- or higher	3	MACS Math Selective I	Varies by Class
3	CS 24000 Programming In C	CS 18000 and MA 37500 C or higher	3	CS 25100 Data Structures And Algorithms	CS 24000 and MA 37500 C or higher
3-4	Laboratory Science I Option		3-4	Laboratory Science II Option	Lab Sci Option 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 C or higher	3	MA/STAT Selective	Varies by Class
3	MACS Math Selective II	Varies by Class	3	CS Selective	Varies by Class
3	General Education III Option		0-4	Multidisciplinary Experience	
6	Free Elective (Science, Technology & Society Selective Course)		3	Great Issues Option	Jr/Sr Standing; may require COM or ENGL
			3-6	Free Elective	
15			**15-18**		

[cc] Identified as a critical course. Student should earn minimum of a B- see advisor for further details.
Courses in ( ) are recommended.

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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