PURDUE UNIVERSITY

Operations Research Mathematics
College of Science

MATH-BS
Code-MAOR
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
_____ (4) MA 36600 Ordinary Differential Equations
_____ (3) MA, CS, STAT Selective – CS 52000 Computational Methods In Optimization/ MA 34100 Foundations Of Analysis or MA 44000 Real Analysis Honors/MA 52300 Introduction To Partial Differential Equations/MA 54300 Introduction To The Theory Of Ordinary Differential Equations/STAT 42000 - Introduction To Time Series
_____ (3) MA 35300 Linear Algebra II With Applications
_____ (3) Advanced Calculus Selective: MA 36200 Topics In Vector Calculus/MA 44200 - Multivariate Analysis I Honors
_____ (3) CS 31400/MA 51400 Numerical Methods
_____ (3) MA 45300 - Elements Of Algebra I or MA 45000 - Algebra Honors
_____ (3) Probability/Discrete Mathematics Selective: MA or STAT 41600 - Probability, STAT 51600 - Basic Probability And Applications, or MA 37500 - Introduction To Discrete Mathematics
_____ (3) STAT 41700 - Statistical Theory or STAT 51700 - Statistical Inference
_____ (3) MAOR Math Selective: MA 42100 - Linear Programming And Optimization Techniques [offered spring semester of odd years] or IE 33500 - Operations Research - Optimization

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	☐		

****

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

(Degree Works) MyPurduePlan is knowledge source for specific requirements and completion

****

Operations Research Mathematics

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 or ENGL 10800		3-4	Computing Option(CS 17700 Meets Teambuilding and Collaboration Experience)	
3-4	Language I Option		3-4	Language II Option	Language 10100
1	Free Elective (MA 10800)				
3-4	Free Elective		3	Free Elective	
			2	Free Elective	
15-17			**15-18**		

Credits	**Fall 2nd Year**	**Prerequisite**	Credits	**Spring 2nd Year**	**Prerequisite**
4-5	Calculus III Option	Calculus II C- or higher	3	Probability/Discrete Mathematics Selective	Calculus III C- or higher
3	STAT 35000 Introduction To Statistics	Calculus II C- or higher	3	MA 35100 [cc] Elementary Linear Algebra	Calculus III C- or higher
3-4	Language III/Culture/Diversity Option	See Course Info	3	General Education I Option	
3	Free Elective (MA 30100)	Calculus II C- or higher	3-6	Technical Writing Option and Technical Presenting Option (COM 21700)	
2	Free Elective		0-3	Free Elective	
15-17			**15**		

Credits	**Fall 3rd Year**	**Prerequisite**	Credits	**Spring 3rd Year**	**Prerequisite**
3	STAT 41700 Statistical Theory (or STAT 51700)	STAT 3500 and STAT 41600 C- or higher	3	Advance Calculus Selective	Varies by Class
3	MA, CS, STAT Selective	Varies by Class	3	CS 31400/MA 51400 Numerical Methods	CS Programming and MA 35100 C or higher
3-4	Laboratory Science I Option		3-4	Laboratory Science II Option	Lab Sci Option I
3	Free Elective		3	Great Issues Option	Jr/Sr Standing; may require COM or ENGL
3	Free Elective		3	Free Elective	
15-16			**15-16**		

Credits	**Fall 4th Year**	**Prerequisite**	Credits	**Spring 4th Year**	**Prerequisite**
3	MA 35300 Linear Algebra II With Applications	MA 35100 C- or higher	3	MAOR Math Selective	Varies by Class
3	MA 45300 or MA 45000	MA 35100 C- or higher	4	MA 36600 Ordinary Differential Equations	Co-req or pre MA 35100 C- or higher
3	General Education II Option		3	General Education III Option	
0-4	Multidisciplinary Experience		3	Free Elective	
3-6	Free Elective (Science, Technology & Society Selective Course)		2	Free Elective	
15-17			**15**		

[cc] 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/IE courses required for major.

120 semester credits required for Bachelor of Science degree.

2.0 Graduation GPA required for Bachelor of Science degree.

****

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

(Degree Works) MyPurduePlan is knowledge source for specific requirements and completion

****

Revised 2/2016 (effective Fall 2016)