

Bachelor of Science in Mathematics

2018 Curriculum, Approved during the 5th UPC UC on 2018 June 13

Study Plan

Effective First Semester AY 2018-2019



First Year, First Semester				
GE	COMM 10	Critical Perspectives in Communication	3	none
GE	MATH 10	Mathematics, Culture and Society	3	none
GE	SAS 1	Self and Society	3	none
Foundation	MATH 53	Elementary Analysis I	5	none
Foundation	MATH 102	Logic and Set Theory	3	none
Foundation	STAT 104	Descriptive Statistics	3	none
PE	PE 2		(2)	none
NSTP	NSTP 1	National Service Training Program 1	(3)	none
			20	

First Year, Second Semester				
GE	ARTS 1	Critical Perspectives in the Arts	3	none
GE	SCIENCE 11	Living Systems: Concepts and Dynamics	3	none
GE	STS 1	Science, Technology and Society	3	none
Foundation	MATH 54	Elementary Analysis II	5	MATH 53
Core	MATH 111	Abstract Algebra I	3	MATH 53, MATH 102
Core	STAT 121	Probability Theory I	3	MATH 54 (co), MATH 102
PE	PE 2		(2)	none
NSTP	NSTP 2	National Service Training Program 2	(3)	none
			20	

Second Year, First Semester				
GE	ETHICS 1	Ethics and Moral Reasoning in Everyday Life	3	none
Foundation	CMSC 11	Introduction to Computer Science	3	none
Foundation	MATH 55	Elementary Analysis III	3	MATH 54
Core	MATH 114	Linear Algebra	3	MATH 54
Core	STAT 122	Probability Theory II	3	STAT 121
Foundation	PHYSICS 81	Intermediate Physics 1	3	MATH 40 or MATH 53
Foundation	PHYSICS 81.1	Intermediate Physics 1 Laboratory	1	PHYSICS 81 (co)
PE	PE 2		(2)	none
			19	

Second Year, Second Semester				
GE	KAS 1	Kasaysayan ng Pilipinas	3	none
Foundation	CMSC 21	Fundamentals of Programming	3	CMSC 11
Core	MATH 112	Abstract Algebra II	3	MATH 111
Foundation	PHYSICS 82	Intermediate Physics 2	3	PHYSICS 81, PHYSICS 81.1
Foundation	PHYSICS 82.1	Intermediate Physics 2 Laboratory	1	PHYSICS 82 (co)
Core	STAT 131	Parametric Statistical Inference	4	STAT 122
PE	PE 2		(2)	none
			17	

Third Year, First Semester				
GE	GE Elective	GE Elective	3	none
Core	CMSC 123	Data Structures	4	CMSC 21, (CMSC 57 or MATH 102)
Core	MATH 121	Advanced Calculus I	3	MATH 55, MATH 102 or its equivalent
Core	MATH 131	Modern Geometry	3	MATH 102, MATH 114
Core	MATH 161	Elementary Differential Equations	3	MATH 55, MATH 102 or its equivalent
Core	STAT 136	Regression and Correlation Analysis	3	MATH 114, STAT 131
			19	

Third Year, Second Semester				
GE	GE Elective	GE Elective	3	none
Core	MATH 123	Complex Analysis I	3	MATH 55, MATH 102 or its equivalent
Core	MATH 141	Elementary Topology	3	MATH 102, MATH 121
Core	MATH 189	Scientific Writing in Mathematics	3	has earned 53 units of Mathematics and Statistics courses
Elective	Elective	Elective	3	
Elective	Elective	Elective	3	
			18	

Fourth Year, First Semester				
GE	GE Elective	GE Elective	3	none
Core	MATH 165	Introduction to Mathematical Modeling	3	CMSC 21, MATH 123, MATH 131, MATH 161
Core	MATH 198.1	Special Problem	1	CMSC 123, MATH 112, MATH 123, MATH 131, MATH 141, MATH 161, STAT 136 or its equivalents (waiver not allowed)
Elective	Elective	Elective	3	
Elective	Elective	Elective	3	
Elective	Elective	Elective	3	
Elective	Free Elective	Free Elective	3	
			19	

Fourth Year, Second Semester				
GE	GE Elective	GE Elective	3	none
Core	MATH 198.2	Special Problem (Continuation)	3	MATH 198.1
Mandated	PI 100	The Life and Works of Jose Rizal	3	none
Elective	Elective	Elective	3	
Elective	Elective	Elective	3	
Elective	Elective	Elective	3	
			18	

Total Required Units 150

ELECTIVES*					
Computer Science	CMSC 23	Programming Paradigms	3	CMSC 21 or COI	
	CMSC 124	Design and Implementation of Programming Languages	3	CMSC 123, CMSC 141	
	CMSC 125	Operating Systems	3	CMSC 124, CMSC 133	
	CMSC 127	File Processing and Database Systems	3	CMSC 123	
	CMSC 128	Software Engineering 1	3	CMSC 123	
	CMSC 129	Software Engineering 2	3	CMSC 128	
	CMSC 130	Logic Design and Digital Computer Circuits	3	CMSC 11	
	CMSC 133	Introduction to Computer Organization, Architecture, and Machine-level Programming	3	CMSC 130	
	CMSC 141	Introduction to the Theory of Computation	3	CMSC 57	
	CMSC 142	Design and Analysis of Algorithms	3	CMSC 123	
	CMSC 143	Computability	3	MATH 102	
	CMSC 170	Introduction to Artificial Intelligence	3	CMSC 123	
	CMSC 173	Machine Learning	3	CMSC 170	
	**	CMSC 176	Topics in Theoretical Computer Science (Topic to be indicated)	3	Junior Standing
**	CMSC 177	Topics in Net-Centric Computing (Topic to be indicated)	3	Junior Standing	
**	CMSC 178	Topics in Software Technology (Topic to be indicated)	3	Junior Standing	
**	CMSC 179	Topics in Computer Systems (Topic to be indicated)	3	Junior Standing	
Mathematics	MATH 116	Elementary Theory of Numbers	3	MATH 102	
	MATH 122	Advanced Calculus II	3	MATH 121	
	MATH 124	Complex Analysis II	3	MATH 123	
	MATH 125	Real Analysis	3	MATH 121	
	MATH 127	Vector Analysis	3	MATH 55	
	MATH 129	Introduction to Fourier Analysis	3	MATH 121, MATH 123	
	MATH 140	Graph Theory and Combinatorics	3	MATH 111	
	MATH 163	Introduction to Mathematical Biology	3	MATH 114, MATH 161	
	MATH 164	Introduction to Partial Differential Equations	3	MATH 121, MATH 161	
	MATH 173	Numerical Methods I	3	MATH 55, MATH 114	
	MATH 174	Numerical Methods II	3	CMSC 11, MATH 173	
	MATH 178	Mathematical Economics	3	ECON 11	
	MATH 181	Linear Programming and Applications	3	MATH 114	
	MATH 182	Nonlinear Programming	3	MATH 165, MATH 181	
	MATH 183	Integer and Dynamic Programming	3	MATH 181	
	**	MATH 197	Special Topics (Topic to be indicated)	3	COI
	Statistics	STAT 115	Basic Statistical Methods	3	STAT 101 or STAT 104 or its equivalent
STAT 125		Applications Software and Software Packages	3	STAT 101 or STAT 104 or its equivalent	
STAT 132		Nonparametric Statistical Inference	3	STAT 131	
STAT 133		Bayesian Statistical Inference	3	STAT 131	
STAT 138		Introduction to Sampling Designs	3	STAT 131	
STAT 143		Survey Operations	3	MATH 189, STAT 132, STAT 136, STAT 138	
STAT 145		Introduction to Time Series Analysis and Forecasting	3	STAT 136	
STAT 146		Introduction to Exploratory Data Analysis	3	STAT 136	
STAT 147		Introduction to Multivariate Analysis	3	STAT 136	
STAT 148		Introduction to Experimental Designs	3	STAT 136	
STAT 149		Introduction to Categorical Data Analysis	3	STAT 136	
STAT 151		Computer Programming Applied to Statistical Problems	3	none	
STAT 171		Elementary Economic Statistics	3	STAT 136	
STAT 174		Elementary Statistical Quality Control	3	STAT 131	
STAT 175		Introduction to Demographic Statistics	3	STAT 131	
STAT 179		Statistics for Business Decisions	3	STAT 121	
**		STAT 197	Special Topics in Statistics (Topic to be indicated)	3	COI

* Any non-GE Mathematics, Computer Science, or Statistics course within the UP System approved by the College of Science.

** may be taken twice provided that the topics are different