

BACHELOR OF SCIENCE IN MATHEMATICS

Option in Applied Mathematics (Suboption I: Application in Science and Engineering)

Major Requirements Worksheet

2018-2019 Catalog

NOTE: This checklist is not intended to replace advising from the major department. Students should consult with the major advisor to determine the appropriate sequence of courses. This checklist is to inform students of major requirements and course prerequisites only; the [CSULB Course Catalog](#) takes precedence in any conflict. CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification.

Many prerequisites require a "C" or better, please check the catalog for grade requirements.

Take ALL of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CECS 174	Introduction to Programming and Problem Solving (3)	CECS 100 and MATH 113
		ENGL 317	Technical Communication (3)	GE Foundation requirements, upper-division standing, and a previous composition course
		MATH 122	Calculus I (4)	Appropriate algebra/calculus placement; or MATH 111 and either MATH 112B or 113
		MATH 123	Calculus II (4)	MATH 122
		MATH 224	Calculus III (4)	MATH 123 or 222
		MATH 247	Introduction to Linear Algebra (3)	MATH 123
		PHYS 151	Mechanics and Heat (4)	<i>Pre/Corequisite:</i> MATH 122 or 123 or 224
		PHYS 152	Electricity and Magnetism (4)	PHYS 151. <i>Pre/Corequisite:</i> MATH 123

Take ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CE 205	Analytical Mechanics I (Statics) (3)	PHYS 151. <i>Pre/Corequisite:</i> MATH 123
		EE 211	Electric and Electronic Circuits (3)	EE 210+210L or PHYS 152; MATH 123 or equivalent
		PHYS 254	Applied Modern Physics (3)	PHYS 152 or EE 210. <i>Pre/Corequisite:</i> MATH 224

UPPER DIVISION COURSES (see major faculty advisor)

Take ALL of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 323	Introduction to Numerical Analysis (4)	MATH 224, and a course in computer programming
		MATH 361A	Introduction to Mathematical Analysis I (3)	MATH 224; MATH 233 or 247

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 361B	Introduction to Mathematical Analysis II (3)	MATH 361A
		MATH 364A	Ordinary Differential Equations I (3)	MATH 224. <i>Pre/Corequisite:</i> MATH 247
		MATH 364B	Ordinary Differential Equations II (3)	MATH 364A or 370A
		MATH 380	Probability and Statistics (3)	MATH 224
		MATH 470	Introduction to Partial Differential Equations (3)	MATH 364A or 370A

Take a minimum of NINE units from the following:

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 423	Intermediate Numerical Analysis (3)	MATH 247 and 323
		MATH 461	Introduction to Complex Analysis (3)	MATH 361A
		MATH 463	Multivariable Calculus (3)	MATH 224 and 247 and 361B
		MATH 472	Fourier Analysis (3)	MATH 364A or 370A
		MATH 474	Mathematics of Financial Derivatives (3)	MATH 364A or 370A; MATH 380
		MATH 479	Mathematical Modeling (3)	MATH 247 and 323; MATH 364A or 370A; instructor consent
		MATH 485	Mathematical Optimization (3)	MATH 247; MATH 323 or 347 or 380
		STAT 381	Mathematical Statistics (3)	MATH 247 and 380
		STAT 482	Random Processes (3)	MATH 247 and 380

Take a minimum of 9 UNITS from ONE of the following groups:

GROUP A	GROUP B	GROUP C
PHYS 310, 340A, 340B, 350, 410, 422, 450	EE 310, 370, 382, 460, 482	CE 335, 359, 437, 438, 458; MAE 371, 373

Semester	Grade	Course #	Course Title	Prerequisites