CNSM CSULB
CALIFORNIA STATE UNIVERSITY LONG BEACH

CNSM Academic Advising
College of Natural Sciences and Mathematics
www.csulb.edu/cnsm/advising

BACHELOR OF SCIENCE IN MATHEMATICS

Option in Applied Mathematics (*Suboption II: Application in Economics and Finance*)
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

Take ONE of the following groups:

Semester	Grade	Course #	Course Title	Prerequisites
		ECON 100 + ECON 101	Principles of Macroeconomics (3) Principles of Microeconomics (3)	MATH 103 or higher; MATH 103 or higher
		ECON 300	Fundamentals of Economics (3)	GE Foundation requirements

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, and MATH 233 or 247
		MATH 361B	Introduction to Mathematical Analysis II (3)	MATH 361A

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 364A	Ordinary Differential Equations I (3)	MATH 224. *Pre/Corequisite:* MATH 247
		MATH 380	Probability and Statistics (3)	MATH 224
		STAT 381	Mathematical Statistics (3)	MATH 247 and 380

Take a minimum of TWELVE units from the following: *(*one course must be MATH 474 or 485)*

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 364B	Ordinary Differential Equations II (3)	MATH 364A or 370A
		MATH 423	Intermediate Numerical Analysis (3)	MATH 247 or 323
		MATH 463	Multivariable Calculus (3)	MATH 224 and 247 and 361B
		MATH 470	Introduction to Partial Differential Equations (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 410	Applied Regression Analysis (3)	STAT 381
		STAT 482	Random Processes (3)	MATH 247 and 380

Take a minimum of FIFTEEN units from ONE of the following groups:

GROUP A	GROUP B
Take BOTH of the following courses:	**Take BOTH of the following courses:**
• ECON 310 Microeconomic Theory (3) • ECON 311 Macroeconomic Theory (3)	• FIN 300 Business Finance (3) • FIN 350 Investment Principles (3)
Take 9 units selected from the following:	**Take 9 units selected from the following:**
ECON 320, 410, 411, 420, 485, 486	FIN 450, FIN 460, FIN 480, FIN 485, FIN 490

Semester	Grade	Course #	Course Title	Prerequisites