

# PURE MATHEMATICS CONCENTRATION, MATHEMATICAL SCIENCES (BS)

This concentration provides a broad mathematical exposure for students who are interested in studying and/or doing mathematical research at the graduate level.

## Concentration Requirements

Course	Title	Quarter Hours
MAT 216	FOUNDATIONS OF ADVANCED MATHEMATICS	4
Select three of the following:		12
MAT 310	ABSTRACT ALGEBRA I	
MAT 311	ABSTRACT ALGEBRA II	
MAT 335	REAL ANALYSIS I	
MAT 336	REAL ANALYSIS II	
Select three additional mathematics courses from the following:		12
MAT 301	HISTORY OF MATHEMATICS	
MAT 302	COMBINATORICS	
MAT 303	THEORY OF NUMBERS	
MAT 304	DIFFERENTIAL EQUATIONS	
MAT 305	GRAPH THEORY	
MAT 311	ABSTRACT ALGEBRA II	
MAT 312	ABSTRACT ALGEBRA III	
MAT 320	GEOMETRY I	
MAT 321	GEOMETRY II	
MAT 336	REAL ANALYSIS II	
MAT 337	COMPLEX ANALYSIS	
MAT 340	TOPOLOGY	
MAT 348	APPLIED STATISTICAL METHODS	
MAT 351	PROBABILITY AND STATISTICS I	
MAT 352	PROBABILITY AND STATISTICS II	
MAT 353	PROBABILITY AND STATISTICS III	
MAT 370	ADVANCED LINEAR ALGEBRA	
MAT 372	LOGIC AND SET THEORY	
MAT 384	MATHEMATICAL MODELING	
MAT 385	NUMERICAL ANALYSIS I	
MAT 386	NUMERICAL ANALYSIS II	

Data Analysis requirement, which can be satisfied via one of the following:

AP Statistics credit (score of 3 or better)

An applied statistics or data analysis course from this list: MAT 137, MAT 242, MAT 341, MAT 348, IT 223, PSY 240, BIO 206, ENV 260, SOC 279, MAT 353, HON 180. Other data analysis courses may satisfy the requirement with departmental approval. Note that this course may be taken as one of the four Natural or Computer Science courses required for the BS, as part of the major, or as an open elective.

## Open Electives

Open elective credit also is required to meet the minimum graduation requirement of 192 hours.

## Recommended Mathematics Courses

For students interested in graduate study in mathematics:

Course	Title	Quarter Hours
MAT 310	ABSTRACT ALGEBRA I	
MAT 311	ABSTRACT ALGEBRA II	
MAT 312	ABSTRACT ALGEBRA III	
MAT 335	REAL ANALYSIS I	
MAT 336	REAL ANALYSIS II	
MAT 337	COMPLEX ANALYSIS	

For students interested in graduate study in economics, finance, or statistics:

Course	Title	Quarter Hours
MAT 335	REAL ANALYSIS I	
MAT 336	REAL ANALYSIS II	
MAT 351	PROBABILITY AND STATISTICS I	
MAT 352	PROBABILITY AND STATISTICS II	
MAT 353	PROBABILITY AND STATISTICS III	