MATHEMATICS, B.S.

Mission

A Bachelor of Science degree in Mathematics (https://www.biola.edu/degrees/u/mathematics-bs/) provides a strong foundational core for students who wish to pursue graduate studies in pure or applied mathematics; to pursue a career in applied mathematics (e.g., statistics, computer science, operations research, and actuarial mathematics) immediately after obtaining a B.S.; or to teach mathematics in middle school and high school. The courses taken to satisfy the degree requirements are taught viewing mathematics as part of God's creation, and there is a concentrated effort to integrate faith and learning.

Degree Program

A Bachelor of Science degree in Mathematics is offered upon completion of the University baccalaureate and the mathematics major in one of the concentrations. All mathematics concentrations must include 24 upper-division credits.

Learning Outcomes

Program Learning Outcomes

Upon completion of the Bachelor of Science in Mathematics, students will be able to:

1. Think critically, solve problems, and prove theorems in the abstract (ULO 1).
2. Apply mathematical theory, problem solve, and use math-related technology in real-world contexts (ULO 1).
3. Communicate mathematical ideas effectively, both verbally and in writing (ULO 1).
4. Articulate the implications of a biblical worldview concerning mathematics (ULO 2 and 3).

Each Program Learning Outcome (PLO) listed above references at least one of the University Learning Outcomes (ULO 1, 2, 3), which may be found in the General Information (http://catalog.biola.edu/general-information/) section of this catalog.

Requirements

Curriculum Requirements

Code	Title	Credits
Program-Specific Core Curriculum Courses		
Mathematics majors automatically meet the Core Curriculum requirement of 3 credits of mathematics. The foreign language requirement may be met by two years of high school language or the first 4 credits of a college language.		
Mathematics majors must fulfill their Biblical Studies integration seminar requirement by taking one of the sections of BBST 465 Integration Seminar: God and Math.		
Program Courses		
Students earning a Bachelor of Science in Mathematics must complete the mathematics program courses and one of the concentrations. [1]		
CSCI 105	Introduction to Computer Science	3
MATH 150	Calculus I	4
MATH 151	Calculus II	4
MATH 204	Introduction to Abstract Math	3
MATH 250	Calculus III	4
MATH 291	Linear Algebra	3
MATH 305	Introduction to Real Analysis I	3
MATH 315	Abstract Algebra I	3
MATH 370	Readings in Mathematics [2]	2
Students who plan to pursue graduate studies should take at least two of the following courses regardless of the area of concentration:		
MATH 410	Introduction to Real Analysis II	
MATH 450	Abstract Algebra II	
MATH 480	Internship	
Total Credits		**29**

1. See concentration tables below which detail the requirements to earn a Bachelor of Science in Mathematics degree.
2. MATH 370 must be taken twice (2 credits total).

Concentrations

Actuarial Science (62 Credits)

Students who wish to pursue actuarial science, business analytics, or related fields should choose this concentration.

In addition to the program courses above, this concentration must complete the following:

Code	Title	Credits
Program Courses		**29**
Concentration Courses		
BUSN 201	Principles of Macroeconomics	3
BUSN 202	Principles of Microeconomics	3
BUSN 211	Principles of Accounting I	3
BUSN 212	Principles of Accounting II	3
BUSN 370	Business Finance	3
MATH 190	Business Statistics	3
MATH 331	Probability	3
MATH 332	Mathematical Statistics	3
MATH 333	Operations Research	3
MATH 335	Ordinary Differential Equations	3
Select one course (3 credits) at the 300 or 400 level in Math		3
Concentration Course Requirements: 33 credits		
Core Curriculum Requirements [1]		**64**
Total Credits		**126**

1. See Core Curriculum Program section (http://catalog.biola.edu/general-information/undergraduate-core-curriculum-program/) for details.

Applied Mathematics (47 Credits)

Students who are interested in preparing for careers in business or industry should choose this concentration. Courses introduce a variety of areas of applied mathematics.

In addition to the program courses above, this concentration must complete the following.

Code	Title	Credits
Program Courses		**29**
Concentration Courses		
MATH 321	Numerical Analysis	3
MATH 331	Probability	3
MATH 332	Mathematical Statistics	3
MATH 333	Operations Research	3
MATH 335	Ordinary Differential Equations	3
or MATH 440	Complex Variables	
Select one course at the 300 or 400 level in Math		3
Concentration Course Requirements: 18 credits		
Core Curriculum Requirements [1]		**64**
General Electives		**9**
Total Credits		**120**

[1] See Core Curriculum Program section (http://catalog.biola.edu/general-information/undergraduate-core-curriculum-program/)for details.

Computer Science (53 Credits)

This concentration allows a mathematics major the opportunity to focus on the more mathematical aspects of computer science.

In addition to the program courses above, this concentration must complete the following.

Code	Title	Credits
Program Courses		**29**
Concentration Courses		
Select at least two courses from the following:		6
MATH 321	Numerical Analysis	
MATH 331	Probability	
MATH 332	Mathematical Statistics	
MATH 333	Operations Research	
The following courses are also required:		
CSCI 106	Data Structures	3
CSCI 220	Computer Organization and Assembly Language Programming	3
CSCI 400	Theory of Algorithms	3
Select three courses at the 300 or 400 level in Math or Computer Science		9
Concentration Course Requirements: 24 credits		
Core Curriculum Requirements [1]		**64**
General Electives		**3**
Total Credits		**120**

[1] See Core Curriculum Program section (http://catalog.biola.edu/general-information/undergraduate-core-curriculum-program/)for details.

Pure Mathematics (47 Credits)

This concentration allows the student flexibility in the selection of upper-division courses. A faculty advisor will aid the student in making these choices. Students planning to pursue mathematics in graduate school will find this concentration particularly appropriate.

In addition to the program courses above, this concentration must complete the following:

Code	Title	Credits
Program Courses		**29**
Concentration Courses		
MATH 331	Probability	3
Select 5 courses at the 300 or 400 level in Math		15
Concentration Course Requirements: 18 credits		
Core Curriculum Requirements [1]		**64**
General Electives		**9**
Total Credits		**120**

[1] See Core Curriculum Program section (http://catalog.biola.edu/general-information/undergraduate-core-curriculum-program/)for details.

Statistics and Data Science (47 credits)

The Statistics and Data Science concentration is designed to equip students to obtain valid data and use it to answer the questions they face on the job and in the world, with a biblical worldview.

Code	Title	Credits
Program Courses		**29**
Concentration Courses		
CSCI 106	Data Structures	3
MATH 318	Biostatistics	3
MATH 331	Probability	3
MATH 332	Mathematical Statistics	3
MATH 380	Statistical Consulting Practicum	3
or MATH 319	Statistics II	
MATH 470	Statistics and Data Science Capstone [1]	
Select one of the following courses:		3
BUSN 423	Advanced Business Analytics	
CSCI 305	Programming for Data Science I	
CSCI 306	Programming for Data Science II	
CSCI 402	Database Management	
CSCI 440	Topics in Computer Science (Artificial Intelligence)	
MATH 319	Statistics II [2]	
Concentration Course Requirements: 18 credits		
Core Curriculum Requirements [3]		**64**
General Electives		**9**
Total Credits		**120**

[1] MATH 470 is to be taken in place of one of the sections of MATH 370, 2 credits of which are required for the Math major.

[2] If not taken above as an alternate to MATH 380.

[3] See Core Curriculum Program section (http://catalog.biola.edu/general-information/undergraduate-core-curriculum-program/)for details.

Mathematics: Secondary Instruction

Students who wish to prepare to teach mathematics at the secondary level should select this concentration to work toward a preliminary single-subject credential.

- Biola's Mathematics Secondary Instruction program is a Commission-approved subject matter program. Completion of the subject matter program does not lead to a credential but it may be used to meet the subject matter competency requirement for a teaching credential. The Professional Teacher Preparation Program leading to a California Teaching Credential at Biola University is subject to change in response to new legislation. Please see a credential analyst in the School of Education for current information on completing the requirements for a teaching credential, including the CSET subject matter waiver program. Students must consult with both their major advisor and a School of Education advisor.
- Students who wish to prepare to teach mathematics at the secondary level should select this concentration to work toward a preliminary single-subject credential. Completion of the program requirements will prepare students with the content knowledge necessary to teach mathematics in departmentalized classes, such as those in most middle schools and high schools. Students who meet all requirements and pass the necessary classes with a grade of "C" or above and with a "B-" or above in LEDU 433 will be granted a waiver to satisfy the California subject matter requirements to obtain a teaching credential in mathematics.

In addition to the program courses above, this concentration must complete the following.

Code	Title	Credits
Program Courses		**29**
Concentration-Specific Core Curriculum Courses		
HIST 200	United States History To 1865 [1]	
or POSC 225	Survey of American Government	
PSYC 200	Introduction to Psychology	
Concentration Courses		
MATH 318	Biostatistics	3
or MATH 332	Mathematical Statistics	
MATH 331	Probability	3
MATH 341	Classical Geometry	3
MATH 415	Number Theory and the History of Mathematics	3
Select two courses at the 300 or 400 level in Math		6
Education Courses		
LEDU 301	Introduction to Teaching	3
LEDU 330	Psychological Foundations of Education	3
LEDU 341	Methods of Teaching Linguistically Diverse Students	3
LEDU 425	Secondary Content Area Reading	3
LEDU 433	Single Subject Pedagogy	2
LEDU 438	Secondary Curriculum, Differentiation, and Assessment	3
Student teaching (12 credits) may be completed at the graduate level and is not required for undergraduate graduation:		
LEDU 450	Secondary Student Teaching I	
LEDU 452	Secondary Student Teaching II	
Concentration Course Requirements: 35 credits		
Core Curriculum Requirements [2]		**64**
Total Credits		**128**

[1] The California Commission on Teacher Credentialing requires that a teaching credential candidate must have completed a minimum 2-credit course that covers the U.S. Constitution or fulfill this requirement by examination. Biola University students may complete this requirement by taking either HIST 200 or POSC 225 with a grade of "C" or better. Students receiving AP college credit for either HIST 200 or POSC 225 will also meet this requirement. Transfer coursework must be reviewed by a credential analyst in the School of Education.

[2] See Core Curriculum Program section (http://catalog.biola.edu/general-information/undergraduate-core-curriculum-program/)for details.

Course Sequence

NOTE: The course sequence table is designed by the major department and is one way that the classes will work out properly in sequence for your major. However, there are alternative or flexible ways to rotate some of the classes within the same year/level and sometimes between year levels. Please contact your major department advisor to discuss flexible alternatives in scheduling the sequence of your classes.

Taking coursework during the summer session may also be an option to accelerate your degree path.

See Core Curriculum Program section (http://catalog.biola.edu/general-information/undergraduate-core-curriculum-program/) for a list of approved Core Curriculum courses.

Mathematics, B.S. Actuarial Science (MACT)

First Year

Fall	Credits	Spring	Credits
BBST 103 or 165	3	BBST 103 or 165	3
GNST 102	1	CSCI 105	3
KNES 107	1	ENGL 100 or 112	3
MATH 150	4	MATH 151	4
MATH 190	3	MATH 204	3
Foreign Language (See Core Curriculum)	4		
	16		**16**

Total Credits 32

Second Year

Fall	Credits	Spring	Credits
BBST 209 or 210	3	BBST 209 or 210	3
BUSN 201	3	BBST 251	3
MATH 250	4	BUSN 202	3
MATH 291	3	MATH 305 or 315	3
Fine Arts (see Core Curriculum)	3	Science (see Core Curriculum)	3
	16		**15**

Total Credits 31

Third Year

Fall	Credits	Spring	Credits
BBST 365	3	BBST 354	3
BUSN 211	3	BUSN 212	3
BUSN 370	3	MATH 305 or 315	3
ENGL 313	3	MATH 332 or 333	3
MATH 370	1	MATH 370	1
MATH Elective (upper-division)	3	Behavioral Science (see Core Curriculum)	3
Writing Competency Requirement		Graduation Petition due in Registrar's Office	
	16		**16**

Total Credits 32

Fourth Year

Fall	Credits	Spring	Credits
BBST 300/400 Bible Elective	3	BBST 300/400 Bible Elective	3
MATH 331	3	BBST 465 (God and Math)	3
Communication (see Core Curriculum)	3	HIST 200, 201, or POSC 225	3
KNES Activity (see Core Curriculum)	1	MATH 332 or 333	3
Literature (see Core Curriculum)	3	MATH 335	3
Philosophy (see Core Curriculum)	3		
	16		**15**

Total Credits 31

Mathematics, B.S. Applied Mathematics (MAAP)

First Year

Fall	Credits	Spring	Credits
BBST 103 or 165	3	BBST 103 or 165	3
ENGL 100 or 112	3	CSCI 105	3
GNST 102	1	KNES 107	1
MATH 150	4	MATH 151	4
Foreign Language (See Core Curriculum)	4	MATH 204	3
	15		**14**

Total Credits 29

Second Year

Fall	Credits	Spring	Credits
BBST 209 or 210	3	BBST 209 or 210	3
BBST 251	3	MATH 305 or 315	3
MATH 250	4	Communication (see Core Curriculum)	3
MATH 291	3	Science (see Core Curriculum)	3
Literature (see Core Curriculum)	3	General Elective	3
	16		**15**

Total Credits 31

Third Year

Fall	Credits	Spring	Credits
BBST 365	3	BBST 354	3
ENGL 313	3	MATH 305 or 315	3
MATH 321 or 331	3	MATH 332 or 333	3
MATH 370	1	MATH 335 or 440	3
MATH Elective (upper-division)	3	MATH 370	1
Behavioral Science (see Core Curriculum)	3	KNES Activity (see Core Curriculum)	1
Writing Competency Requirement		Graduation Petition due in Registrar's Office	
	16		**14**

Total Credits 30

Fourth Year

Fall	Credits	Spring	Credits
BBST 300/400 Bible Elective	3	BBST 300/400 Bible Elective	3
MATH 321 or 331	3	BBST 465 (God and Math)	3
Fine Arts (see Core Curriculum)	3	HIST 200, 201, or POSC 225	3
Philosophy (see Core Curriculum)	3	MATH 332 or 333	3
General Elective	3	General Elective	3
	15		**15**

Total Credits 30

Mathematics, B.S. Computer Science (MACS)

First Year

Fall	Credits	Spring	Credits
BBST 103 or 165	3	BBST 103 or 165	3
CSCI 105	3	CSCI 106	3
ENGL 100 or 112	3	KNES 107	1
GNST 102	1	MATH 151	4
MATH 150	4	MATH 204	3
	14		**14**

Total Credits 28

Second Year

Fall	Credits	Spring	Credits
BBST 209 or 210	3	BBST 209 or 210	3
BBST 251	3	CSCI 220	3
MATH 250	4	MATH 305 or 315	3
MATH 291	3	Communication (see Core Curriculum)	3
Foreign Language (see Core Curriculum)	4	Science (see Core Curriculum)	3
	17		**15**

Total Credits 32

Third Year

Fall	Credits	Spring	Credits
BBST 365	3	BBST 354	3
CSCI 400	3	MATH 305 or 315	3
MATH 370	1	MATH 370	1
MATH/CSCI Elective (upper-division)	3	MATH/CSCI Elective (upper-division)	3
Behavioral Science (see Core Curriculum)	3	KNES Activity (see Core Curriculum)	1
Literature (see Core Curriculum)	3	General Elective	3
Writing Competency Requirement		Graduation Petition due in Registrar's Office	
	16		**14**

Total Credits 30

Fourth Year

Fall	Credits	Spring	Credits
BBST 300/400 Bible Elective	3	BBST 300/400 Bible Elective	3
ENGL 313	3	BBST 465 (God and Math)	3
MATH 321, 331, 332, or 333[1]	3	HIST 200, 200, or POSC 225	3
Fine Arts (see Core Curriculum)	3	MATH 321, 331, 332, or 333[1]	3
Philosophy (see Core Curriculum)	3	MATH/CSCI Elective (upper-division)	3
	15		**15**

Total Credits 30

[1] Select at least two of MATH 321, 331, 332, 333.

Mathematics, B.S. Pure Mathematics (MAPM)

First Year

Fall	Credits	Spring	Credits
BBST 103 or 165	3	BBST 103 or 165	3
ENGL 100 or 112	3	CSCI 105	3
GNST 102	1	KNES 107	1
MATH 150	4	MATH 151	4
Foreign Language (See Core Curriculum)	4	MATH 204	3
	15		**14**

Total Credits 29

Second Year

Fall	Credits	Spring	Credits
BBST 209 or 210	3	BBST 209 or 210	3
BBST 251	3	MATH 305 or 315	3
MATH 250	4	Communication (see Core Curriculum)	3
MATH 291	3	Science (see Core Curriculum)	3
General Elective	3	General Elective	3
	16		**15**

Total Credits 31

Third Year

Fall	Credits	Spring	Credits
BBST 365	3	BBST 354	3
MATH 331	3	MATH 305 or 315	3
MATH 370	1	MATH 370	1
MATH Elective (upper-division)	3	MATH Elective (upper-division)	3
Behavioral Science (see Core Curriculum)	3	KNES Activity (see Core Curriculum)	1
General Elective	3	Literature (see Core Curriculum)	3
Writing Competency Requirement		Graduation Petition due iin Registrar's Office	
	16		**14**

Total Credits 30

Fourth Year

Fall	Credits	Spring	Credits
BBST 300/400 Bible Elective	3	BBST 300/400 Bible Elective	3
ENGL 313	3	BBST 465 (God and Math)	3
MATH Elective (upper-division)	3	HIST 200, 201, or POSC 225	3
MATH Elective (upper-division)	3	MATH Elective (upper-division)	3
Philosophy (see Core Curriculum)	3	Fine Arts (see Core Curriculum)	3
	15		**15**

Total Credits 30

Mathematics, B.S. Statistics and Data Science (MASD)

First Year

Fall	Credits	Spring	Credits
BBST 103 or 165	3	BBST 103 or 165	3
CSCI 105	3	CSCI 106	3
ENGL 100 or 112	3	KNES 107	1
GNST 102	1	MATH 151	4
MATH 150	4	MATH 204	3
		Foreign Language (see Core Curriculum)	4
	14		**18**

Total Credits 32

Second Year

Fall	Credits	Spring	Credits
BBST 209 or 210	3	BBST 209 or 210	3
BBST 251	3	MATH 305 or 315	3
MATH 250	4	Communication (see Core Curriculum)	3
MATH 291	3	Science (see Core Curriculum)	3
General Elective	3	General Elective	3
	16		**15**

Total Credits 31

Third Year

Fall	Credits	Spring	Credits
BBST 365	3	BBST 354	3
MATH 318	3	MATH 305 or 315	3
MATH 331	3	MATH 332	3
Behavioral Science (see Core Curriculum)	3	MATH 370	1
General Elective	3	KNES Activity (see Core Curriculum)	1
Writing Competency Requirement		Literature (see Core Curriculum)	3
		Graduation Petition due in Registrar's Office	
	15		**14**

Total Credits 29

Fourth Year

Fall	Credits	Spring	Credits
BBST 300/400 Bible Elective	3	BBST 300/400 Bible Elective	3
CSCI 305, 306, 402, 440, BUSN 423, or MATH 319	3	BBST 465 (God and Math)	3
ENGL 313	3	HIST 200, 201, or POSC 225	3
MATH 380 or 319	3	MATH 470	1
Philosophy (see Core Curriculum)	3	Fine Arts (see Core Curriculum)	3
	15		**13**

Total Credits 28

Mathematics, B.S. Secondary Instruction (MAED)

First Year

Fall	Credits	Spring	Credits
BBST 103 or 165	3	BBST 103 or 165	3
ENGL 100 or 112	3	CSCI 105	3
GNST 102	1	KNES 107	1
MATH 150	4	MATH 151	4
Foreign Language (See Core Curriculum)	4	MATH 204	3
	15		**14**

Total Credits 29

Second Year

Fall	Credits	Spring	Credits
BBST 209 or 210	3	BBST 209 or 210	3
BBST 251	3	MATH 305 or 315	3
LEDU 301	3	LEDU 341	3
MATH 250	4	Communication (see Core Curriculum)	3
MATH 291	3	KNES Activity (see Core Curriculum)	1
		Science (see Core Curriculum)	3
	16		**16**

Total Credits 32

Third Year

Fall	Credits	Spring	Credits
BBST 365	3	BBST 354	3
LEDU 425	3	LEDU 330	3
MATH 331 or 341	3	MATH 305 or 315	3
MATH 370	1	MATH 318 or 332	3
MATH 415	3	MATH 370	1
PSYC 200 (required)	3	Literature (see Core Curriculum)	3
Writing Competency Requirement		Graduation Petition due in Registrar's Office	
	16		**16**

Total Credits 32

Fourth Year

Fall	Credits	Spring	Credits
BBST 300/400 Bible Elective	3	BBST 300/400 Bible Elective	3
ENGL 313	3	BBST 465 (God and Math)	3
MATH 331 or 341	3	HIST 200 or POSC 225 (required)	3
MATH Elective (upper-division)	3	LEDU 433[1]	2
Fine Arts (see Core Curriculum)	3	LEDU 438	3
Philosophy (see Core Curriculum)	3	LEDU 450 & LEDU 452[2]	0
		MATH Elective (upper-division)	3
	18		**17**

Total Credits 35

1 Students who wish to meet the requirements to waive the subject matter competency requirement for a California teaching credential must pass all required major courses with a grade of "C" or above as well as a "B-" or above in LEDU 433.

2 Students who wish to complete student teaching as an undergraduate must meet with an advisor. It is possible to complete LEDU 450/LEDU 452 prior to graduation if the Foreign Language requirement has already been met and coursework is taken during summer sessions. Cross-listed as SEED 514/SEED 515 at the graduate level.

Torrey Hnrs Seq

NOTE: The course sequence table is designed by the major department and is one way that the classes will work out properly in sequence for your major. However, there are alternative or flexible ways to rotate some of the classes within the same year/level and sometimes between year levels. Please contact your major department advisor to discuss flexible alternatives in scheduling the sequence of your classes.

Taking coursework during the summer session may also be an option to accelerate your degree path.

See Core Curriculum Program section (http://catalog.biola.edu/general-information/undergraduate-core-curriculum-program/) for a list of approved Core Curriculum courses.

- Actuarial Science (p. 6)
- Applied Mathematics (p. 6)
- Computer Science (p. 7)
- Pure Mathematics (p. 7)
- Secondary Instruction (p. 7)
- Statistics and Data Science (p. 8)

Mathematics, B.S. Actuarial Science (MACT)

First Year

Fall	Credits	Spring	Credits
HNRS 101	4	HNRS 105	4
HNRS 102	4	HNRS 106	4
GNST 102	1	CSCI 105	3
KNES 107	1	MATH 151	4
MATH 150	4	MATH 204	3
MATH 190	3		
	17		**18**

Second Year

Fall	Credits	Spring	Credits
HNRS 210	4	HNRS 230	4
HNRS 215	4	HNRS 231	4
BUSN 201	3	BUSN 202	3
MATH 250	4	MATH 305 or 315	3
MATH 291	3	Foreign Language (see Core Curriculum)	4
	18		**18**

Third Year

Fall	Credits	Spring	Credits
HNRS 324	4	HNRS 337	4
HNRS 326	2	HNRS 339	2
BUSN 211	3	BUSN 212	3
BUSN 370	3	MATH 305 or 315	3
MATH 331	3	MATH 332 or 333	3
MATH 370	1	MATH 370	1
	16		**16**

Fourth Year

Fall	Credits	Spring	Credits
HNRS 443	4	HNRS 458	4
ENGL 313	3	BBST 465 (God and Math)	3
MATH Elective (upper-division)	3	MATH 333 or 332	3
Science (see Core Curriculum)	3	MATH 335	3
		KNES Activity (see Core Curriculum)	1
	13		**14**

Total Credits 130

Note: Those that took at least 2 years of a foreign language in high school need not take a foreign language class. At most 8 credits may be obtained through KNES classes; at most 8 credits may be obtained through applied music classes.

Mathematics, B.S. Applied Mathematics (MAAP)

First Year

Fall	Credits	Spring	Credits
HNRS 101	4	HNRS 105	4
HNRS 102	4	HNRS 106	4

GNST 102	1	CSCI 105	3
MATH 150	4	MATH 151	4
Foreign Language (see Core Curriculum)	4	MATH 204	3
	17		**18**

Second Year

Fall	Credits	Spring	Credits
HNRS 210	4	HNRS 230	4
HNRS 215	4	HNRS 231	4
MATH 250	4	MATH 305 or 315	3
MATH 291	3	Science (see Core Curriculum)	3
	15		**14**

Third Year

Fall	Credits	Spring	Credits
HNRS 324	4	HNRS 337	4
HNRS 326	2	HNRS 339	2
KNES 107	1	ENGL 313	3
KNES Activity (see Core Curriculum)	1	MATH 305 or 315	3
MATH 321 or 331	3	MATH 332 or 333	3
MATH 370	1	MATH 370	1
	12		**16**

Fourth Year

Fall	Credits	Spring	Credits
HNRS 443	4	HNRS 458	4
MATH 321 or 331	3	BBST 465 (God and Math)	3
MATH Elective (upper-division)	3	MATH 332 or 333	3
General Elective	3	MATH 335 or 440	3
		General Elective	2
	13		**15**

Total Credits 120

Note: Those that took at least 2 years of a foreign language in high school may replace the foreign language requirement with general elective credit. At most 8 credits may be obtained through KNES classes; at most 8 credits may be obtained through applied music classes.

Mathematics, B.S. Computer Science (MACS)

First Year

Fall	Credits	Spring	Credits
HNRS 101	4	HNRS 105	4
HNRS 102	4	HNRS 106	4
CSCI 105	3	CSCI 106	3
GNST 102	1	MATH 151	4
MATH 150	4	MATH 204	3
	16		**18**

Second Year

Fall	Credits	Spring	Credits
HNRS 210	4	HNRS 230	4
HNRS 215	4	HNRS 231	4
MATH 250	4	CSCI 220	3
MATH 291	3	MATH 305 or 315	3
	15		**14**

Third Year

Fall	Credits	Spring	Credits
HNRS 324	4	HNRS 337	4
HNRS 326	2	HNRS 339	2
CSCI 400	3	ENGL 313	3
MATH 370	1	MATH 305 or 315	3
Foreign Language (see Core Curriculum)	4	MATH 370	1
		Science (see Core Curriculum)	3
	14		**16**

Fourth Year

Fall	Credits	Spring	Credits
HNRS 443	4	HNRS 458	4
MATH 321, 331, 332, or 333	3	BBST 465 (God and Math)	3
MATH/CSCI Elective (upper-division)	3	MATH 321, 331, 332, or 333	3
MATH/CSCI Elective (upper-division)	3	MATH/CSCI Elective (upper-division)	3
KNES 107	1	KNES Activity (see Core Curriculum)	1
	14		**14**

Total Credits 121

Note: Those that took at least 2 years of a foreign language in high school may replace the foreign language requirement with general elective credit. At most 8 credits may be obtained through KNES classes; at most 8 credits may be obtained through applied music classes.

Mathematics, B.S. Pure Mathematics (MAPM)

First Year

Fall	Credits	Spring	Credits
HNRS 101	4	HNRS 105	4
HNRS 102	4	HNRS 106	4
GNST 102	1	CSCI 105	3
MATH 150	4	MATH 151	4
Foreign Language (see Core Curriculum)	4	MATH 204	3
	17		**18**

Second Year

Fall	Credits	Spring	Credits
HNRS 210	4	HNRS 230	4
HNRS 215	4	HNRS 231	4
MATH 250	4	MATH 305 or 315	3
MATH 291	3	Science (see Core Curriculum)	3
	15		**14**

Third Year

Fall	Credits	Spring	Credits
HNRS 324	4	HNRS 337	4
HNRS 326	2	HNRS 339	2
KNES 107	1	ENGL 313	3
MATH 331	3	MATH 305 or 315	3
MATH 370	1	MATH 370	1
KNES Activity (see Core Curriculum)	1	MATH Elective (upper-division)	3
	12		**16**

Fourth Year

Fall	Credits	Spring	Credits
HNRS 443	4	HNRS 458	4
MATH Elective (upper-division)	3	BBST 465 (God and Math)	3
MATH Elective (upper-division)	3	MATH Elective (upper-division)	3
General Elective	3	MATH Elective (upper-division)	3
		General Elective	2
	13		**15**

Total Credits 120

Note: Those that took at least 2 years of a foreign language in high school may replace the foreign language requirement with general elective credit. At most 8 credits may be obtained through KNES classes; at most 8 credits may be obtained through applied music classes.

Mathematics, B.S. Secondary Instruction (MAED)

First Year

Fall	Credits	Spring	Credits
HNRS 101	4	HNRS 105	4
HNRS 102	4	HNRS 106	4
GNST 102	1	CSCI 105	3
MATH 150	4	MATH 151	4
Foreign Language (see Core Curriculum)	4	MATH 204	3
	17		**18**

Second Year

Fall	Credits	Spring	Credits
HNRS 210	4	HNRS 230	4
HNRS 215	4	HNRS 231	4
LEDU 301	3	LEDU 341	3
MATH 250	4	MATH 305 or 315	3
MATH 291	3	Science (see Core Curriculum)	3
	18		**17**

Third Year

Fall	Credits	Spring	Credits
HNRS 324	4	HNRS 337	4
HNRS 326	2	HNRS 339	2
LEDU 425	3	KNES 107	1
MATH 331 or 341	3	LEDU 330	3
MATH 370	1	MATH 305 or 315	3
MATH 415	3	MATH 318 or 332	3
		MATH 370	1
	16		**17**

Fourth Year

Fall	Credits	Spring	Credits
HNRS 443	4	HNRS 458	4
ENGL 313	3	BBST 465 (God and Math)	3
MATH 331 or 341	3	LEDU 433[1]	2
MATH Elective (upper-division)	3	LEDU 438	3
PSYC 200 (required)	3	MATH Elective (upper-division)	3
KNES Activity (see Core Curriculum)	1		
	17		**15**

Total Credits 135

[1] Students who wish to meet the requirements to waive the subject matter competency requirement for a California teaching credential must pass all required major courses with a grade of "C" or above as well as a "B-" or above in LEDU 433.

Note: Those that took at least 2 years of a foreign language in high school need not take a foreign language class. At most 8 credits may be obtained through KNES classes; at most 8 credits may be obtained through applied music classes. LEDU 433 must be taken concurrently with LEDU 438. In addition to the listed classes, LEDU 450 and LEDU 452 (12 credits) are required for a teaching credential.

Mathematics, B.S. Statistics and Data Science (MASD)

First Year

Fall	Credits	Spring	Credits
HNRS 101	4	HNRS 105	4
HNRS 102	4	HNRS 106	4
GNST 102	1	CSCI 105	3
MATH 150	4	MATH 151	4
Foreign Language (see Core Curriculum)	4	MATH 204	3
	17		**18**

Second Year

Fall	Credits	Spring	Credits
HNRS 210	4	HNRS 230	4
HNRS 215	4	HNRS 231	4
MATH 250	4	CSCI 106	3
MATH 291	3	KNES 107	1
		MATH 305 or 315	3
	15		**15**

Third Year

Fall	Credits	Spring	Credits
HNRS 324	4	HNRS 337	4
HNRS 326	2	HNRS 339	2
MATH 331	3	ENGL 313	3
MATH 380 or 319	3	MATH 305 or 315	3
		MATH 332	3
		MATH 370	1
	12		**16**

Fourth Year

Fall	Credits	Spring	Credits
HNRS 443	4	HNRS 458	4
CSCI 305, 306, 402, 440, BUSN 432, or MATH 319	3	BBST 465 (God and Math)	3
MATH 318	3	MATH 470	1
Science (see Core Curriculum)	3	KNES Activity (see Core Curriculum)	1
		General Elective	3
		General Elective	2
	13		**14**

Total Credits 120

Note: Those that took at least 2 years of a foreign language in high school may replace the foreign language requirement with general elective credit. At most 8 credits may be obtained through KNES classes; at most 8 credits may be obtained through applied music classes.