

APPLIED MATHEMATICS - BS, BIOLOGICAL SCIENCE EMPHASIS

Program Requirements

Biological Science Emphasis: Consult with departmental advisor.

First Year

| Fall | | Semester Credit Hours |
|---------------------------------|--|-----------------------------|
| BIOL 111 | Introductory Biology I | 4 |
| CHEM 119 | Fundamentals of Chemistry I | 4 |
| ENGL 104 or ENGL 103 | Composition and Rhetoric or Introduction to Rhetoric and Composition | 3 |
| MATH 171 | Calculus I | 4 |
| General Elective ^{1,4} | | 1 |
| Semester Credit Hours | | 16 |

Spring

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|---------------------------------|---|-----------|
| BIOL 112 | Introductory Biology II | 4 |
| CHEM 120 | Fundamentals of Chemistry II | 4 |
| ENGL 203 or ENGL 210 | Writing about Literature or Technical and Professional Writing | 3 |
| MATH 172 | Calculus II | 4 |
| General Elective ^{1,4} | | 1 |
| Semester Credit Hours | | 16 |

Second Year

| Fall | | Semester Credit Hours |
|------------------------------|---|-----------------------------|
| BIOL 200-470 | (http://catalog.tamu.edu/undergraduate/course-descriptions/biol/) | 3 |
| CHEM 227 & CHEM 237 | Organic Chemistry I and Organic Chemistry Laboratory | 4 |
| MATH 221 | Several Variable Calculus | 4 |
| MATH 300 | Foundations of Mathematics | 3 |
| Semester Credit Hours | | 14 |

Spring

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|------------------------------|--|-----------|
| BIOL 200-470 | (http://catalog.tamu.edu/undergraduate/course-descriptions/biol/) | 3 |
| CHEM 228 & CHEM 238 | Organic Chemistry II and Organic Chemistry Laboratory | 4 |
| MATH 308 | Differential Equations | 3 |
| MATH 323 | Linear Algebra | 3 |
| University Core Curriculum | (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ^{2,5} | 3 |
| Semester Credit Hours | | 16 |

Third Year

| Fall | | Semester Credit Hours |
|----------|------------------------------|-----------------------------|
| BICH 410 | Comprehensive Biochemistry I | 3 |
| MATH 409 | Analysis on the Real Line | 3 |

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| PHYS 206 & PHYS 226 | Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences | 4 |
| STAT 312 | Statistics for Biology | 3 |
| University Core Curriculum | (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ² | 3 |

Semester Credit Hours 16

Spring

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| MATH 411 | Mathematical Probability | 3 |
| MATH 469 | Introduction to Mathematical Biology | 3 |
| PHYS 207 & PHYS 227 | Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences | 4 |
| University Core Curriculum | (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ² | 3 |

Semester Credit Hours 13

Fourth Year

| Fall | | Semester Credit Hours |
|---|--|-----------------------------|
| Select 6 hours from the following: ³ | | 6 |

| | | |
|--------------|---|--|
| MATH 325 | The Mathematics of Interest | |
| MATH 407-499 | (http://catalog.tamu.edu/undergraduate/course-descriptions/math/) | |

Select from one of the following: 4

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|---------|--|--|
| CSC 110 | Programming I | |
| CSC 111 | Introduction to Computer Science Concepts and Programming | |
| CSC 206 | Structured Programming in C | |

University Core Curriculum (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>)² 3

University Core Curriculum (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>)² 3

Semester Credit Hours 16

Spring

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| MATH 442 | Mathematical Modeling | 3 |
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Select 3 hours from the following: 3

| | | |
|--------------|---|--|
| MATH 325 | The Mathematics of Interest | |
| MATH 407-499 | (http://catalog.tamu.edu/undergraduate/course-descriptions/math/) | |

University Core Curriculum (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>)² 3

University Core Curriculum (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>)² 3

General Elective⁴ 1

Semester Credit Hours 13

Total Semester Credit Hours 120

¹ MATH 170 is highly recommended for math majors co-enrolled in MATH 150, MATH 151, MATH 152, MATH 171,

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or MATH 172. MATH 200 is also highly recommended for math majors co-enrolled in MATH 151, MATH 152, MATH 171, or MATH 172.

² Of the 18 hours shown as University Core Curriculum (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>), 3 must be from Language, Philosophy and Culture, 3 from Creative Arts, 6 from American History, 6 from Government/Political Science.

³ Select from MATH 325, MATH 407-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/math/>). One course must be a W or C course.

⁴ Select from any 100-499 course not used elsewhere, (except ALED 125; ASCC 102; ASTR 109/PHYS 109, ASTR 119/PHYS 119; BMEN 153; KINE 199; LAND 101; MATH 102-148, MATH 151-168 (<http://catalog.tamu.edu/undergraduate/course-descriptions/math/>), MATH 304, MATH 309, MATH 311, MATH 365, MATH 366, MATH 367, MATH 375, MATH 376; PBSI 301; PHYS 201, PHYS 202, PHYS 205; STAT 201 STAT 301 - 303 (<http://catalog.tamu.edu/undergraduate/course-descriptions/stat/>)).

⁵ PBSI 107 or SOCI 205 is recommended for Medical School.

Maximum of 3 hours of MATH 300 or CSCE 222/ECEN 222 may be used in this degree program.

Maximum of 3 hours of MATH 411 or STAT 414 may be used in this degree program.

Maximum of 4 hours of MATH 417, MATH 437 or CSCE 442 may be used in this degree program.

If a grade of D or F is earned in any of the following courses, MATH 151/MATH 171, MATH 152/MATH 172, MATH 221/MATH 251/MATH 253, MATH 300, MATH 323 or MATH 308, this course must be immediately retaken and a grade of C or better earned. The department will allow at most two Ds in upper-level (325-499) courses. If a third D is earned, one of the three courses in which a D was earned must be retaken and a grade of C or better earned.

Students desiring teacher certification should consult the requirements for certification before registering for electives.

Graduation requirements include a requirement for 3 hours of International and Cultural Diversity course (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>)s and 3 hours of Cultural Discourse (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/>) courses. A course satisfying a Core category, a college/department requirement, or a general elective can be used to satisfy this requirement. See academic advisor.