BS in Mathematics

The BS in Mathematics successfully prepares students for graduate studies, teaching, and industry positions, and provides a solid foundation for many other careers. It offers five concentrations in 7-12 Math, 7-12 Math/Physics, Actuarial Science, Applied Mathematics, and Statistics.

**Marketable Skills**

Students will develop the following skills:

- Critical thinking: Analyze and evaluate issues in order to solve problems and develop informed opinions.
- Problem-solving: Find solutions to difficult or complex issues.
- Analytical thinking.
- Quantitative reasoning.
- Ability to manipulate precise and intricate ideas.
- Time management: Prioritize goals and organize time to be more productive and efficient.

**Fast Track**

The Fast-Track Program (http://catalog.utep.edu/admissions/undergraduate/fast-track/#text) enables outstanding undergraduate UTEP students to receive both undergraduate and graduate credit for up to 15 hours of UTEP course work as determined by participating Master's and Doctoral programs. Not all undergraduate programs have elected to participate in the Fast Track option, so students should see their departmental graduate advisor for information about requirements and guidelines. A list of courses that have been approved for possible use at the graduate level is found here (http://catalog.utep.edu/admissions/undergraduate/fast-track/#fasttrackcoursestext).

**M.S. in Mathematical Sciences** (http://catalog.utep.edu/grad/college-of-science/mathematical-sciences/mathematical-sciences-ms/)

**B.S. in Mathematical Sciences**

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<td>Financial Management</td>
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M.B.A. - Master of Business Administration (http://catalog.utep.edu/grad/college-of-business-administration/business-administration-deans-office/master-of-business-administration/) / B.S. in Mathematical Sciences (Statistics Concentration)

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M.S. in Statistics (http://catalog.utep.edu/grad/college-of-science/mathematical-sciences/statistics-ms/) / B.S. in Mathematical Sciences

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M.S. in Bioinformatics (http://catalog.utep.edu/grad/college-of-science/college-science-deans-office/bioinformatics-ms/) / B.S. in Mathematics

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<td>STAT 5329</td>
<td>Statistical Programming</td>
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<td>STAT 5428</td>
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M.B.A. - Master of Business Administration (http://catalog.utep.edu/grad/college-of-business-administration/business-administration-deans-office/master-of-business-administration/) / B.S. in Mathematical Sciences

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Degree Plan

The requirement to obtain the BS in Mathematics consists of the general College of Science requirements plus the following specific requirements:
Required Credits: 120

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<td>PHYS 2421</td>
<td>Introductory Electromagnetism</td>
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<td>Complete the University Core Curriculum requirements. (p. 10)</td>
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<td>MATH 1312</td>
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<td>or MATH 2325</td>
<td>Intro. to Higher Mathematics</td>
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<td>MATH 2326</td>
<td>Differential Equations</td>
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<td>Principles of Mathematics</td>
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<td>MATH 3341</td>
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<td>MATH 3319</td>
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<td>Actuarial Mathematics</td>
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<td>or STAT 4385</td>
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<tr>
<td>MATH 4370</td>
<td>Topics Seminar (with permission of Chair)</td>
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<td>MATH 4199</td>
<td>Individ Studies in Mathematic (with permission of Chair)</td>
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<td>MATH 4399</td>
<td>Indiv Studies in Mathematics (with permission of Chair)</td>
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<td>BIOL 1305</td>
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<tr>
<td>&amp; BIOL 1107</td>
<td>and Topics in Study of Life I</td>
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<tr>
<td>BIOL 1306</td>
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<td>&amp; BIOL 1108</td>
<td>and Organismal Biology Laboratory</td>
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<tr>
<td>OR</td>
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<td>&amp; CHEM 1105</td>
<td>and Laboratory for CHEM 1305</td>
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<tr>
<td>CHEM 1306</td>
<td>General Chemistry</td>
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<tr>
<td>&amp; CHEM 1106</td>
<td>and Laboratory for CHEM 1306</td>
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<td>OR</td>
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<td>Intro to Physical Geology</td>
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<td>and Lab for GEOL 1313</td>
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<td>GEOL 1314</td>
<td>Intro to Historical Geol</td>
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RWS 3359 Technical Writing 3

Select one of the following:

CS 1101 Intro to Computer Science Lab 4
& CS 1301 and Intro to Computer Science 3
CS 1320 Computer Programming Sci/Engr 3
CS 1401 Intro to Computer Science 4

Minor (Optional)
Complete an 18-hour minor or 18 hours of electives, at least 10 must be upper-division

Electives
Select 7 additional semester hours with advisor approval

Upper Division Requirement
Select a total of 37 hours of upper division course work 3 37

Total Hours 120

1 Although the UTEP core choice is larger, students are encouraged to choose the core courses that also satisfies the major.
2 MATH 4370 Topics Seminar, MATH 4199 Individ Studies in Mathematic, or MATH 4399 Indiv Studies in Mathematics may be substituted
3 A total of thirty-seven hours of upper division coursework is required for all Bachelor of Science degrees.

Concentrations

7-12 Math

Students may not apply to the Educator Preparation Program until they meet the following requirements:

1. Have a UTEP overall GPA of at least 2.75
2. Have a UTEP majors GPA of at least 2.75
3. Pass the UTEP math content qualifying exam with a score of at least 80%

Required Credits: 120

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<td>Astronomy Lab I</td>
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<td>Introductory Mechanics and Laboratory for PHYS 2320</td>
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<tr>
<td>PHYS 2421</td>
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University Core Curriculum

Complete the University Core Curriculum requirements. (p. 10)  

Math Major

Required Courses:

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<td>Intro. to Higher Mathematics</td>
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<td>MATH 3323</td>
<td>Matrix Algebra</td>
<td>3</td>
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<tr>
<td>or MATH 4326</td>
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<td>Principles of Mathematics</td>
<td>3</td>
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<tr>
<td>MATH 3329</td>
<td>Geometry</td>
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<tr>
<td>MATH 3341</td>
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<td>3</td>
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<tr>
<td>MATH 4303</td>
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Choose one of the two sequences:  

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<tr>
<td>STAT 3330 &amp; STAT 4380</td>
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Choose six semester hours from the following math electives:  

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<td>MATH 4341</td>
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Required Secondary Education Minor Courses:

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<td>RED 3342</td>
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<td>SCED 4367</td>
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<td>SCED 4691</td>
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Other Requirements

Required Courses:

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<tbody>
<tr>
<td>CS 1401</td>
<td>Intro to Computer Science</td>
<td>4</td>
</tr>
<tr>
<td>or CS 1320</td>
<td>Computer Programming Sci/Engr</td>
<td></td>
</tr>
<tr>
<td>RWS 3359</td>
<td>Technical Writing</td>
<td>3</td>
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</tbody>
</table>

Elective:

Select five additional hours at any level  

Total Hours  

1. Although the UTEP core choice is larger, students are encouraged to choose the core courses that also satisfies the major.

2. A total of thirty-seven hours of upper division coursework is required for all Bachelor of Science degrees.

7-12 Math/Physics

Students may not apply to the Educator Preparation Program until they meet the following requirements:
1. Have a UTEP overall GPA of at least 2.75
2. Have a UTEP majors GPA of at least 2.75
3. Pass the UTEP math content qualifying exam with a score of at least 80%

Required Credits: 120

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td><strong>University Core Curriculum</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Complete the University Core Curriculum requirements. (p. 10)</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td><strong>Math Major</strong></td>
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<td></td>
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<tr>
<td>or MATH 2325</td>
<td>Intro. to Higher Mathematics</td>
<td></td>
</tr>
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<td>MATH 2313</td>
<td>Calculus III</td>
<td>3</td>
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<td>MATH 2326</td>
<td>Differential Equations</td>
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<td>History of Mathematics</td>
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<tr>
<td>MATH 3323</td>
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<tr>
<td>or MATH 4326</td>
<td>Linear Algebra</td>
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<tr>
<td>MATH 3325</td>
<td>Principles of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 3329</td>
<td>Geometry</td>
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</tr>
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<td>MATH 3341</td>
<td>Introduction to Analysis</td>
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</tr>
<tr>
<td>MATH 4303</td>
<td>Fundamental Math/Adv. Standpt</td>
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<tr>
<td></td>
<td>Choose one of the two sequences:</td>
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<tr>
<td>STAT 3330</td>
<td>Probability and Statistics Inference</td>
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</tr>
<tr>
<td>&amp; STAT 4380</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3325</td>
<td>Prob &amp; Applied Statistics and Applied Regression Analysis</td>
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<tr>
<td>&amp; STAT 4385</td>
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<td>Choose three semester hours from the following math electives:</td>
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<tr>
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<tr>
<td>MATH 4325</td>
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<tr>
<td>MATH 4329</td>
<td>Numerical Analysis</td>
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<tr>
<td>MATH 4341</td>
<td>Real Analysis</td>
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<td></td>
<td><strong>Required Secondary Education Minor Courses:</strong></td>
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<tr>
<td>BED 4317</td>
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<tr>
<td>EDPC 3300</td>
<td>Developmental Variations</td>
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<td>RED 3342</td>
<td>Content Area Literacy</td>
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<td>SCED 3311</td>
<td>Curriculum Plan-Secondary Schl</td>
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<td>SCED 4367</td>
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<td>SCED 4691</td>
<td>Student Teaching in Sec School</td>
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<td></td>
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<tr>
<td>PHYS 2325</td>
<td>Survey of Modern Physics</td>
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<tr>
<td>PHYS 2420</td>
<td>Introductory Mechanics</td>
<td>4</td>
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<tr>
<td>PHYS 2421</td>
<td>Introductory Electromagnetism</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 3323</td>
<td>Physical Optics</td>
<td>3</td>
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<tr>
<td></td>
<td>Additional Required Courses:</td>
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<td>CS 1401</td>
<td>Intro to Computer Science</td>
<td>4</td>
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<tr>
<td>or CS 1320</td>
<td>Computer Programming Sci/Engr</td>
<td></td>
</tr>
<tr>
<td>RWS 3359</td>
<td>Technical Writing</td>
<td>3</td>
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<td></td>
<td>Electives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Take additional semester hours with advisor approval</td>
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<tr>
<td></td>
<td><strong>Total Hours</strong></td>
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</table>
Although the UTEP core choice is larger, students are encouraged to choose the core courses that also satisfies the major.

A total of thirty-seven hours of upper division coursework is required for all Bachelor of Science degrees.

### Actuarial Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>COMM 1302</td>
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<tr>
<td>CS 1320</td>
<td>Computer Programming Sci/Engr</td>
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<tr>
<td>ECON 2304</td>
<td>Principles of Economics</td>
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**Minor in Finance Required Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ACCT 2301</td>
<td>Principles of Accounting I</td>
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<td>FIN 3310</td>
<td>Business Finance</td>
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<tr>
<td>FIN 3315</td>
<td>Investments</td>
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<td>FIN 4310</td>
<td>Managerial Finance</td>
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<tr>
<td>FIN 4311A</td>
<td>Managerial Finance Laboratory</td>
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<tr>
<td>FIN 4315</td>
<td>Portfolio Analysis</td>
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<td>FIN 4315A</td>
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<td>Analysis of Derivatives</td>
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<td>QMB 3350</td>
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**Physics Sequence:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>PHYS 2420</td>
<td>Introductory Mechanics</td>
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<tr>
<td>PHYS 2421</td>
<td>Introductory Electromagnetism</td>
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**University Core Curriculum**

Complete the University Core Curriculum requirements. (p. 10)  

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
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<tr>
<td>MATH 2300</td>
<td>Discrete Mathematics</td>
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</tr>
<tr>
<td>or MATH 2325</td>
<td>Intro. to Higher Mathematics</td>
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</tr>
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<td>MATH 2313</td>
<td>Calculus III</td>
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<td>MATH 2320</td>
<td>Mathematics of Interest</td>
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<td>MATH 2326</td>
<td>Differential Equations</td>
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</tr>
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<td>MATH 3320</td>
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<tr>
<td>MATH 3323</td>
<td>Matrix Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 4326</td>
<td>Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 3325</td>
<td>Principles of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 3341</td>
<td>Introduction to Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 4329</td>
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<tr>
<td>STAT 3320</td>
<td>Probability and Statistics</td>
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<td>STAT 3330</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>STAT 4380</td>
<td>Statistics Inference</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 4385</td>
<td>Applied Regression Analysis</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**

Take additional semester hours with advisor approval

**Total Hours**  

120
A total of thirty-seven hours of upper division coursework is required for all Bachelor of Science degrees. Course requires a grade of C or better.

### Applied Mathematics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>CS 1401</td>
<td>Intro to Computer Science</td>
<td>4</td>
</tr>
<tr>
<td>or CS 1320</td>
<td>Computer Programming Sci/Engr</td>
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</tr>
<tr>
<td>PHYS 2420</td>
<td>Introductory Mechanics</td>
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<tr>
<td>PHYS 2421</td>
<td>Introductory Electromagnetism</td>
<td>4</td>
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</table>

**University Core Curriculum**
Complete the University Core Curriculum requirements. (p. 10) 42

### Applied Mathematics

**Required Courses:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>MATH 1312</td>
<td>Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1411</td>
<td>Calculus I</td>
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</tr>
<tr>
<td>MATH 2300</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2313</td>
<td>Calculus III</td>
<td>3</td>
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<tr>
<td>MATH 2326</td>
<td>Differential Equations</td>
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<tr>
<td>MATH 3323</td>
<td>Matrix Algebra</td>
<td>3</td>
</tr>
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<td>MATH 3325</td>
<td>Principles of Mathematics</td>
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<td>MATH 3335</td>
<td>Applied Analysis I</td>
<td>3</td>
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<td>MATH 4329</td>
<td>Numerical Analysis</td>
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<td>MATH 4336</td>
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<td>RWS 3359</td>
<td>Technical Writing</td>
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<tr>
<td>STAT 3330</td>
<td>Probability</td>
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</tr>
<tr>
<td>or STAT 4385</td>
<td>Applied Regression Analysis</td>
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</table>

Select three hours of the following:

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<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tr>
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<td>History of Mathematics</td>
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<td>MATH 3303</td>
<td>Fundmtl Numb Thry Adv Strdpt</td>
<td></td>
</tr>
<tr>
<td>MATH 3304</td>
<td>Fundamentals/Geometry Standpt</td>
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<tr>
<td>MATH 3305</td>
<td>Proportion and Algebra</td>
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<tr>
<td>MATH 3308</td>
<td>Proportn &amp; Algebrac Reasong I</td>
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<tr>
<td>MATH 3309</td>
<td>Proportn &amp; Algebrac Reasong II</td>
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<td>MATH 3319</td>
<td>Elementary Number Theory</td>
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<td>MATH 3320</td>
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</tr>
<tr>
<td>MATH 3329</td>
<td>Geometry</td>
<td></td>
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<td>MATH 3341</td>
<td>Introduction to Analysis</td>
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<td>MATH 4199</td>
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<td>MATH 4302</td>
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<td>Fundamental Math/Adv. Standpt</td>
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<td>Modern Algebra</td>
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<tr>
<td>STAT 4385</td>
<td>Applied Regression Analysis</td>
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</table>

**Additional Hours**
Additional semester hours with advisor approval
Other Science Requirements

Please choose one sequence from the following:

<table>
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<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIOL 1305 &amp; BIOL 1107</td>
<td>General Biology and Topics in Study of Life I</td>
</tr>
<tr>
<td>OR</td>
<td>CHEM 1305 &amp; CHEM 1105</td>
</tr>
<tr>
<td>OR</td>
<td>GEOL 1313 &amp; GEOL 1103</td>
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</table>

Minor (Optional)

Complete an 18-hour minor or 18 hours of electives, at least 10 must be upper-division

Upper Division Requirement

Select a total of thirty-seven hours of upper division course work

Total Hours

1  Although the UTEP core choice is larger, students are encouraged to choose the core courses that also satisfies the major.

2  A total of thirty-seven hours of upper division coursework is required for all Bachelor of Science degrees.

3  Course requires a grade of C or better

Statistics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>MATH 1312</td>
<td>Calculus II</td>
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<td>MATH 1411</td>
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<td>Calculus III</td>
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<td>Principles of Mathematics</td>
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<td>STAT 2480</td>
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<td>STAT 4380</td>
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<tr>
<td>STAT 4385</td>
<td>Applied Regression Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2300</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 2325</td>
<td>Intro. to Higher Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 3323</td>
<td>Matrix Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 4326</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 4329</td>
<td>Statistical Programming</td>
<td>3</td>
</tr>
</tbody>
</table>
Additional Required Courses

10

- CS 1301  Intro to Computer Science
- CS 1101  and Intro to Computer Science Lab
- RWS 3359  Technical Writing
- SCI 1301  Inquiry in Math & Science

Minor (Optional)

18

Complete an 18-hour minor or 18 hours of electives, at least 10 must be upper-division

Electives

9

Take an additional 9 hours of upper-division electives

Upper Division Requirement

37

Select a total of thirty-seven hours of upper division course work

Total Hours

120

Although the UTEP core choice is larger, students are encouraged to choose the core courses that also satisfies the major.

MATH 4370 Topics Seminar, MATH 4199 Individ Studies in Mathematics, MATH 4399 Indiv Studies in Mathematics with approval.

A total of thirty-seven hours of upper division coursework is required for all Bachelor of Science degrees.

Course requires a grade of C or better

University Core Curriculum

NOTE: The department may make specific suggestions for courses which are most applicable towards your major.

Psychology and Criminal Justice majors and minors are required to take MATH 1320 Math for Social Sciences I or a higher level Calculus course.

Business majors are required to take MATH 1320 Math for Social Sciences I or a higher level Calculus course.

NOTE: All courses require a C or better

Communication (six hours)

The objective of the communication component is to enable the student to communicate effectively in clear and correct prose or orally in a style appropriate to the subject, occasion, and audience.

Select six hours of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>COMM 1611</td>
<td>Written and Oral Communication</td>
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<tr>
<td>ENGL 1313</td>
<td>Writing About Literature</td>
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<tr>
<td>RWS 1301</td>
<td>Rhetoric &amp; Composition I</td>
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</tr>
<tr>
<td>RWS 1302</td>
<td>Rhetoric &amp; Composition 2</td>
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<tr>
<td>RWS 1601</td>
<td>Rhetoric, Composition &amp; Comm</td>
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For students whose secondary education was not in English:

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<tr>
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<td>Expos Engl Compos-Spkr Esl</td>
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<td>ESOL 1312</td>
<td>Res &amp; Crit Writng Spkr Esl</td>
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</tr>
</tbody>
</table>

Total Hours

12

American History (six hours)

The objectives of the history component are to expand students’ knowledge of the origin and history of the U.S., their comprehension of the past and current role of the U.S. in the world, and their ability to critically evaluate and analyze historical evidence. U.S. history courses (three hours must be Texas history) include:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 1301</td>
<td>History of U.S. to 1865</td>
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</tr>
<tr>
<td>HIST 1302</td>
<td>History of U.S. Since 1865</td>
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</table>

Total Hours

6
**Language, Philosophy & Culture  (three hours)**

<table>
<thead>
<tr>
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<th>Title</th>
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<td>Latina/o Presence in the U.S.</td>
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<td>ENGL 2311</td>
<td>English Literature</td>
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<td>ENGL 2313</td>
<td>Intro to American Fiction</td>
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<tr>
<td>ENGL 2314</td>
<td>Intro to American Drama</td>
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<td>ENGL 2318</td>
<td>Intro to American Poetry</td>
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<tr>
<td>FREN 2322</td>
<td>Making of the &quot;Other&quot; Americas</td>
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<tr>
<td>HIST 2301</td>
<td>World History to 1500</td>
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<tr>
<td>HIST 2302</td>
<td>World History Since 1500</td>
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<tr>
<td>PHIL 1301</td>
<td>Introduction to Philosophy</td>
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<tr>
<td>PHIL 2306</td>
<td>Ethics</td>
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<tr>
<td>RS 1301</td>
<td>Introd to Religious Studies</td>
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<tr>
<td>SPAN 2340</td>
<td>Seeing &amp; Naming: Conversations</td>
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<td>WS 2300</td>
<td>Introduction to Womens Studies</td>
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<td>WS 2350</td>
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Total Hours: 3

**Mathematics  (three hours)**

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<tr>
<td>MATH 1310</td>
<td>Trigonometry and Conics</td>
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<tr>
<td>MATH 1319</td>
<td>Math in the Modern World</td>
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<td>MATH 1320</td>
<td>Math for Social Sciences I</td>
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</tr>
<tr>
<td>MATH 1411</td>
<td>Calculus I</td>
<td></td>
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<tr>
<td>MATH 1508</td>
<td>Precalculus 1,2</td>
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<td>MATH 2301</td>
<td>Math for Social Sciences II</td>
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<tr>
<td>STAT 1380</td>
<td>Statistical Literacy</td>
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<tr>
<td>STAT 2480</td>
<td>Elementary Statistical Methods</td>
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1 A higher-level course in the calculus sequence can be substituted.
2 TCCN MATH 1314 will also satisfy this requirement.

Total Hours: 3

**Life & Physical Sciences  (six hours)**

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<td>ASTR 1307</td>
<td>Elem Astronomy-Solar System</td>
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<tr>
<td>ASTR 1308</td>
<td>Elem Astr Stars &amp; Galaxies</td>
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The objective of the study of the natural sciences is to enable the student to understand, construct, and evaluate relationships in the natural sciences, and to enable the student to understand the bases for building and testing theories. The courses listed are for non-majors; the major courses in the discipline can be substituted for the non-major sequence. A minimum of two semesters of lecture and one semester of laboratory associated with one of the courses, or two semesters of combined (3 credit) lecture-laboratory courses (Only six hours apply toward the required 42.):
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<td>BIOL 1104</td>
<td>Human Biology Laboratory</td>
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<tr>
<td>BIOL 1107</td>
<td>Topics in Study of Life I</td>
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<tr>
<td>BIOL 1108</td>
<td>Organismal Biology Laboratory</td>
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<tr>
<td>BIOL 1203</td>
<td>Introductory Biology</td>
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<tr>
<td>BIOL 1304</td>
<td>Human Biology</td>
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<tr>
<td>BIOL 1305</td>
<td>General Biology</td>
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<tr>
<td>BIOL 1306</td>
<td>Organismal Biology</td>
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</tr>
<tr>
<td>BIOL 2111</td>
<td>Human Anat/Physio Lab I</td>
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<tr>
<td>BIOL 2113</td>
<td>Human Anat/Physio Lab II</td>
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<tr>
<td>BIOL 2311</td>
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<td>BIOL 2313</td>
<td>Human Anat/Physiology II</td>
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<td>CHEM 1106</td>
<td>Laboratory for CHEM 1306</td>
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<tr>
<td>CHEM 1107</td>
<td>Intro General Chemistry Lab</td>
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<td>CHEM 1108</td>
<td>Intro Organic &amp; Biochem Lab</td>
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<td>Non-major Lab for ESCI 1301</td>
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<td>Lab for GEOL 1313</td>
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<td>GEOL 1211</td>
<td>Principles of Earth Sciences</td>
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<td>GEOL 1212</td>
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<tr>
<td>GEOL 1230</td>
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<td>GEOL 1231</td>
<td>Natural Hazards</td>
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<td>GEOL 1313</td>
<td>Intro to Physical Geology</td>
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<td>GEOL 1314</td>
<td>Intro to Historical Geol</td>
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<td>HSCI 2302</td>
<td>Fundamentals of Nutrition</td>
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<td>HSCI 2303</td>
<td>Wellness Dynamics</td>
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<td>MICR 2330</td>
<td>Microorganisms and Disease</td>
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<td>PHYS 1403</td>
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<td>General Physics II</td>
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<td>PHYS 2421</td>
<td>Introductory Electromagnetism</td>
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**Political Science (six hours)**

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<tr>
<td>POLS 2310</td>
<td>Introduction to Politics</td>
<td>3</td>
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The objectives of the political science component are to expand students' knowledge of the origin and evolution of the U.S. and Texas political systems, focusing on the growth of political institutions, and on the constitutions of Texas and the United States; and to enhance their understanding of federalism, states rights, and individual civil liberties, rights, and responsibilities.

Required Courses:
POLS 2310 | Introduction to Politics 3
**Social and Behavioral Sciences (three hours)**

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<td>ANTH 1301</td>
<td>Intro-Phys Anth/Archeolog</td>
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<td>ANTH 1302</td>
<td>Intro-Cultural Anthropology</td>
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<td>Cultural Geography</td>
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<tr>
<td>ANTH 2320</td>
<td>Intro to Linguistics</td>
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<tr>
<td>CE 2326</td>
<td>Econ for Engrs &amp; Scientists</td>
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<tr>
<td>COMM 2350</td>
<td>Interpersonal Communication</td>
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<tr>
<td>COMM 2372</td>
<td>Mass Media and Society</td>
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<tr>
<td>ECON 2303</td>
<td>Principles of Economics</td>
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<tr>
<td>EDPC 1301</td>
<td>Introduction to Ed Psychology</td>
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<td>EDU 1342</td>
<td>Action Research in Classrooms</td>
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<td>ENGL 2320</td>
<td>Introduction to Linguistics</td>
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<td>GEOG 1310</td>
<td>Cultural Geography</td>
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<td>Lang. Inside &amp; Out: Sel Topics</td>
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<tr>
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<td>Introduction to Psychology</td>
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<td>SOCI 1301</td>
<td>Introduction to Sociology</td>
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<td>SOCI 1310</td>
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**Creative Arts (three hours)**

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<td>ART 1300</td>
<td>Art Appreciation</td>
<td>3</td>
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<tr>
<td>ARTH 1305</td>
<td>History of Art I</td>
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<tr>
<td>ARTH 1306</td>
<td>History of Art II</td>
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<tr>
<td>DANC 1304</td>
<td>Dance Appreciation</td>
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<td>FILM 1390</td>
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<td>MUSL 1324</td>
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<td>MUSL 1327</td>
<td>Jazz to Rock</td>
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<td>MUSL 2321</td>
<td>Music, Culture, and Society</td>
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<tr>
<td>THEA 1313</td>
<td>Introduction to Theatre</td>
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**Component Area Option (six hours)**

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<td>BUSN 1301</td>
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<td>COMM 1301</td>
<td>Public Speaking</td>
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</table>
4-Year Sample Degree Plan
BS in Mathematics (Starting with Calculus)

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<tbody>
<tr>
<td>CS 1310</td>
<td>Intro-Computational Thinking</td>
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<tr>
<td>CS 1320</td>
<td>Computer Programming Sci/Engr</td>
<td>3</td>
</tr>
<tr>
<td>EL 1301</td>
<td>Eng Innovation and Leadership</td>
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<tr>
<td>SCI 1301</td>
<td>Inquiry in Math &amp; Science</td>
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<tr>
<td>UNIV 1301</td>
<td>Seminar/Critical Inquiry</td>
<td>3</td>
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Total Hours: 6

FRESHMAN

Fall
- CS 1320: Computer Programming Sci/Engr (3 hours)
- MATH 1411: Calculus I (4 hours)
- PHYS 2420: Introductory Mechanics (4 hours)
- RWS 1301: Rhetoric & Composition I (3 hours)

Spring
- MATH 1312: Calculus II (3 hours)
- PHYS 2421: Introductory Electromagnetism (4 hours)
- PSYC 1301: Introduction to Psychology (3 hours)
- RWS 1302: Rhetoric & Composition 2 (3 hours)

SOPHOMORE

Fall
- CHEM 1305: General Chemistry (4 hours)
  & CHEM 1105: and Laboratory for CHEM 1305
- COMM 1301: Public Speaking (3 hours)
- HIST 1301: History of U.S. to 1865 (3 hours)
- MATH 2313: Calculus III (3 hours)
- PHIL 2306: Ethics (3 hours)

Spring
- CHEM 1306: General Chemistry (4 hours)
  & CHEM 1106: and Laboratory for CHEM 1306
- HIST 1302: History of U.S. Since 1865 (3 hours)
- MATH 2326: Differential Equations (3 hours)
- Elective (3 hours)
- Minor (3 hours)

JUNIOR

Fall
- ART 1300: Art Appreciation (3 hours)
- MATH 3325: Principles of Mathematics (3 hours)
- POLS 2310: Introduction to Politics (3 hours)
- STAT 3330: Probability (3 hours)
- Minor (3 hours)

Spring
- CS 1320: Computer Programming Sci/Engr (3 hours)
- MATH 3341: Introduction to Analysis (3 hours)
- POLS 2311: American Gover & Politics (3 hours)
- Upper Division Math Course (3 hours)
- Elective (4 hours)

SENIOR
### BS in Mathematics (Starting with Pre-Calculus)

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<td>FRESHMAN</td>
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<td>Fall</td>
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<tr>
<td>CHEM 1305 &amp; CHEM 1105</td>
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<td>History of U.S. Since 1865</td>
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<td>PSYC 1301</td>
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<td>Rhetoric &amp; Composition 2</td>
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<td>PHIL 2306</td>
<td>Ethics</td>
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<td>PHYS 2421</td>
<td>Introductory Electromagnetism</td>
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<td>POLS 2310</td>
<td>Introduction to Politics</td>
<td>3</td>
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<td>Spring</td>
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<tr>
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<td>MATH 2326</td>
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<td>POLS 2311</td>
<td>American Gover &amp; Politics</td>
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Upper Division Math Course

**Spring**
- CS 1320: Computer Programming Sci/Engr (3)
- MATH 3335: Applied Analysis I (3)
- MATH 3341: Introduction to Analysis (3)
- Minor (3)
- Upper-Division Math Elective (3)

**SENIOR**

**Fall**
- MATH 4325: Modern Algebra (3)
- MATH 4341: Real Analysis (3)
- RWS 3359: Technical Writing (3)
- Minor (3)

**Spring**
- MATH 4326: Linear Algebra (3)
- Minor (3)
- Minor (3)
- Elective (3)

**Total Hours**: 127

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**BS in Mathematics with a Concentration in Actuarial Science (Starting with Calculus)**

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<tr>
<td>COMM 1302</td>
<td>Business/Profession Comm</td>
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<td>MATH 1411</td>
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<td>Introductory Mechanics</td>
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<tr>
<td>RWS 1301</td>
<td>Rhetoric &amp; Composition I</td>
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<tr>
<td><strong>Spring</strong></td>
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<tr>
<td>MATH 1312</td>
<td>Calculus II</td>
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</tr>
<tr>
<td>PHYS 2421</td>
<td>Introductory Electromagnetism</td>
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<tr>
<td>RWS 1302</td>
<td>Rhetoric &amp; Composition 2</td>
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<tr>
<td>ECON 2304</td>
<td>Principles of Economics</td>
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<tr>
<td><strong>Fall</strong></td>
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<tr>
<td>ACCT 2301</td>
<td>Principles of Accounting I</td>
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<td>Computer Programming Sci/Engr</td>
<td>3</td>
</tr>
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<td>HIST 1301</td>
<td>History of U.S. to 1865</td>
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**Total Hours**

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BS in Mathematics with a Concentration in Actuarial Science (Starting with Pre-Calculus)

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**SOPHOMORE**

**Fall**

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**Spring**

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#### JUNIOR

**Fall**

- ART 1300: Art Appreciation 3
- FIN 3310: Business Finance 3
- MATH 2300: Discrete Mathematics 3
  - or MATH 2325: Intro. to Higher Mathematics 3
- MATH 3325: Principles of Mathematics 3
- POLS 2310: Introduction to Politics 3
- STAT 3330: Probability 3

**Spring**

- CIS 3301: Intro to Data Process & Prog 3
- FIN 3315: Investments 3
- MATH 3323: Matrix Algebra 3
  - or MATH 4326: Linear Algebra 3
- MATH 3341: Introduction to Analysis 3
- QMB 3350: Business Analytics 3
- POLS 2311: American Gover & Politics 3

#### SENIOR

**Fall**

- FIN 4310: Managerial Finance 4.5
  - & FIN 4311A: and Managerial Finance Laboratory 4.5
- MATH 2320: Mathematics of Interest 3
- RWS 3359: Technical Writing 3
- STAT 3320: Probability and Statistics 3
- STAT 4380: Statistics Inference 3
  - or STAT 4385: Applied Regression Analysis 3

**Spring**

- FIN 4315: Portfolio Analysis 4.5
  - & 4315A: and Portfolio Analysis Laboratory 4.5
- FIN 4316: Analysis of Derivatives 3
- MATH 3320: Actuarial Mathematics 3
- MATH 4329: Numerical Analysis 3

**Total Hours**

125

### BS in Mathematics with a Concentration in Applied Math (Starting with Calculus)

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#### FRESHMAN

**Fall**

- MATH 1411: Calculus I 4
- PHYS 2420: Introductory Mechanics 4
- RWS 1301: Rhetoric & Composition I 3
- UNIV 1301: Seminar/Critical Inquiry 3

**Spring**

- MATH 1312: Calculus II 3
- PHYS 2421: Introductory Electromagnetism 4
- PSYC 1301: Introduction to Psychology 3
- RWS 1302: Rhetoric & Composition 2 3
## BS in Mathematics

### SOPHOMORE

**Fall**
- CHEM 1305: General Chemistry and Laboratory for CHEM 1305 4
- & CHEM 1105: General Chemistry and Laboratory for CHEM 1305 4
- CS 1320: Computer Programming Sci/Engr 3
- HIST 1301: History of U.S. to 1865 3
- MATH 2313: Calculus III 3
- PHIL 2306: Ethics 3

**Spring**
- CHEM 1306: General Chemistry and Laboratory for CHEM 1306 4
- & CHEM 1106: General Chemistry and Laboratory for CHEM 1306 4
- HIST 1302: History of U.S. Since 1865 3
- MATH 2300: Discrete Mathematics 3
- MATH 2326: Differential Equations 3

Field of Study Approved Courses 3

### JUNIOR

**Fall**
- ART 1300: Art Appreciation 3
- MATH 3325: Principles of Mathematics 3
- POLS 2310: Introduction to Politics 3
- STAT 3330: Probability 3
- Upper Division Course 3

**Spring**
- MATH 3335: Applied Analysis I 3
- POLS 2311: American Gover & Politics 3
- STAT 4385: Applied Regression Analysis 3
- Upper Division Course 3
- Additional hours as approved by advisor 3

### SENIOR

**Fall**
- RWS 3359: Technical Writing 3
- MATH 3323: Matrix Algebra 3
- Upper Division Math Course 3
- Upper Division Course 3
- Additional hours as approved by advisor 4

**Spring**
- MATH 4329: Numerical Analysis 3
- MATH 4336: Applied Analysis II 3
- Field of Study Course 3
- Field of Study Course 3
- Field of Study Course 3

Total Hours 120

## BS in Mathematics with a Concentration in Applied Math (Starting with Pre-Calculus)

### Code | Title | Hours
--- | --- | ---
**BS IN MATHEMATICS WITH A CONCENTRATION IN APPLIED MATHEMATICS**

### FRESHMAN

**Fall**
- ART 1300: Art Appreciation 3
- MATH 1508: Precalculus 5
- RWS 1301: Rhetoric & Composition I 3
- UNIV 1301: Seminar/Critical Inquiry 3
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**BS in Mathematics with Concentration in 7-12 Math (Starting with Pre-Calculus)**

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**Total Hours**: 126

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### BS in Mathematics with Concentration in 7-12 Math/Physics (Starting with Calculus)

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