CORE CURRICULUM
Core courses must be chosen from approved lists.

First Year Signature Course 3
English Composition 3
Humanities 3
American & Texas Government 6
American History 6
Social & Behavioral Science 3
Mathematics (fulfilled by course in major) 0
Science & Technology-I (fulfilled by courses in major) 0
Science & Technology-II (fulfilled by courses in major) 0
Visual & Performing Arts 3

SKILLS & EXPERIENCE FLAGS
Flags attached to courses are displayed in the online Course Schedule.

Two Writing Flags:
1. Core Writing Flag (cannot also fulfill another core curriculum requirement)
2. Additional Writing Flag
   Note: One of the two writing flags must be upper-division.

One Quantitative Reasoning Flag
One Global Cultures Flag
One Cultural Diversity in the U.S. Flag
One Ethics and Leadership Flag
One Independent Inquiry Flag

TEACHING INSTRUCTION COURSEWORK

HIS 329U or PHL 329U 3

Research methods course:
PHY 301 & 101L* , 316 & 116L* , and 315 & 115L 12
* PHY 303K & 105M and 303L & 105N, substitute for PHY 301 & 101L and 316 & 116L. However, they are not preferred preparation for PHY 315 & 115L.

Upper-division physics common to all certifications:
PHY 355 Modern Physics & Thermodynamics
PHY 353L Modern Physics Laboratory

3 of the following (common to all certifications):
PHY 329 Introduction to Computational Physics
PHY 333 Modern Optics
PHY 336K Classical Dynamics
PHY 338K Electronic Techniques
PHY 352K Classical Electrodynamics I
PHY 373 Quantum Physics I: Foundations
SCI 365 Physics by Inquiry

ADDITIONAL GRADUATION REQUIREMENTS
- Minimum 21 upper-division hours in residence, including 12 in Physics
- Minimum 60 hours in residence overall
- Minimum 36 upper-division hours
- 126 hours total overall
- Minimum grade of C- & minimum 2.0 GPA in all Mathematics & Natural Sciences courses
- Minimum UT-Austin Grade Point Average of 2.5
- Must pass the final teaching portfolio review
- Must apply to graduate during final semester
- 2022–24 Catalog expires August 2030

ELECTIVES
Enough elective hours to reach 126 total

( The number of elective hours needed may vary depending on course selections.)

OPTION 5: TEACHING
Designed to fulfill the course requirements for certification as a middle grades or secondary school science teacher in Texas. Students choose 1 of 4 certification options: composite science certification, physical sciences certification, physics/mathematics certification, or mathematics, physical science, and engineering certification. Completion of the course requirements does not guarantee teaching certification. Contact the UTeach-Natural Sciences academic adviser for more information.

INTRODUCTORY MATHEMATICS & SCIENCE

M 408C & 408D or 408N, 408S, & 408M 8–12
M 427J or 427K 4
M 427L 4

PHY 301 & 101L*, 316 & 116L*, and 315 & 115L 12
* PHY 303K & 105M and 303L & 105N, substitute for PHY 301 & 101L and 316 & 116L. However, they are not preferred preparation for PHY 315 & 115L.

Note: Introductory science is substantially different for Option 6

Upper-division physics common to all certifications:
PHY 355 Modern Physics & Thermodynamics
PHY 353L Modern Physics Laboratory

3 of the following (common to all certifications):
PHY 329 Introduction to Computational Physics
PHY 333 Modern Optics
PHY 336K Classical Dynamics
PHY 338K Electronic Techniques
PHY 352K Classical Electrodynamics I
PHY 373 Quantum Physics I: Foundations
SCI 365 Physics by Inquiry

See page 2 for Option 5 Teaching Certifications
**OPTION 5: TEACHING**
Complete all coursework in 1 of the following certifications:

<table>
<thead>
<tr>
<th>Composite Science Certification:</th>
<th>Minimum Hours Required</th>
<th>For mathematics, physical science, and engineering certification:</th>
<th>Minimum Hours Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 311C and 311D</td>
<td>6</td>
<td>CH 301 or 301C</td>
<td>3</td>
</tr>
<tr>
<td>CH 301 or 301C</td>
<td>3</td>
<td>CH 302 or 302C</td>
<td>3</td>
</tr>
<tr>
<td>CH 302 or 302C</td>
<td>3</td>
<td>General CH lab:</td>
<td>2</td>
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<tr>
<td>6 hours of coursework in GEO</td>
<td>6</td>
<td>CH 204</td>
<td></td>
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<tr>
<td>Note: courses intended for non-science majors may not be counted toward this requirement</td>
<td></td>
<td>Secondary school math:</td>
<td>6</td>
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<tr>
<td>6 additional hours in BIO, CH, or GEO to complete 12 hours in a 2nd field</td>
<td>6</td>
<td>M 315C and 333L</td>
<td></td>
</tr>
</tbody>
</table>

**Physical Sciences Certification**

| 3 additional hours of upper-division PHY | 3 |
| CH 301 or 301C                          | 3 |
| CH 302 or 302C                          | 3 |
| General CH lab:                          | 2–3 |
| CH 204 or 317                           | |
| Physical chemistry:                     | 8 |
| CH 353 & 153K                           | |
| CH 354L & 154K                          | |
| Analytical Chemistry:                   | 4 |
| CH 455 or 456                           | |

<table>
<thead>
<tr>
<th>For physics/mathematics certification:</th>
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<tbody>
<tr>
<td>Secondary school math:</td>
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<tr>
<td>M 315C and 333L</td>
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<tr>
<td>Linear algebra:</td>
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<tr>
<td>M 341 or 340L</td>
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<tr>
<td>Discrete math:</td>
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<tr>
<td>M 325K</td>
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<tr>
<td>Probability:</td>
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<td>M 362K</td>
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<tr>
<td>Applied statistics:</td>
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<td>M 358K</td>
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<tr>
<td>Problem solving or discovery:</td>
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<tr>
<td>M 375D</td>
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