See list of approved courses on second page.

Math Elective
- 3 hour Math elective

See list of approved courses on second page.

Foreign Language
If not exempt, two semesters of the same language need to be completed.

General Education
- History elective
- History elective
- POLS 2311
- POLS 2312
- Social/Behavioral: [IE 2308 or ECON 2305]
- Creative Arts elective
- Language/Philosophy/Culture elective

Pre-Professional Courses

CSE 1310 Intro to Programming (pre-requisite: MATH 1302/1402 or at least a 61 on ALEKS)
CSE 1320 Intermediate Programming (co-requisite: Math 1421 or at least a 61 on ALEKS)
CSE 1106 Intro to CSE
CSE 2312 Computer Organization
CSE 3318 Algorithms & Data Structures
CSE 2315 Discrete Structures
CSE 3380 Linear Algebra
CSE 3310 Intro to Software Eng.
CSE 3330 Databases
CSE 3302 Programming Languages
CSE 3315 Theoretical CS

Professional Courses

CSE 4305 Compilers
CSE 4303 Computer Graphics
CSE 4360 Robotics
CSE 4308 Artificial Intelligence
CSE 4308 Information Security
CSE 4381 Information Security 2
CSE 4382 Secure Programming
CSE 4380 Computer Networks

6 Technical Elective courses out of which at least one must be:
CSE 4305 Compilers, CSE 4303 Computer Graphics, or CSE 4360 Robotics.

Security Elective

CSE 4344 Senior Design I
CSE 4316 Senior Design II
CSE 3314 Professional Practices (pre-requisites: COMS 2302 and CSE 3318)
IE 3301 Engineering Probability and Stats

COMS 2302 Professional and Tech. Communication (pre-requisite: ENGL 1301)

ENGL 1301

MATH 1426 Calculus I
MATH 2425 Calculus II
PHYS 1443 Technical Physics I
PHYS 1444 Technical Physics II

You must complete all of these courses with at least a C and be admitted to the professional program before you can enroll in any 4000 level CSE courses.

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The Senior Design courses must be taken in consecutive semesters: (Fall and Spring), (Spring and Summer), or (Summer and Fall).

Transfer Students
- ENGR 1101 (freshmen students)
- OR ENGR 1101 (transfer students)
- CSE 1325 Object-Oriented Programming
- CSE 2312 Computer Organization
- CSE 3330 Databases
- CSE 3302 Programming Languages
- CSE 3315 Theoretical CS

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General Education
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- Creative Arts elective
- Language/Philosophy/Culture elective
Each course taken can be used to satisfy only one degree plan requirement. For example, you can CSE 4380 as your security elective, but it will not also count as a technical elective. If you take CSE 4380 and CSE 4381, CSE 4380 can satisfy your security elective and CSE 4381 can count as a technical elective.

We will accept either CSE 3380 or MATH 3330 as the linear algebra class that you need for your degree plan. The pre-req for MATH 3330 is MATH 2425, and it’s taught in summer, fall, and spring.

We will accept either IE 3301 or MATH 3313 as the statistics class that you need for your degree plan. The pre-req for MATH 3313 is MATH 2326 and it is only taught in the fall.

Mathematics Electives

- **MATH 2326 - Calculus III** (Fall, Spring, & Summer) pre-req: MATH 2425
- **CSE 4345 - Computational Methods** (Fall & Spring) pre-reqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330

Technical Electives

- **CSE 4303 – Computer Graphics** pre-reqs: CSE 3318 and CSE 3380 or MATH 3330 (Fall & Spring)
- **CSE 4304 – Game Design and Development** pre-reqs: CSE 3380 or MATH 3330 (Fall only)
- **CSE 4305 – Compilers** pre-reqs: CSE 3302 and CSE 3315 (Fall & Spring)
- **CSE 4309 – Fundamentals of Machine Learning** pre-reqs: CSE 3318, MATH 2326 or the consent of the instructor, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall only)
- **CSE 4310 – Fundamentals of Computer Vision** pre-reqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Spring only)
- **CSE 4311 – Neural Networks and Deep Learning** pre-reqs: CSE 3380 or MATH 3330 and IE 3301 or MATH 3313 (Spring only)
- **CSE 4321 – Software Testing and Maintenance** pre-reqs: CSE 3310 (Fall, Spring, & Summer)
- **CSE 4322 – Software Project Management** pre-reqs: CSE 3310 (Fall & Spring)
- **CSE 4323 – Quantitative Computer Architecture** pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 4331 – Database Implementation and Theory** pre-reqs: CSE 3330 (Fall, Spring, & Summer)
- **CSE 4333 – Cloud Computing Fundamentals and Applications** pre-reqs: CSE 3320 and CSE 3330 (Fall only)
- **CSE 4334 – Data mining** pre-reqs: IE 3301 or MATH 3313 and co-req: CSE 3330 (Fall & Spring)
- **CSE 4345 – Computational Methods** pre-reqs: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330 (Fall & Spring)
- **CSE 4351 – Parallel Processing** pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 4360 – Autonomous Robot Design and Programming** pre-reqs: CSE 3318, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
- **CSE 4361 – Software Design Patterns** pre-reqs: CSE 3311 (Fall & Spring)
- **CSE 4373 – General Purpose GPU Programming** pre-reqs: CSE 3320 (Fall only)
- **CSE 4376 – Digital Communication Systems** pre-reqs: CSE 3313 (Fall only)
- **CSE 4378 – Intro to Unmanned Vehicles** pre-reqs: Department consent (Fall only)
- **CSE 4379 – Unmanned Vehicles Development** pre-reqs: B or better in CSE 4378 (Spring only)
- **CSE 4380 – Information Security** pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 4381 – Information Security 2** pre-reqs: CSE 3320 and co-req CSE 4344 (Fall & Spring)
- **CSE 4382 – Secure Programming** pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 3311 – Object-oriented Software Engineering** pre-reqs: CSE 1325, CSE 3318, and CSE 3330 (Fall & Spring)
- **CSE 3313 – Signal Processing** pre-reqs: CSE 3318 and CSE 3380 or MATH 3330 (Fall & Spring)
- **CSE 3340 – Intro to Human Computer Interaction** pre-reqs: CSE 3318 and CSE 3310 (Spring only)
- **ENGR 4302 – Engineering Entrepreneurship** pre-reqs: Admitted to an engineering prof. program (Fall only)
- **IE 3315 – Operations Research I** pre-reqs: co-req MATH 2326 (Fall & Spring)

Language, Philosophy & Culture Elective

- See the [catalog](#) for these options
- Complete one class from this list

Creative Arts Elective

- See the [catalog](#) for these options
- Complete one class from this list

History Electives

- See the [catalog](#) for these options
- Complete two classes from this list
### 2023-2024 Bachelor of Science in Computer Science
University of Texas at Arlington – Four Year Course Sequence

#### First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSE 1310 – Intro to Programming</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 1101 – Intro to Engineering</td>
<td>1</td>
</tr>
<tr>
<td>OR UNIV 1131 – Student Success</td>
<td>1</td>
</tr>
<tr>
<td>MATH 1426 – Calculus 1</td>
<td>4</td>
</tr>
<tr>
<td>Language, Philosophy, Culture Elective</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 1301 – Rhetoric &amp; Composition</td>
<td>3</td>
</tr>
<tr>
<td>U.S. History Elective 1</td>
<td>3</td>
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#### Second Year

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CSE 1325 – Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSE 2312 – Computer Organization</td>
<td>3</td>
</tr>
<tr>
<td>CSE 3318 – Algorithms and Data Structures</td>
<td>3</td>
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<tr>
<td>PHYS 1444 – General Technical Physics 2</td>
<td>4</td>
</tr>
<tr>
<td>U.S. History Elective 2</td>
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#### Third Year

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CSE 3302 – Programming Languages</td>
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<tr>
<td>CSE 3330 – Databases</td>
<td>3</td>
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<td>CSE 3315 – Theoretical CS</td>
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<tr>
<td>Math elective</td>
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<td>POLS 2311 – Govt of the United States</td>
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#### Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>CSE 3314 – Professional Practices</td>
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<tr>
<td>CSE 4316 – Senior Design I</td>
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<tr>
<td>CSE 4303 – Computer Graphics OR CSE 4305 – Compliers OR CSE 4360 – Robotics</td>
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<tr>
<td>Technical Elective 3</td>
<td>3</td>
</tr>
<tr>
<td>ECON 2305 – Principles of Macroeconomics OR IE 2308 – Economics for Engineers</td>
<td>3</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CSE 4308 – Artificial Intelligence</td>
<td>3</td>
</tr>
<tr>
<td>CSE 4344 – Computer Networks</td>
<td>3</td>
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<tr>
<td>Technical Elective 1</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective 2</td>
<td>3</td>
</tr>
<tr>
<td>POLS 2312 – State &amp; Local Government</td>
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</table>

#### Spring Semester – 15 Total Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CSE 1106 – Intro to CSE</td>
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<tr>
<td>CSE 1320 – Intermediate Programming</td>
<td>3</td>
</tr>
<tr>
<td>MATH 2425 – Calculus 2</td>
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<tr>
<td>PHYS 1443 – General Technical Physics 1</td>
<td>4</td>
</tr>
<tr>
<td>CSE 2315 – Discrete Structures</td>
<td>3</td>
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</tbody>
</table>

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<thead>
<tr>
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<tbody>
<tr>
<td>CSE 3380 – Linear Algebra for CSE</td>
<td>3</td>
</tr>
<tr>
<td>CSE 3310 – Intro to Software</td>
<td>3</td>
</tr>
<tr>
<td>CSE 3320 – Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>IE 3301 – Probability and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>COMS 2302 – Prof. &amp; Technical Comm</td>
<td>3</td>
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<tbody>
<tr>
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<td>3</td>
</tr>
<tr>
<td>Technical Elective 4</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective 5</td>
<td>3</td>
</tr>
<tr>
<td>Creative Arts Elective</td>
<td>3</td>
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#### Notes:
- Visit the [UTA Transfer Guide](https://www.utexas.edu) to view Texas Common Core Number course number equivalents.
- Visit the [UTA Catalog](https://www.utdallas.edu) to view general core curriculum requirements for elective courses.
- COE Requirement: Two high school years or six credit hours of the same foreign language.