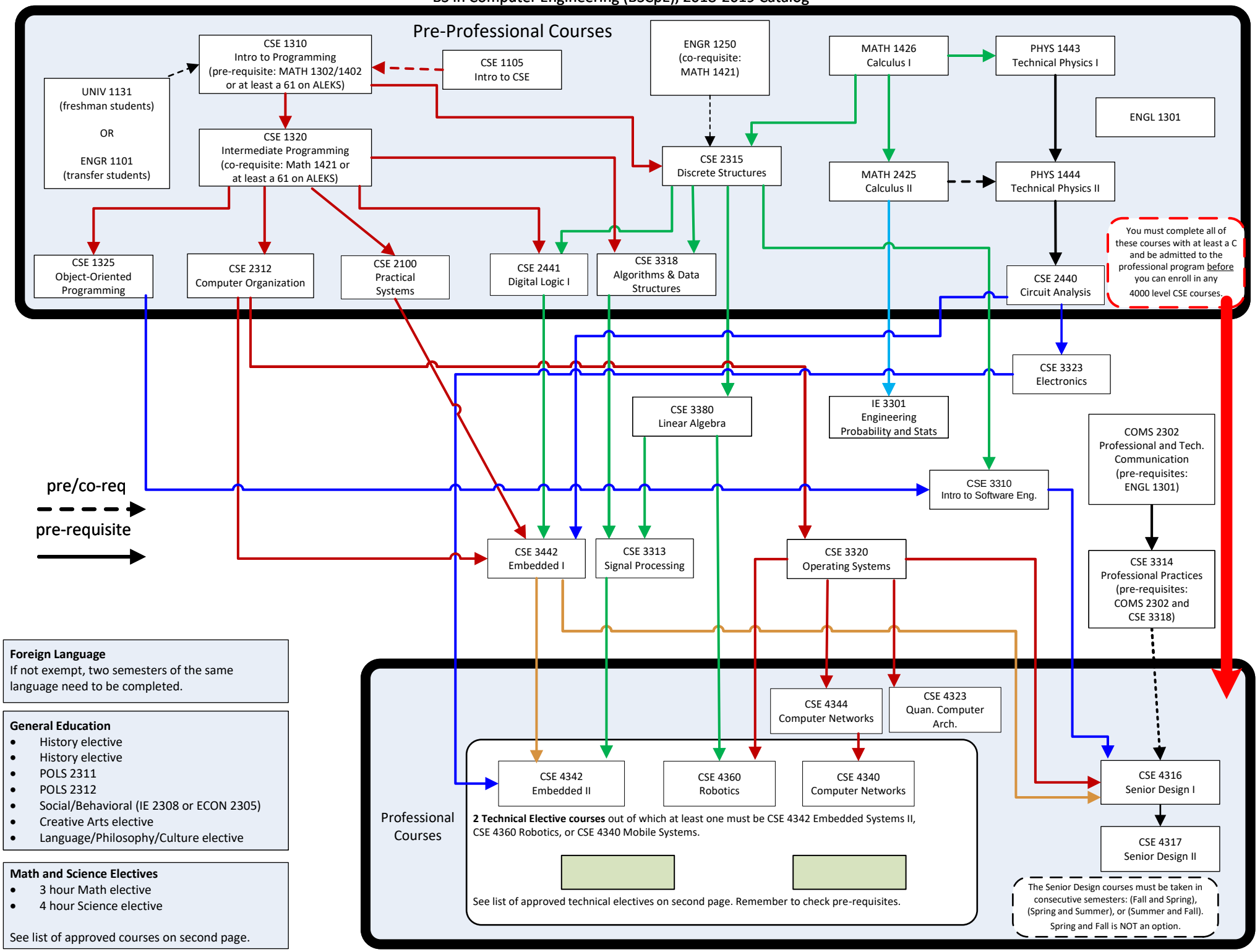
BS in Computer Engineering (BSCpE), 2018-2019 Catalog



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

Math and Science Electives
- 3 hour Math elective
- 4 hour Science elective

See list of approved courses on second page.

CPE 2018-2019 Classes

Each course taken can be used to satisfy only one degree plan requirement. For example, you can use CSE 4345 as your math elective, but it will not also 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-req: CSE 3318, IE 3301 or MATH 3313, and CSE 3380 or MATH 3330
- CSE 3315 - Theoretical Concepts in CSE (Fall & Spring) pre-req: CSE 2315

Science Electives

- BIOL 1441 – Biology I for Science Majors (Fall, Spring, & Summer) pre-req: None
- CHEM 1441 – General Chemistry (Fall, Spring, & Summer) pre-req: MATH 1302 or MATH 1402
- CHEM 1465 – Chemistry for Engineers (Fall, Spring, & Summer) co-req: MATH 1421
- PHYS 3313 & PHYS 3183 – Intro to Modern Physics (Fall & Spring) pre-req: MATH 2425 and PHYS 1444

Technical Electives

- CSE 3341 – Digital Logic Design II
  pre-reqs: CSE 3341 (Fall and Spring)
- CSE 4303 – Computer Graphics
  pre-reqs: CSE 3318 and CSE 3380 or MATH 3330 (Fall & Spring)
- CSE 4305 – Compliers
  pre-reqs: CSE 3302 and CSE 3315 (Fall & Spring)
- CSE 4308 – Artificial Intelligence
  pre-reqs: CSE 3318 and IE 3301 or MATH 3313 (Fall, Spring, & Summer)
- 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 4321 – Software Testing and Maintenance
  pre-reqs: CSE 3310 (Fall, Spring, & Summer)
- CSE 4322 – Software Project Management
  pre-reqs: CSE 3310 (Fall & Spring)
- CSE 4342 – Embedded Systems II
  pre-reqs: CSE 3442 and co-req CSE 3313 (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 4352 – IoT and Networking
  pre-reqs: CSE 3442 (Spring only)
- CSE 4354 – Real-time Operating Systems
  pre-reqs: CSE 3320 and CSE 3442 (Fall only)
- CSE 4355 – Electromechanical Systems and Sensors
  pre-reqs: CSE 3323 and CSE 3442 (Fall only)
- CSE 4356 – System on Chip (SoC) Design
  pre-reqs: CSE 3442 (Fall only)
- CSE 4358 – Microprocessor Systems
  pre-reqs: CSE 3442 (Summer only)
- CSE 4360 - Autonomous Robot Design and Programming
  pre-reqs: CSE 3318, CSE 3320, and CSE 3380 or MATH 3330 (Fall only)
- CSE 4372 – RISC Processor Design
  pre-reqs: CSE 3442 (Spring only)
- CSE 4373 – General Purpose GPU Programming
  pre-reqs: CSE 3320 (Fall only)
- CSE 4376 – Digital Communication Systems
  pre-reqs: CSE 3313 (Fall only)
- CSE 4377 – Wireless Communication Systems
  pre-reqs: CSE 3313 and CSE 3442 (Spring only)
- CSE 4378 – Intro to Unmanned Vehicles
  pre-reqs: Department consent (Fall 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 3315 – Theoretical Concepts in CSE
  pre-reqs: CSE 2315 (Fall & Spring)
- CSE 3330 – Database Systems and File Structures
  pre-reqs: CSE 1325 and CSE 3318 (Fall, Spring, & Summer)

Language, Philosophy & Culture Elective

- See the catalog for these options
- Complete one class from the list

Creative Arts Elective

- See the catalog for these options
- Complete one class from the list

History Electives

- See the catalog for these options
- Complete two classes from the list

2018-2019 Bachelor of Science in Computer Engineering
University of Texas at Arlington – Four Year Course Sequence

First Year

Fall Semester – 14 Total Hours

Course	Hours
CSE 1310 – Intro to Programming	3
ENGR 1101 – Intro to Engineering **OR** UNIV 1131 – Student Success	1
MATH 1426 – Calculus 1	4
ENGR 1250 – Problem Solving in Engineering	2
ENGL 1301 – Rhetoric & Composition	3
CSE 1105 – Intro to CSE	1

Spring Semester – 17 Total Hours

Course	Hours
U.S. History Elective 1	3
CSE 1320 – Intermediate Programming	3
MATH 2425 – Calculus 2	4
PHYS 1443 – General Technical Physics 1	4
CSE 2315 – Discrete Structures	3

Second Year

Fall Semester – 17 Total Hours

Course	Hours
CSE 1325 – Object-Oriented Programming	3
CSE 2312 – Computer Organization	3
CSE 3318 – Algorithms and Data Structures	3
PHYS 1444 – General Technical Physics 2	4
U.S. History Elective 2	3
CSE 2100 – Practical Systems	1

Spring Semester – 17 Total Hours

Course	Hours
CSE 3380 – Linear Algebra for CSE	3
CSE 2440 – Circuit Analysis	4
CSE 2441 – Digital Logic	4
POLS 2311 – Govt of the United States	3
COMS 2302 – Prof. & Technical Comm	3

Third Year

Fall Semester – 16 Total Hours

Course	Hours
CSE 3310 – Intro to Software Engineering	3
CSE 3320 – Operating Systems	3
CSE 3323 – Electronics	3
CSE 3442 – Embedded Systems	4
POLS 2312 – State & Local Government	3

Spring Semester – 15 Total Hours

Course	Hours
CSE 3313 – Signal Processing	3
IE 3301 – Probability and Statistics	3
CSE 4323 – Quantitative Computer Arch	3
Math elective	3
ECON 2305 – Principles of Macroeconomics **OR** IE 2308 – Economics for Engineers	3

Fourth Year

Fall Semester – 15 Total Hours

Course	Hours
CSE 3314 – Professional Practices	3
CSE 4316 – Senior Design 1	3
CSE 4342 – Embedded Systems **OR** CSE 4360 – Robotics **OR** CSE 4340 – Mobile Systems	3
Creative Arts Elective	3
CSE 4344 – Computer Networks	3

Spring Semester – 13 Total Hours

Course	Hours
CSE 4317 – Senior Design 2	3
Technical Elective	3
Science Elective	4
Language, Philosophy, Culture Elective	3

Notes:

Visit the UTA Transfer Guide to view Texas Common Core Number course number equivalents.
Visit the UTA Catalog to view general core curriculum requirements for elective courses.
COE Requirement: Two high school years or six credit hours of the same foreign language.