Pre-Professional Courses

UNIV 1131 (freshman students only)

OR

ENGR 1101 (transfer students)

CSE 1105 Intro to CSE

CSE 1310 Intro to Programming (pre-requisite: MATH 1302)

CSE 1320 Intermediate Programming (co-requisite: Math 1421)

CSE 2100 Practical Systems

CSE 2312 Computer Organization

CSE 2315 Discrete Structures

CSE 3302 Programming Languages

CSE 3303 Databases

CSE 3310 Intro to Software Eng

CSE 3314 Professional Practices (pre-requisites COMS 2302 and CSE 3318)

CSE 3315 Theoretical CS

CSE 3318 Algorithms & Data Structures

CSE 3319 Linear Algebra

CSE 3320 Operating Systems

CSE 4305 Compilers

CSE 4303 Computer Graphics

CSE 4344 Computer Networks

CSE 4308 Artificial Intelligence

CSE 4316 Senior Design I

CSE 4317 Senior Design II

ENGR 1250 (co-requisite: Math 1421 or above)

MATH 1426 Calculus I

PHYS 1443 Technical Physics I

MATH 1425 Calculus II

PHYS 1444 Technical Physics II

Only students who have completed all pre-professional courses satisfactorily and thus are admitted to the professional program may take 4000 level courses.

4000 Level Courses

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

See list of approved courses on second page.

Remember to check pre-requisites.

General Education
- Language/Philosophy/Culture elective
- HIST 1301
- HIST 1302
- POLS 2311
- POLS 2312
- Creative Arts elective
- Social/Behavioral (IE 2308 or ECON 2305)

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

See list of approved courses on second page.

Foreign Language
If required, two semesters of the same language.
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

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
- **Chem 1446** – Chemistry for Engineers (Fall, Spring, & Summer) co-req: MATH 1421
- **Phys 3311 & Phys 3183** – Intro to Modern Physics (Fall & Spring) pre-req: MATH 2425 and PHYS 1444

Technical Electives
- **CSE 4303** – Computer Graphics
  pre-reqs: CSE 3318 and CSE 3380 or MATH 3330 (Fall & Spring)
- **CSE 4305** – Compilers
  pre-reqs: CSE 3302 and CSE 3315 (Fall & Spring)
- **CSE 4309** – Fundamentals of Machine Learning
  pre-reqs: CSE 3318, 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, 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 4323** – Quantitative Computer Architecture
  pre-reqs: CSE 3320 (Fall & Spring)
- **CSE 4331** – Database Implementation and Theory
  pre-reqs: CSE 3330 (Fall, Spring, & Summer)
- **CSE 4334** – Data Mining
  pre-reqs: IE 3301 or MATH 3313 and co-req: CSE 3330 (Fall & Spring)
- **CSE 4340** – Fundamentals of Wireless Networks
  pre-reqs: CSE 3444 or CSE 4352 (Fluctuates)
- **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 4377** – Wireless Communication Systems
  pre-reqs: CSE 3313 (Spring 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-orientated Software Engineering
  pre-reqs: CSE 1325, CSE 3318, and CSE 3310 (Fall, Spring, & Summer)
- **CSE 3313** – Signal Processing
  pre-reqs: CSE 3318 and CSE 3380 or MATH 3330 (Fall & Spring)
- **IE 3315** – Operations Research I
  pre-reqs: co-req MATH 2326 (Fall & Spring)

Language, Philosophy & Culture Electives
- **Anthropology (ANTH) 2322**
- **Arabic (ARAB) 2310, 2314**
- **Architecture (ARCH) 2300**
- **Art & Art History (ART) 1317**
- **American Sign Language (ASL) 2314**
- **Chinese (CHIN) 2310, 2314**
- **Classics (CLAS) 1300**
- **Intro to LGBTQ+ Studies (DIVR) 2315**
- **English (ENGL) 1350, 2303, 2309, 2319, 2329**
- **French (FREN) 2310, 2314**
- **German (GERM) 2310, 2314**
- **Global (GLOBAL) 2301**
- **Greek (GREG) 2314**
- **History (HIST) 2377**
- **Korean (KORE) 2310, 2314**
- **Latin (LATN) 2314**
- **Linguistics (LING) 2371**
- **Mexican American Studies (MAS) 2300**
- **Philosophy (PHIL) 1304, 2300**
- **Portuguese (PORT) 2314**
- **Russian (RUSS) 2310, 2314**
- **Intro to Popular Culture (SOC/INTS) 1310**
- **Spanish (SPAN) 2310, 2314, 2315**
- **Women’s Studies (WOMS) 2310, 2315**

Creative Arts Electives
- **Architecture (ARCH) 1301**
- **Art & Art History (ART) 1301, 1309, 1310**
- **Dance (DANCE) 1300**
- **English (ENGL) 1375**
- **Photojournalism I (JOUR) 2340**
- **Music (MUSI) 1300, 1302, 1304, 2300, 2301**
- **Theater Arts (THEA) 1342, 1343**

History Electives
- **Hist 1301**
- **Hist 1302**
- **Hist 1331**
- **Hist 1332**