

# COMPUTER SCIENCE 2018-2019 B.S. Degree Requirements

## Games/ EAE emphasis

Advising: [ugrad-help@cs.utah.edu](mailto:ugrad-help@cs.utah.edu). Schedule appointments online at [cs.utah.edu](http://cs.utah.edu)

### PRE-MAJOR REQUIREMENTS:

C- or better required and a minimum 3.0 average GPA (overall and within pre-major courses) required to **apply** for full major status.

1. CS 1030, Foundations of CS \_\_\_\_\_ (3)
2. CS 1410, Object-Orient. Prog. \_\_\_\_\_ (4)
3. CS 2420, Algrthm/Data Struct. \_\_\_\_\_ (4)
4. Math 1210, Calculus I (QR) \_\_\_\_\_ (4)
5. Math 1220, Calculus II (QR) \_\_\_\_\_ (4)

### GENERAL EDU. REQUIREMENTS:

Honors options also accepted for WR2, CW, and AI requirements. See minimum grade requirements in handbook.

1. Wrtg 2010, Intermediate Writing (WR2) \_\_\_\_\_ (3)
2. FA 3600 or WRTG 4030 (CW) \_\_\_\_\_ (3)
3. American Institutions (AI) \_\_\_\_\_ (3)

Six **Intellectual Exploration (IE)** courses required. **TWO** must be upper division (3000-level or above), **ONE** must satisfy the Diversity requirement and **ONE** must satisfy the International requirement.

4. **ART 1020**, Basic Drawing (FF): \_\_\_\_\_ (3)
5. **DES 2615**, Intro to Design Thinking (FF): \_\_\_\_\_ (3)

6. Humanities (HF): \_\_\_\_\_ (3)
7. Humanities (HF): \_\_\_\_\_ (3)

8. Social/Behavioral Science (BF): \_\_\_\_\_ (3)
9. Social/Behavioral Science (BF): \_\_\_\_\_ (3)

- Upper Division (3000+ level IE) \_\_\_\_\_
- Upper Division (3000+ level IE) \_\_\_\_\_
- Diversity (DV) \_\_\_\_\_
- International (IR) \_\_\_\_\_

### MATH / SCIENCE ELECTIVES:

C- or better required in all math/ science courses.

**Elective must be 3+ credits**

**Accepted:** Math, science or engineering courses with Math 1220 as a pre- or co-requisite (See DARS). Biol 1210, Chem 1210 also accepted.

**NOT Accepted:** CS courses (except CS 3130). Math 2200, Math 3010. Math 2250 not accepted if Math 2270 and/ or Math 2280 are taken. Math 5010 and/or 3070 not accepted if CS 3130/ ECE 3530 is taken.

1. Physics 2210, Physics I \_\_\_\_\_ (4)
2. Math 2270, Linear Algebra \_\_\_\_\_ (4)
3. CS 3130, Eng Prob & Stats (QI) \_\_\_\_\_ (3)
4. \_\_\_\_\_ (4)

### EAE CORE REQUIREMENTS:

C- or better required in all EAE courses.

1. EAE 1050, Digital Content Creation \_\_\_\_\_ (3)
2. EAE 2100, Intro to Game Design \_\_\_\_\_ (3)
3. EAE 3010, Asset Pipeline \_\_\_\_\_ (3)

### The following requirements are restricted to FULL Majors:

C- or better required in all CS & EAE courses. CR/NC grades not allowed for any major requirement. 2.5 GPA (overall & within CS) required to graduate.

### MAJOR REQUIREMENTS:

1. CS 2100, Discrete Structures \_\_\_\_\_ (3)
2. CS 3500, Software Practice I \_\_\_\_\_ (4)
3. CS 3505, Software Practice II \_\_\_\_\_ (3)
4. CS 3810, Computer Organization (QI) \_\_\_\_\_ (4)
5. CS 4150, Algorithms (QI) \_\_\_\_\_ (3)
6. CS 4400, Computer Systems (QI) \_\_\_\_\_ (4)

### EAE REQUIREMENTS:

1. EAE 3660, Machinima \_\_\_\_\_ (3)
2. EAE 3710, Traditional Game Development \_\_\_\_\_ (3)
3. EAE 3720, Serious Game Development \_\_\_\_\_ (3)

### AREA FOCUS ELECTIVES

Choose **ONE** class from each of the **FOUR FOCUS AREAS** (4 classes total – 12 to 13 hours):

1. **AI/Analytics:** \_\_\_\_\_ (3)  
CS 4300 (AI), CS 5140 (Data Mining),  
CS 5340 (NLP), CS5350 (Machine Learning)
2. **Core/Fundamentals:** \_\_\_\_\_ (3-4)  
CS 5150 (Adv Alg), CS 5460 (OS), CS 5470 (Compilers)
3. **Human Centered Computing:** \_\_\_\_\_ (3)  
CS 3540 (HCI), CS 4530 (Mobile Apps),  
CS 4600 (Graphics), CS/EAE 4xxx (Game AI),  
CS 5650 (Visual Perception)
4. **Infrastructure:** \_\_\_\_\_ (3)  
CS 3470 (Scripting), CS 4440 (Security),  
CS 4480 (Networking), CS 5530 (Database)

Choose 2 more classes from **ANY** of the **FOCUS AREAS ABOVE** (6 to 7 hours):

5. Area Focus Elective \_\_\_\_\_ (3-4)
6. Area Focus Elective \_\_\_\_\_ (3-4)

### THEORY RESTRICTED ELECTIVE

Choose **ONE**:

- CS 3100, Models of Computation (QI) \_\_\_\_\_ (3)

or

- CS 3200, Scientific Computing \_\_\_\_\_ (3)

### CAPSTONE REQUIREMENT

1. EAE 4500, Senior Project I \_\_\_\_\_ (3)
2. EAE 4510, Senior Project II \_\_\_\_\_ (3)