**Bachelor of Science in**

**Computer Game Design & Development**

**This is a GATED PROGRAM** *Updated 5/7/2019*

**Catalog Year: 2018-2019** Total Degree Credit Hours: 120

**General Education Requirements** (See Degreeworks for Prerequisites)

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| **A-1** | **ENGL 1101** Composition I | 3 |  |
| **ENGL 1102** Composition II | 3 |  |
| **A-2** | **MATH 1113/MATH 1112** Precalculus / Trigonometry | 3 |  |

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| **Area A: Essential Skills (10 credit hours)**  All Area A courses must be completed within the first 30 credit hours with a grade of C or higher. |

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| **B-1** | **ECON 1000** Contemporary Economic Issues | 2 |  |
| **B-2** | **COM 1100** Human Communication | 3 |  |

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| **Area B: Institutional Options (5 credit hours)**  COM 1100 is essential for Software Engineering majors. |

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| **C-1** | **ENGL 2110, 2111, 2112, 2120, 2121, 2122, 2130, 2131, 2132,** *or* **2300** | 3 |  |
| **C-2** | **ART 1107, MUSI 1107, DANC 1107,** *or* **TPS 1107** | 3 |  |

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| **Area C: Humanities, Fine Arts, and Ethics (6 cr hrs)**  Choose one course from each area. |

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| **D-1** | **MATH 1190** Calculus I | 4 |  |
| **D-2** | **Group 1: BIOL 1107/L, CHEM 1211/L,**  **PHYS 1111/L,** *or* **PHYS 2211/L**  **Group 2: BIOL 1108/L, CHEM 1212/L,**  **PHYS 1112/L,** *or* **PHYS 2212/L** | 8 |  |

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| **Area D: Science, Math, and Technology (12 cr hrs)**  CGDD majors must complete two 4-credit hour science courses. “L” denotes the corresponding Lab course. Physics (Trigonometry-based) are the recommended science courses. |

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| **E-1** | **POLS 1101** American Government | 3 |  |
| **E-2** | **HIST 2111** *or* **2112** US History | 3 |  |
| **E-3** | **HIST 1100, 1111,** *or* **1112** World History | 3 |  |
| **E-4** | **CRJU 1101, GEOG 1101, PSYC 1101, SOCI 1101, STS 1101, ANTH 1102,** *or* **ECON 2100** | 3 |  |

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| **Area E: Social Sciences (12 credit hours)**  Choose one course from each area for E-2, E-3, & E-4. |

**Area F Lower Division Major Requirements**

Prerequisites

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| **CSE 1321/L** Programming & Problem Solving I | Co-req w/ MATH 1112, 1113, 1190 or CSE 1300 | 4 |  |
| **CSE 1322/L** Programming & Problem Solving II | Minimum grade of ‘B’ in CSE 1321/L | 4 |  |
| **MATH 2345** Discrete Mathematics *or*  **CSE 2300** Discrete Structures for Computing | MATH 1112/1113/1190 | 3 |  |
| MATH 1112/1113/1190 & CSE 1321/L |
| **MATH 2332** Probability and Data Analysis | MATH 1190 | 3 |  |
| **CGDD 2002** Fundamentals of Game Design | CSE 1322/L | 4 |  |
| **Carryover credit hour from Area D Group 2 Science Lab** | See Area D Science requirement | *1* |  |

CSE 1321/L and CSE 1322/L must have a minimum grade of ‘B.’

Upon completing CSE 1322/L with a minimum grade of ‘B,’ students should request to have their major changed to the fully admitted Computer Game Design & Development major.

**Free Electives (7 credit hours)**

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**CSE 1300** is highly recommended for students who are new to programming and have available free elective credits to complete.

**Upper Division Major Courses**

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| **CSE 3801** Professional Practices and Ethics | CSE 1322/L | 2 |  |
| **CS 3305/L** Data Structures | CSE 1322/L & (MATH 2345/CSE 2300) | 4 |  |
| **CS 4242** Artificial Intelligence | CS 3305/L | 3 |  |
| **CS 4306** Algorithm Analysis | CS 3305/L | 3 |  |
| **CS 4722** Computer Graphics and Multimedia | CS 3305/L | 3 |  |
| **SWE 3313** Intro to Software Engineering | CSE 1322/L | 3 |  |
| **SWE 3643** Software Testing and Quality Assurance | SWE 3313 | 3 |  |
| **SWE 4324** User-Centered Design | SWE 3313 | 4 |  |
| **CGDD 3103** Application Extension and Scripting | CGDD 2002 & CSE 1322/L | 3 |  |
| **CGDD 4003** Digital Media and Interaction | CGDD 3103 | 3 |  |
| **CGDD 4203** Mobile and Casual Game Development | CGDD 4003 | 3 |  |
| **CGDD 4303** Educational and Serious Game Design | CGDD 4003 | 3 |  |
| **CGDD 4803** Studio | CGDD 4003 | 3 |  |
| **CGDD 4814** Capstone | CGDD 4803 | 4 |  |

All major courses must have a minimum grade of ‘C,’ except for CSE 1321/L and CSE 1322/L, which must have a minimum grade of ‘B.’

**Upper-Level Concentration (Pick 1) – 9 credit hours**

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| **Media-Production**  Prerequisites | | | |  | **Educational-Serious**  Prerequisites | | | |
| **MATH 3260** Linear Algebra | MATH 1190 | 3 |  | **CGDD 4313** Designing Online Learning Content and Environments | Department Permission | 3 |  |
| **CGDD 4113** 3D Modeling and Animation | CS 3305/L | 3 |  |
| **CGDD 4603** Production Pipeline and Rendering | CS 4722 | 3 |  | **TCOM** Two Approved Courses | Varies | 3 |  |
| **TCOM** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Varies | 3 |  |
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| **Simulations-Informatics (pick 3)** | | | | **Computer Science (courses not duplicative with major req’s)** | | | |
| **CSE 3153** Database Systems | CSE 1322/L | 3 |  | **CS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | Varies | 3 |  |
| **CS 4504** Distributed Computing | CS 3502 | 3 |  | **CS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | Varies | 3 |  |
| **CGDD 4703** Data Modeling and Simulation | MATH 2332 | 3 |  | **CS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | Varies | 3 |  |
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| **CS 4999** Special Topics in Modeling and Simulation | Department Permission | 3 |  | **Distributed-Mobile** | | | |
| **SWE 3683** Embedded Systems Analysis & Design | CS 3305/L | 3 |  |
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| **Content Creation \*** | | | | **CS 4504** Distributed Computing | CS 3502 | 3 |  |
| **CGDD 4113** 3D Modeling and Animation | CS 3305/L | 3 |  | **CS 4622** Computer Networks | CS 3503/L | 3 |  |
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| *Choose 2 of the following four courses* | | | | **Planning-Management (pick 3)** | | | |
| **MEBU 4490/01/04/05/06** Creative Adaptability | Permission of MEBU Director | 3 |  | **MGT 4122** Venture Management | MGT 3100 & Permission from Coles | 3 |  |
| **ENTR 4001** Entrepreneurial Mind | Permission from Coles | 3 |  |
| **MEBU 3398** London Study Abroad/Internship | Permission of MEBU Director | 1-3 |  |
| **SWE 3623** Software Systems Requirements | SWE 3313 & MATH 2345/CSE 2300 | 3 |  |
| **MEBU 3370** Fundamentals of Audio Production and Technology | MEBU 2270 | 3 |  |
| **SWE 4663** Software Project Management | SWE 3313 & MATH 2232 | 3 |  |
| **MEBU 4470** Advanced Audio Production and Technology | MEBU 3370 | 3 |  |  |  |  |  |

\* Contact CCSE Academic Advising if you are in, or considering, this concentration to discuss course options and enrollment permission procedure.