

COMPUTER SCIENCE - GAME DEVELOPMENT EMPHASIS (BA/BS)

Code	Title	Units
Major Requirements ¹		
Computer Science Core:		
COMPSCI 172	INTRODUCTION TO JAVA	3
or COMPSCI 174	INTRODUCTION TO C++	
COMPSCI 221	INTERMEDIATE PROGRAMMING IN C# ²	3
or COMPSCI 220	INTERMEDIATE JAVA	
or COMPSCI 222	INTERMEDIATE C++	
COMPSCI 223	DATA STRUCTURES	3
COMPSCI 271	COMPUTER ORGANIZATION AND ASSEMBLY PROGRAMMING	3
COMPSCI 332	INTRODUCTION TO ARTIFICIAL INTELLIGENCE	3
COMPSCI 433	THEORY OF ALGORITHMS	3
COMPSCI 476	SOFTWARE ENGINEERING	3
Game Development Core:		
MAGD 150	INTRODUCTION TO MEDIA ARTS AND GAME DEVELOPMENT	3
MAGD 210	VISUAL DESIGN FOR DIGITAL MEDIA	3
or MAGD 220	DRAWING FOR DIGITAL MEDIA	
MAGD 272	GAME DEVELOPMENT	3
MAGD 372	INTERMEDIATE GAME DEVELOPMENT	3
COMM 351	GAME STUDIES AND DESIGN	3
Select 9 units of advanced Computer Science or related electives:		9
Any undergraduate COMPSCI courses numbered 300 or higher		
Any graduate COMPSCI courses numbered 700 or higher ³		
MATH 355	MATRICES AND LINEAR ALGEBRA	
MATH 450	GRAPH THEORY	
MATH 471	NUMERICAL ANALYSIS	
STAT 342	APPLIED STATISTICS	
Select 9 units of Media Arts and Game Development electives:		9
ARTSTDIO 376		
ARTSTDIO 377	HD/DV DESIGN FUNDAMENTALS	
ARTSTDIO 379	INTERACTIVE MULTIMEDIA DESIGN	
ARTSTDIO 380	3D MODELING-IMAGING-ANIMATION I	
ARTSTDIO 388	MOTION GRAPHIC ANIMATION STUDIO I	
ARTSTDIO 476		
ARTSTDIO 477	ADVANCED HD DV MOTION CAPTURE STUDIO	
ARTSTDIO 480	3D MODELING-ANIMATION II	
ARTSTDIO 488	MOTION GRAPHIC ANIMATION STUDIO II	
ARTSTDIO 496	SPECIAL STUDIES	
ARTSTDIO 498	INDEPENDENT STUDIES	
COMM 238	VIDEO PRODUCTION I: FUNDAMENTALS OF VIDEO	
COMM 239	AUDIO PRODUCTION I: FUNDAMENTALS OF AUDIO	

COMM 258	VIDEO PRODUCTION II: MEDIA STORYTELLING	
COMM 259	AUDIO PRODUCTION II: ADVANCED AUDIO TECHNIQUES	
COMM 285	SOCIAL MEDIA OPTIMIZATION & THE NEW WEB	
COMM 294	WEB VIDEO PRACTICUM	
COMM 338	VIDEO PRODUCTION III: CORPORATE AND COMMERCIAL MEDIA	
COMM 339	AUDIO PRODUCTION III: RECORDING, MIXING AND MASTERING	
COMM 346	SOUND AND IMAGE: AN EXPLORATION OF SOUND FOR/WITH VISUAL MEDIA	
or MUSC 346	SOUND AND IMAGE: AN EXPLORATION OF SOUND FOR/WITH VISUAL MEDIA	
COMM 440	NEW COMMUNICATION TECHNOLOGIES	
COMM 493M	MAGD INTERNSHIP	
COMM 496	SPECIAL STUDIES	
COMM 498	INDEPENDENT STUDY	
LIBMEDIA 175	VIDEO GAMES AND LEARNING	
MAGD 210	VISUAL DESIGN FOR DIGITAL MEDIA	
or MAGD 220	DRAWING FOR DIGITAL MEDIA	
MAGD 231	GAME JAM PRACTICUM	
MAGD 269	NEW MEDIA ENSEMBLE	
MAGD 270	WEB DEVELOPMENT	
MAGD 271	INTERACTIVE COMMUNICATION	
MAGD 488	MEDIA ARTS AND GAME DEVELOPMENT TEAM PROJECTS ⁴	
MAGD 489	SOUND DESIGN FOR ADVANCED MAGD TEAM PROJECTS	
MUSC 452	ELECTRONIC MUSIC AND SOUND DESIGN	
Capstones:		
MAGD 487	MEDIA ARTS CAPSTONE - PORTFOLIO DEVELOPMENT	3
MAGD 488	MEDIA ARTS AND GAME DEVELOPMENT TEAM PROJECTS	3
Total Units		60

¹ An approved minor is not required for this major.

² COMPSCI 221 is preferred for this emphasis.

³ Graduate courses (500+) may have additional requirements prior to enrollment by undergraduate students. See the Seniors Taking Graduate Courses Policy for further information. Undergraduate students taking graduate courses are not generally permitted to enroll in COMPSCI 789, COMPSCI 793, COMPSCI 798, or COMPSCI 799.

⁴ MAGD 488 is repeatable. Students pursuing this emphasis are required to complete MAGD 488 at least once. A second or third completion of MAGD 488 will count toward the 9 required units of MAGD electives in the major.

Four-Year Plan: This four-year plan outlines a suggested curricular path for new students aiming to earn a degree within in four years. Please note that this plan represents just one of many paths to degree completion.

First Year		
Fall	Units Spring	Units
ENGLISH 101 ¹	3 ENGLISH 102	3
MATH 142	4 MATH 151	3
COMPSCI 165	3 COMPSCI 172 or 174	3
MAGD 150	3 MAGD 210 or 220	3
INTRAUNV 104	1 CORE 130	3
PEGNRL 192	1	
	15	15
Second Year		
Fall	Units Spring	Units
COMPSCI 221, 220, or 222	3 COMPSCI 223	3
MATH 253	5 COMPSCI 271	3
PHYSICS 130, 140, or 180	5 MAGD 272	3
CORE 140 or 120	3 CORE 110	3
	COMM 110	3
	16	15
Third Year		
Fall	Units Spring	Units
MAGD 372	3 COMPSCI 332	3
COMPSCI 215 or MATH 280	3 COMM 351	3
Game Development Writing Requirement (English or PWP)	3 Advanced COMPSCI or related elective	3
U.S. Racial/Ethnic Diversity Course (DV)	3 MAGD elective	3
Elective (HA-A, HA-G, or HA-H)	3 Lab Science (NSWL), but not Physics	4
	15	16
Fourth Year		
Fall	Units Spring	Units
COMPSCI 433	3 COMPSCI 476	3
MAGD 487	3 MAGD 488	3
Advanced COMPSCI or related elective	3 Advanced COMPSCI or related elective	3
MAGD elective	3 MAGD elective	3
CORE 390	3 Elective (SBS-E or SBS-S)	3
	15	15
Total Units: 122		

¹ The math and English courses you will take during your first year will depend on UW System placement exam scores or ACT/SAT subscores. This four-year plan reflects the math and English courses most common for students in this major. All students are encouraged to complete placement testing (<https://www.uww.edu/testing/placement-testing/>) prior to attending Warhawks SOAR (Student Orientation, Advising, and Registration).

First Year: The Thinking In Code Learning Community (<https://www.uww.edu/fye/students/learning-communities/>) is a great option for first-year students with a major in computer science or considering a major in computer science.

Joining a university-sponsored club and actively participating is strongly encouraged. Involvement in a club or activity will help you develop interpersonal skills, give you the opportunity to learn and practice leadership skills, and adds to your resume.

*Student Organizations

- ISACA - students collaborate and develop skills in areas like IT auditing, cybersecurity, and data privacy
- GAMED - for students interested in designing their own games
- ACM - people with mutual interest and love for Computer Science

- Robotics - collaborate with other students to build and compete in robotics

Watch for "COMPSCI Update" weekly emails for more information about ways to get involved.

Second Year: Undergraduate research is recommended for students who have an interest in attending graduate school in the future. Completing a directed research project with a faculty mentor has many benefits: it develops a student's critical thinking and writing abilities, signals to graduate school programs that a student is prepared for independent research of their own, and it can provide a student with financial support since many undergraduate research opportunities are paid.

Third Year: An internship is an experiential learning opportunity that provides students with hands-on experience in a potential career field, supervision and coaching from prospective employers, and the ability to learn professional norms and behaviors. In addition, completing an internship allows students to differentiate themselves in a competitive job market. Students should begin planning for an internship by the beginning of the junior year and can complete the internship in the junior or senior year. The internship course, COMPSCI 493, counts as an upper-level technical elective.

Also, Career Information in Letters and Sciences, LSINDP 399, is a 1-credit course that focuses on career and graduate school opportunities; identifying skills, strengths, and work values; creating effective job search materials; developing a networking strategy; and planning to a successful post-graduation transition.

Fourth Year: All students **must earn 120 credits** to earn a bachelor's degree and many students have the opportunity to choose additional courses in the fourth year to expand skills, explore interests, or try something new.

Planning for Graduation: Students should apply for graduation (<http://www.uww.edu/registrar/graduation/>) one full semester prior to their intended graduation date. Information about commencement and the application for graduation are on the Registrar's Office website.

Computer Science department hardware recommendations:

- Operating System. For Computer Science or Cybersecurity students a Windows-based laptop if possible, since most of the programs work well with this operating system.
- CPU. Intel i7/ AMD 7 or above is recommended for CPU
- Memory. 16GB or above for RAM
- Hard Drive. SSD (Solid State Drive) with >= 512GB for hard disk.