Game Programming

Associate in Applied Science Degree

Program **GAME.PROG.AAS**
CIP 500411

The A.A.S. degree in Game Programming prepares students for careers in the video game industry. With advances in online social networks as well as console, stereoscopic, and smart phone technology fueling rapid expansion, the video game industry boasts revenues of around $24 billion in the United States alone, according to the newly formed Congressional Caucus for Competitiveness in Entertainment Technology (E-Tech Caucus).

The Game Programming program prepares students for a number of career options, including game designer, software engineer, artificial intelligence programmer, graphics engineer, physics programmer, and user interface scripter.

Typical employers include game design studios, entertainment software companies, and online entertainment and education companies. The New York City / northern New Jersey metro region is one of the ten largest in the country for video game development, accounting for more than 70 game-affiliated companies.

Students explore and analyze professional game engines, scripting languages, graphics, networks, physics, and other components of game development. Most coursework takes place in a studio using regularly updated professional-quality hardware and software on PC computer platforms. Moreover, in their last year of study, Game Programming students collaborate with students from the Game Design program to produce a full, playable video game.

PROGRAM OUTCOMES

- Understand the historical development of games;
- Describe and reference industry trends and technologies in video gaming;
- Apply the design process to research and develop professional video game concepts;
- Create diagrams and prototypes to specify game design concepts;
- Create a professional sales pitch for a game concept;
- Program game engine components such as resource management, entity-based systems, physics simulation, and user interfaces;
- Create a custom 2-D game engine;
- Develop skills to be a self-learner and problem solver;
- Work effectively on interdisciplinary teams producing functioning games and levels.

The Game Programming program may be pursued full-time or part-time. Admission requires a high school diploma or its equivalent and competency in English and mathematics as demonstrated by placement testing.

Curriculum

Code	Course (lecture/lab hours)	Credits
FIRST SEMESTER		
COS 101	Introduction to Computer Science (3/2)	4
CSW 100	College Success and Personal Wellness (2/0)†	2
DMA 105	Introduction to Computer Art (1/4)	3
ENG 101	English Composition I (3/0)	3
GAM 120	Game Design Theory and Culture (1/4)	3
SECOND SEMESTER		
COS 102	Computer Science I – Algorithms and Programming (3/2)	4
ENG 102	English Composition II (3/0)	3
GAM 145	Game Programming I (2/2)	3
IST 108	Introduction to Programming with Mobile Application Development (3/2)	4
MAT 146	Pre-Calculus (4/0)[1]	4
THIRD SEMESTER		
COS 210	Computer Science II – Data Structures (3/2)	4
GAM 240	Game Design II (1/4)	3
GAM 245	Game Programming II (2/2)	3
IST 218	iOS Application Development (3/2)	4
— —	Technical elective[2]	3-4
FOURTH SEMESTER		
GAM 260	Game Development (1/4)	3
— —	Technical elective[2]	3-4
— —	General Education elective[3]	3
— —	General Education elective[3]	3
		62-64

[1] Or higher-level mathematics course.

[2] Select from CMN 153; COS 204, 231; DMA 120, 135, 225; MAT 151, 208.

[3] Select course from the following general education categories: Social Science, Humanities, Historical Perspective, Diversity and Global Perspective.

†Some exemptions apply. Consult academic advisor for details.

NOTE: Students must earn a minimum grade of C in all COS, DMA, GAM, and IST courses.

NOTE: All program listings are subject to periodic updates. Please consult your program advisor, academic division, or **www.mccc.edu/programs_degree**