



2023-2024 Academic Year

Game Programming

Associate in Applied Science Degree (A.A.S.)

Liberal Arts Division

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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.

SEE ALSO:

[Game Design](#) degree program

DEGREE CURRICULUM

2023-2024 Academic Year

GAME.PROG.AAS

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The course sequence below represents a recommended example of how this degree program can be completed in two years, presuming a Fall Term start and satisfaction of all Developmental Studies (foundation courses) requirements and prerequisites. Actual approaches toward completion depend on each student's anticipated transfer institution, career objectives, or other individual circumstances.

Students are encouraged to meet regularly with an academic advisor or Success Coach to consider options, establish plans, and monitor progress.

Code	Course (lecture/lab hours)	Credits	To Do This Semester
FIRST SEMESTER			
COS 101	Introduction to Computer Science (3/2)	4	✓ Meet with your faculty advisor to complete an academic plan. Make sure you are aware of any course prerequisites you may need to take, and how long it will take to complete your degree. ✓ Use your online tools: Check your MercerMail daily, utilize features of Office 365, and get to know Student Planning . ✓ Take advantage of Learning Centers or Online
ENG 101	English Composition I (3/0)	3	
GAM 120	Game Design Theory and Culture (1/4)	3	
— —	Social Science or Humanities general education elective	3	

[Tutoring](#) to support your studies and assignments.

SECOND SEMESTER

COS 102	Computer Science I – Algorithms and Programming (3/2)	4	<p>✓ Transitioning to college can be challenging. Meet with your Success Coach for guidance and support.</p> <p>✓ Apply for financial aid by May 1.</p> <p>✓ Contact professors with questions and use their office hours to develop a connection. Talk with them to get the inside scoop on how your profession works.</p> <p>✓ Be sure to visit the Career Services office to explore jobs, internships, and career information and get help with your resume and other career tools.</p> <p>✓ Apply for Continuing Student scholarships at www.mccc.edu/m-scholarships.</p>
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)		
	<i>OR</i>	4	
MAT 151	Calculus I for the Mathematical and Physical Sciences (4/0)		

THIRD SEMESTER

COS 210	Computer Science II – Data Structures (3/2)	4	<p>✓ Keep in contact with each professor and your faculty advisor. Make sure you are on track to graduate on time.</p> <p>✓ Work with Career Services to formulate plans</p>
GAM 140	Game Design I (1/4)		
	<i>OR</i>	3	
GAM 240	Game Design II (1/4)		
GAM 245	Game Programming II (1/4)	3	

IST 218	iOS Application Development (3/2)	4	for after you've earned this degree.
— —	Technical elective	3	<ul style="list-style-type: none"> ✓ Develop team and leadership skills by getting involved in activities and clubs. ✓ Apply for Continuing Student scholarships at www.mccc.edu/m-scholarships. ✓ Manage your stress! Take advantage of the MCCC pool, Fitness Center, free yoga and Zumba. Reach out for counseling or other support if you need it. Your Success Coach can connect you with resources.
	<ul style="list-style-type: none"> • Select from CMN 153; DMA 120, 135, 145, 225. 		

FOURTH SEMESTER

CMN 146	Social Media Technologies (2/2)	3	✓ Get ready to start your career! Begin the job application process.
GAM 260	Game Development (1/4)	3	
— —	Technical elective	3	<ul style="list-style-type: none"> ✓ Discuss your career plans with your faculty advisor. S/he can help you transition successfully.
	<ul style="list-style-type: none"> • Select from CMN 153; DMA 120, 135, 145, 225. 		
— —	General Education elective	3	
	<ul style="list-style-type: none"> • Select course from the following general education categories: Social Science, Humanities, Historical Perspective. 		

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