

# INTERACTIVE COMPUTING, ASSOCIATE IN APPLIED SCIENCE (IC)

Effective: Fall 2022

Do the following terms describe you: curious, creative, or problem-solver? Exploring the world of Information Technology (IT) may be right for you! Demand for skilled IT workers is ever-growing and unmatched in other industries.

The Interactive Computing Associate of Applied Science degree program is a flexible degree that gives students the freedom to tailor individual curricula to match their professional and personal goals. The program combines theory, media production, programming, web, and interactive design to prepare students for careers in digital media design and development. Foundations of digital technology, as well as the core concepts of current technological innovations, is explored. Students engage in hands-on, project-based instruction that enables them to create multimedia projects and productions, think innovatively and creatively, and explore emerging and immersive technologies. Students also produce a digital portfolio or participate in an internship to prepare for an IT career.

The Interactive Computing program has three pathways: front-end developer, back-end developer, and immersive media or game developer. Electives within the program are selected based on the pathway.

## FRONT-END DEVELOPER

A front-end developer is one who builds user interfaces for websites and applications using HTML, CSS, and JavaScript as well as an array of other front-end applications/tools such as browser development tools, image editors, and wireframe tools. Current job titles include UI/UX Developer, Junior Developer, Motion Graphics Designer, Web Content Editor, Interaction Designer, Web Developer, and Junior Angular.JS Developer.

## BACK-END DEVELOPER

A back-end developer is one who enables the front-end experience. This type of developer builds and maintains the technology that makes the front end possible. Knowledge of how servers, applications, and databases communicate with one another as well as server-side languages like PHP and Python and tools like MySQL and Oracle is required. Current job titles include Web Developer, Backend Architect, Full-stack Developer, and Full Stack Java Developer.

## IMMERSIVE MEDIA or GAME DEVELOPER

An immersive media or game developer designs and develops virtual reality, augmented reality, mixed reality, real-time 3D, simulations, games, and immersive experiences and video content. Developers have demonstrated experience in platforms and pipelines used in the design, development, and distribution of games and immersive experiences including Unity, HTML, Adobe Creative Suite, C#, and Python. Current job titles include Immersive Media Developer, VR Developer, Game Designer, Game Programmer, Game Artist, Game Animator, Animator, and Game Tester.

## Program Outcomes

- Apply a design process to develop multimedia programs, websites, games, or immersive environments.
- Determine the appropriate hardware, software, and network protocols and connectivity that support interactive computing design and development.
- Use industry standard tools and technologies to create media assets.
- Demonstrate the use of scripting, programming, and markup languages.
- Design and create intuitive, usable interfaces.
- Examine requisite skills and careers related to interactive computing.
- Prepare for an IT career through the participation in an internship and/or development of a digital portfolio.

## Full-Time Academic Plan

First Semester		Hours
CS 100	Introduction to Information Technology	3
CS 101 or CS 102	Introduction to Computer Science or Introduction to Python	3
ENG 100	English Composition I	3
Any Oral Communications (OC) designated course		3
Any Quantitative Reasoning (QR) designated MAT course <sup>1</sup>		3-4
<b>Hours</b>		<b>15-16</b>
Second Semester		Hours
CS 104	Introduction to Java Programming	3
ENG 112	English Composition II: Writing About Literature	3
IMM 110	Multimedia Graphics & Design	3
IMM 120	Web Page Design and Development	3
Mathematics Elective <sup>2</sup>		3-4
<b>Hours</b>		<b>15-16</b>
Third Semester		Hours
CS 200	UX Design	3
NET 110	Network Communications	3
Any Scientific Inquiry (SI) designated course		4
<b>CS Electives by Pathway</b>		<b>6</b>
For front-end developer:		
CS 130 & IMM 201	Introduction to Unity 3D and Audio and Video for Multimedia	
For back-end developer:		
Select Two:		
CS 204 or CS 214 or CS 240 or CS 113	Intermediate Java Programming or jQuery/JavaScript or Responsive Web Design or Database Management Systems	
For immersive media or game design developer:		
IMM 201 & Select One:	Audio and Video for Multimedia	
CS 117 or CS 130	Fundamentals of Game Design Theory and Practice or Introduction to Unity 3D	
<b>Hours</b>		<b>16</b>
Fourth Semester		Hours
CS 250	Digital Portfolio Development	3
Diversity and Social Justice AND Global Understanding designated course		3
<b>CS Electives by Pathway</b>		<b>9</b>
For front-end developer:		
CS 214 & CS 240	jQuery/JavaScript and Responsive Web Design	
& Select one IT/CS Elective		
For back-end developer:		
Select Three:		

CS 204 or CS 214 or CS 240 or CS 142 or CS 143	Intermediate Java Programming or jQuery/JavaScript or Responsive Web Design or Introduction to Cloud Computing Concepts and Administration using Microsoft Azure or Introduction to Cloud Computing Concepts and Administration using Amazon Web Services
For immersive media or game design developer:	
CS 118 or CS 131	Game Creation Development or Virtual Asset Production
CS 132 or CS 119	C# Programming for Interactivity or Introduction to Computer Game Programming
CS 106 or CS 133	Art and Animation or Augmented, Mixed and Virtual Reality: XR Fundamentals
<b>Hours</b>	<b>15</b>
<b>Total Hours</b>	<b>61-63</b>

## Notes

**Oral Communications (OC) designated courses**

**Quantitative Reasoning (QR) designated courses**  
([https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#QR\\_Course\\_List](https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#QR_Course_List))<sup>1</sup>

**Scientific Inquiry (SI) designated courses**

**Diversity and Social Justice AND Global Understanding designated courses**

<sup>1</sup>not MAT 125

<sup>2</sup>MAT 120 or higher (not MAT 125 or MAT 126)

## Part-Time Academic Plan

Course	Title	Hours
<b>First Semester</b>		
CS 100	Introduction to Information Technology	3
CS 101 or CS 102	Introduction to Computer Science or Introduction to Python	3
ENG 100	English Composition I	3
<b>Hours</b>		<b>9</b>
<b>Second Semester</b>		
Any Oral Communications (OC) designated course		3
Any Quantitative Reasoning (QR) designated MAT course <sup>1</sup>		3-4
CS 104	Introduction to Java Programming	3
<b>Hours</b>		<b>9-10</b>
<b>Third Semester</b>		
ENG 112	English Composition II: Writing About Literature	3
IMM 110	Multimedia Graphics & Design	3
IMM 120	Web Page Design and Development	3
<b>Hours</b>		<b>9</b>
<b>Fourth Semester</b>		
Mathematics Elective <sup>2</sup>		3-4
CS 200	UX Design	3
NET 110	Network Communications	3
<b>Hours</b>		<b>9-10</b>
<b>Fifth Semester</b>		
Any Scientific Inquiry (SI) designated course		4
<b>CS Electives by Pathway</b> <b>6</b>		
For front-end developer:		
CS 130 & IMM 201	Introduction to Unity 3D and Audio and Video for Multimedia	
For back-end developer:		

Select Two:	
CS 204 or CS 113 or CS 214 or CS 240	Intermediate Java Programming or Database Management Systems or jQuery/JavaScript or Responsive Web Design
For immersive media or game design developer:	
IMM 201	Audio and Video for Multimedia
& Select One:	
CS 117 or CS 130	Fundamentals of Game Design Theory and Practice or Introduction to Unity 3D
<b>Hours</b>	<b>10</b>

<b>Sixth Semester</b>	
CS 250	Digital Portfolio Development
Diversity and Social Justice AND Global Understanding designated course	
<b>Hours</b>	<b>6</b>

<b>Seventh Semester</b>	
<b>CS Electives by Pathway</b> <b>9</b>	

For front-end developer:	
CS 214 & CS 240	jQuery/JavaScript and Responsive Web Design

For back-end developer:	
Select Three:	

CS 204 or CS 214 or CS 240 or CS 142 or CS 143	Intermediate Java Programming or jQuery/JavaScript or Responsive Web Design or Introduction to Cloud Computing Concepts and Administration using Microsoft Azure or Introduction to Cloud Computing Concepts and Administration using Amazon Web Services
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For immersive media or game design developer:	
CS 118	Game Creation Development
CS 131	Virtual Asset Production
CS 132 or CS 119	C# Programming for Interactivity or Introduction to Computer Game Programming
CS 106 or CS 133	Art and Animation or Augmented, Mixed and Virtual Reality: XR Fundamentals
<b>Hours</b>	<b>9</b>

<b>Total Hours</b>	<b>61-63</b>
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**Oral Communications (OC) designated courses**

**Quantitative Reasoning (QR) designated courses**  
([https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#QR\\_Course\\_List](https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#QR_Course_List))<sup>1</sup>

**Scientific Inquiry (SI) designated courses**

**Diversity and Social Justice AND Global Understanding designated courses**

<sup>1</sup>not MAT 125

<sup>2</sup>MAT 120 or higher (not MAT 125 or MAT 126)

## Career