



2011 - 2012  
Career and Technical Programs

Computer Information  
Technology Department  
541.463.5826

lanecc.edu

# Computer Simulation/ Game Development

Two-Year Associate of Applied Science Degree,  
Computer Simulation and Game Development

Career Pathway Certificate of Completion,  
Computer Game Programming in C++

**Purpose** To prepare students for entry-level positions in the simulation and game development industries or to transfer to a four-year school for additional education.

**Learning Outcomes** The graduate will:

- develop programming knowledge and skills with a current commercial programming language.
- design, program, test, debug and document computer simulation or game programs using a variety of current tools and technologies.
- create computer simulations or games using industry standard development tools.
- develop skills and knowledge in computer animation using industry standard tools.
- learn mathematical concepts related to simulation and game development and use those concepts in class projects.
- use appropriate library and information resources to research simulation and game development issues, programming tools and technologies and to support lifelong technical learning.

## Employment Trends

- Lane County openings - 12 annually, projected through 2018
- Statewide openings - 166 annually, projected through 2018
- Annual National positions - 209,300 current; 236,800 projected through 2018

## Wages

- Average hourly rate in Lane County - \$27.02
- Average annual rate in Lane County - \$56,209
- Average hourly rate Statewide - \$32.91
- Average annual rate Statewide - \$68,447

## Costs in Addition to Tuition (estimates)\*

Books and Materials .....	\$1,500
Laptop Computer .....	\$1,500
CIT Lab Fees .....	\$ 168
Total .....	\$3,168

\* Subject to change without notice.

**Prerequisites** Students must qualify for MTH 231, CS 161C+ and WR 121 either by placement testing or completing prerequisite courses. Students should consult with a counselor or advisor to plan a program of study.

**Second Year Requirements** A personal laptop is required for 2nd-year students in the Computer Simulation and Game Programming degree program. If you receive financial aid, some of those funds may be used for this purchase. Please contact the CIT Department or go to lanecc.edu/cit for options and system requirements.

**Cooperative Education (Co-op)** Co-op is a required and important part of the Computer Simulation and Game Development Degree program. It provides relevant field experience that integrates theory and practice while providing opportunities to develop skills, explore career options, and network with professionals and employers in the computer programming field. Contact the Cooperative Education Division, Bldg. 19, Rm. 231, 541.463.5203.

**Program Lead** Jim Bailey, Bldg. 19, Rm. 146, 541.463.3148,  
baileyj@lanecc.edu

## Computer Simulation and Game Development

### Two-Year Associate of Applied Science Degree

First Year	Fall
CIS 100 Computing Careers Exploration <sup>D,G</sup> .....	2
CIS 125G Software Tools 1: Game Development <sup>D,G</sup> .....	4
CS 133G Beginning C++ Programming for Games <sup>D,G</sup> .....	4
Elective <sup>1</sup> .....	4

Total Credits 14

	Winter
FA 221 Computer Animation <sup>*,D,G</sup> .....	3
CS 233G Intermediate C++ Programming for Games <sup>*,D,G</sup> .....	4
ART 245 Drawing for Media <sup>D,G</sup> .....	4
Elective <sup>1</sup> .....	4

Total Credits 15

	Spring
FA 222 Computer Animation 2 <sup>*,D,G</sup> .....	3
CS 253 Computation for Computer Graphics <sup>*,D,G</sup> .....	4
CS 260 Data Structures <sup>*,D,G</sup> .....	4
PE/Health requirement <sup>R</sup> .....	3
Elective <sup>1</sup> .....	3

Total Credits 17

# Computer Simulation/Game Development

## Second Year

	Fall
CIS 135G Software Tools 2: Game Development <sup>*,D,G</sup> .....	4
CS 234G Advanced C++ Programming for Games <sup>*,D,G</sup> .....	4
WR 121 Introduction to Academic Writing <sup>*</sup> .....	4
MTH 231 Discrete Math 1 <sup>*,D,G</sup> .....	4

Total Credits 16

	Winter
CS 235G Software Tools 3: Game Development <sup>*,D,G</sup> .....	4
Speech course <sup>2</sup> .....	4
WR 227 Technical Writing .....	4
MTH 232 Discrete Math 2 <sup>*,D,G</sup> .....	4

Total Credits 15

	Spring
CS 297G Simulation and Game Development Capstone <sup>*,D,G</sup> .....	4
CS 280SGD Co-op Ed: Simulation and Game Development (second-year standing required) <sup>D,G</sup> .....	3
Human Relations requirement <sup>R</sup> .....	3-4
CG 203 Human Relations at Work (Recommended) MTH 233 Discrete Math <sup>3 * ,D,G</sup> .....	4

Total Credits 14-15

1. Elective courses: See program counselor or advisor for course suggestions.

2. Speech course: See program counselor or advisor for course suggestions.

## Computer Game Programming in C++

### Career Pathway Certificate of Completion

**Purpose** To provide students with the knowledge and skills required to program in C++, specifically focused on simulation and game programming.

**Learning Outcomes** The certificate recipient will:

- understand the syntax and semantics of C++ programming.
- demonstrate the ability to solve programming projects using an object-oriented methodology.
- understand and use common data structures to solve programming problems.
- design, develop, test, debug, and document solutions to simulation and computer game problems using a variety of current tools.
- demonstrate the knowledge of common software engineering methodologies.
- develop a portfolio of programs working in a team-oriented environment.

### Costs in Addition to Tuition (estimates)\*

Books and lab fees ..... \$150-\$200  
Students taking courses using CIT labs are assessed a one-time fee up to \$28 per term. See the CIT department for details.

\* Subject to change without notice.

**Prerequisites** Students are expected to be comfortable working on a computer, including the ability to create files with a text editor and manage file folders. CS 260 has a prerequisite of MTH 111.

**Certificate Lead** Jim Bailey, Bldg. 19, Rm. 146, 541.463.3148, [baileyj@lanecc.edu](mailto:baileyj@lanecc.edu)

### Courses required Credits

CS 133G Beginning C++ Programming for Games <sup>D,G</sup> .....	4
CS 233G Intermediate C++ Programming for Games <sup>*,D,G</sup> .....	4
CS 260 Data Structures <sup>*,D,G</sup> .....	4
CS 234G Advanced C++ Programming for Games <sup>*,D,G</sup> .....	4
Total Credits	16