

GAME DEVELOPMENT AND SIMULATION PROGRAMMING (AS)

Program Overview Associate in Science Degree

The Video Game Development and Design program has two degree tracks: Game Development and Simulation Programming (VDVA) and Video Game Design (VDEA).

The associate degree program in Game Development and Simulation Programming (VDVA) will prepare students for entry-level careers in game programming, simulation programming, and software engineering. Graduates will be prepared for entry-level positions in a variety of digital, desktop production environments.

Through a combination of theoretical lessons, hands-on workplace-relevant laboratory experiences and small class sizes led by experienced instructors, the program emphasizes the application of lessons and knowledge to the design and development process of creating games and simulations.

As students prepare for the exciting fields of game development and simulation, they will learn how to design games, will be introduced to the game development process, will hone people skills and communications skills through team-based projects and presentations, will master coding languages such as C++, and will learn the use of industry-standard software packages. An important component of the curriculum is building a portfolio that will include the 2D games developed by students. Graduates from this program will be eligible for entry-level positions such as junior game designer, quality assurance engineer, and junior programmer. This program also prepares students to further their education in NEIT's bachelor's degree programs in Game Development and Simulation Programming or Business Management.

Curriculum

Course	Title	Quarter Credit Hours
Term I		
GDS 111	HTML and JavaScript	4
VDG 114	Introduction to Game Development	3
VDG 115	Digital Graphics for Gaming	3
Choose one of the following (depending upon Math Placement):		4-5
MA 105	Basic College Math with Lab (MA/SCI Core) ¹	
MA 110	Introduction to College Math (MA/SCI Core) ¹	
Elective	100-200 Level Math/Science Core ¹	
Quarter Credit Hours		14-15
Term II		
GDS 110	Introduction to Game Programming	4
VDG 126	2D Content Creation Tools for Games	4
VDG 129	Technical & Visual Communications for Game Designers	3

EN 100	Introduction to College Writing (COM Core) ¹	4
Quarter Credit Hours		15
Term III		
GDS 121	Intermediate Game Programming	4
GDS 137	Game Prototyping	4
VDG 133	3D Modeling I	4
Elective	100-200 Level Social Sciences Core ¹	4
EN 200	Workplace Communications (COM Core) ¹	4
Quarter Credit Hours		20
Term IV		
GDS 131	Advanced Game Programming	4
GDS 134	Game Persistence	3
VDG 244	Unity I	4
MA 125	Technical Math I ¹	4
Quarter Credit Hours		15
Term V		
GDS 252	Algorithms and Data Structures	4
VDG 251	Introduction to Level Design	3
VDG 256	Unity II	4
PHY 200	Physics I & Lab (MA/SCI Core) ¹	4
Elective	100-200 Level Humanities (or Arts/Foreign Language Core) ¹	4
Quarter Credit Hours		19
Term VI		
GDS 268	Game Studio	3
SE 256	Web Development Using .NET	4
VDG 261	Game Testing	3
MA 210	Technical Math II ¹	4
Quarter Credit Hours		14
Total Quarter Credit Hours		97-98

¹ Liberal Arts Core.

Legend

C = Number of lecture hours per week
 L = Number of laboratory hours per week
 T = Total Quarter Credit Hours where each lecture hour per week is one credit, every 2-4 laboratory hours are one credit depending on the expected amount of pre- or post-lab work.

All associate degree students are required to take 32 credits of liberal arts and math/science courses as selected from the liberal arts core. See the course descriptions section of this catalog for a list of the core area courses. Students who place out of MA 105 Basic College Math with Lab/MA 110 Introduction to College Math must still take 32 credits of core courses.

Subject to change.

Program Mission, Goals, and Outcomes Program Mission Game Development and Simulation Programming

The mission of the Game Development and Simulation Programming Associate Degree (VDVA) Program is to provide students with an

introduction to a variety of careers in interactive media design and digital asset creation through the development of video games. This curriculum will provide opportunities for students to learn about design, digital assets, programming logic, and the creative process, as well as interdisciplinary collaboration and pipeline workflows. The program emphasizes the application of skills and knowledge to the design and development of games and simulations through a combination of theory, practical laboratory exercises, collaborative experiences, and a Game Studio project. All course outcomes are designed to prepare students for further education at the bachelor's level.

Program Goals

The VDVA program will:

1. Provide the opportunities for students to learn the programming languages used for web, procedural, and basic object-oriented programming.
2. Provide the opportunities for students to learn design and project planning through storyboarding and documentation.
3. Provide the opportunities for students to learn the creation of 2D and 3D multimedia graphics animations and simulations.
4. Provide the opportunities for students to learn game design and publication including interactive gameplay, game balance, team development, and project management for several game genres.
5. Provide the opportunities for students to learn and understand the main components of a game engine and utilize popular commercial game engines.
6. Provide the opportunities for students to learn how to create and execute narrative, interpretive, interactive compositions and animations.
7. Provide the opportunities for students to instill in the student a sense of commitment to the computer-generated imagery (CGI) profession's core values and ethics.
8. Provide the opportunity for the student to understand the elements of a career as an independent contractor and freelancer.
9. Provide opportunities where students learn and apply professional oral, graphical, and written communication practices, function as a member of a team, act ethically and responsibly, as well as provide respect for all people and cultures.
10. Provide learning opportunities where the faculty and learning activities model habits and strategies to facilitate proper communications and critical thinking.
11. Provide opportunities for students to explicitly develop self-regulated learning strategies that facilitate proper communications protocols as well as effective critical thinking tactics.

Program Outcomes

Students will:

1. Demonstrate introductory programming knowledge, skills and development processes using one or more programming languages.
2. Design, develop and document game programs, including the use of user needs analysis, flowcharting, pseudo-code, source code, and technical documents.

3. Develop 2D and/or 3D multimedia graphics animations and simulations.
4. Form a team, then using project management skills, design, develop and publish an interactive game in one or more genres.
5. Analyze and utilize industry standard game engine components.
6. Design and develop database driven structures and game applications.
7. Demonstrate professional oral, graphical, and written communication skills, the ability to function as a member of a team, the ability to act ethically and responsibly, and respect for all people and cultures.
8. Demonstrate and explain how they implement self-regulated learning strategies to improve their learning, perform research, and critically assess and apply new information.
9. Demonstrate advanced programming knowledge, skills and development processes using several programming languages, and advanced techniques including object-oriented development.

Q&A and Technical Standards Questions & Answers

1. When do my classes meet?

Day Classes: Technical classes normally meet for at least three hours a day for up to five days a week. Classes normally begin in the early morning (7:45 a.m.), late morning (usually 11:25 a.m.), or mid-afternoon. The time slot for your program may vary from term to term.

Evening Classes: Technical classes meet on the average of three nights a week, although there may be times when they will meet four nights a week. Classes normally begin at 5:45 p.m.

In addition, to achieve your associate degree, you will take a total of approximately eight liberal arts courses, which will be scheduled around your technical schedule over the course of your entire program. Each liberal arts course meets approximately four hours per week. Liberal arts courses are offered days, evenings, and Saturdays.

At the beginning of each term you will receive a detailed schedule giving the exact time and location of all your classes. The university requires that all students be prepared to take classes and receive services at any of NEIT's locations where the appropriate classes and services are offered.

When a regularly scheduled class falls on a day which is an NEIT observed holiday (Columbus Day, Veterans Day, Martin Luther King, Jr. Day, and Memorial Day), an alternate class will be scheduled as a make up for that class. The make up class may fall on a Friday. It is the student's responsibility to take note of when and where classes are offered.

2. How large will my classes be?

The average size for a class is about 20 to 25 students; however, larger and smaller classes occur from time to time.

3. How much time will I spend in lab?

Almost half of your technical courses consist of laboratory work. In order for you to get the most out of your laboratory experiences, you will first receive a thorough explanation of the theory behind your lab work.

4. Where do my classes meet?

Students should be prepared to attend classes at any of NEIT's classroom facilities: either at the Post Road, Access Road, or East Greenwich campus.

5. I have not earned my high school diploma or GED: can I enroll in an Associate Degree Program?

A candidate for admission to an associate degree program must have a high school diploma, have earned a recognized equivalency diploma (GED), or meet the federal home school requirements.

6. How long should it take me to complete my program?

To complete your degree requirements in the shortest possible time, you should take the courses outlined in the prescribed curriculum. For a typical six-term curriculum, a student may complete the requirements in as little as 18 months.

To complete all your degree requirements in the shortest time, you should take at least one liberal arts course each term.

Students may also elect to complete some of their liberal arts requirements during Intersession (except for EN courses), a five-week term scheduled between Spring and Summer Terms. Students will not be assessed any additional tuition for liberal arts courses taken during the Intersession but may be assessed applicable fees.

Students wishing to extend the number of terms needed to complete the required technical courses in their curriculum will be assessed additional tuition and fees.

7. Is NEIT accredited?

NEIT is accredited by the New England Commission of Higher Education (NECHE). Accreditation by NECHE is recognized by the federal government and entitles NEIT to participate in federal financial aid programs. Some academic departments have specialized professional accreditations in addition to accreditation by NECHE. For more information on accreditation, see NEIT's catalog.

8. Can I transfer the credits that I earn at NEIT to another college?

The transferability of a course is always up to the institution to which the student is transferring. Students interested in the transferability of their credits should contact the Office of Teaching and Learning for further information.

9. Can I transfer credits earned at another college to NEIT?

Transfer credit for appropriate courses taken at an accredited institution will be considered upon receipt of an official transcript for any program, biology, science, and mathematics courses in which the student has earned a "C" or above within the past three years and for English or humanities courses in which the student has earned a "C" or above within the last ten years. An official transcript from the other institution must be received before the end of the first week of the term for transfer credit to be granted for courses to be taken during that term. Students will receive a tuition reduction for the approved technical courses based on the program rate and will be applied against the final technical term of the curriculum's tuition amount. No tuition credit is provided for courses which are not a part of the technical curriculum.

10. What is the "Feinstein Enriching America" Program?

New England Institute of Technology is the proud recipient of a grant from the Feinstein Foundation. To satisfy the terms of the grant, the university has developed a one-credit community enrichment course which includes hands-on community enrichment projects. The course can be taken for a few hours per term, spread over several terms.

Students who are already engaged in community enrichment on their own may be able to count that service towards course credit.

11. How many credits do I need to acquire my Financial Aid?

In order to be eligible for the maximum financial aid award, you need to maintain at least 12 credits per academic term.

12. What does my program cost?

The cost of your program will be as outlined in your enrollment agreement, along with your cost for books and other course materials. Students who decide to take more terms than the enrollment agreement describes to complete the technical courses in their curriculum will be subject to additional fees and possible additional tuition costs. Students who elect to take the technical portion of the degree requirements at a rate faster than the rate prescribed in the curriculum and the enrollment agreement will be assessed additional tuition.

Students who require prerequisite courses will incur additional tuition and fees above those outlined in their enrollment agreement.

If a student elects to take a course(s) outside of the prescribed curriculum, additional tuition and fees will be assessed.

Remember, students who withdraw and re-enter, one time only, pay the tuition rate that was in effect for them at the time of their last day of attendance for up to one year from their last day of attendance. Second re-entries and beyond pay the tuition rate in effect at the time they re-enter. The most economical way for you to complete your college degree is to begin your program now and continue your studies straight through for the six terms necessary to complete your degree requirements.

13. What kind of employment assistance does NEIT offer?

The Career Services Office assists NEIT students and graduates in all aspects of the job search, including resume writing, interviewing skills, and developing a job search strategy. Upon completion of their program, graduates may submit a resume to the Career Services Office to be circulated to employers for employment opportunities in their fields. Employers regularly contact us about our graduates. In addition, our Career Services Office contacts employers to develop job leads. A strong relationship with employers exists as a result of our training students to meet the needs of industry for over fifty years. No school can, and NEIT does not, guarantee to its graduates employment or a specific starting salary.

14. Where will job opportunities exist?

Graduates have obtained employment in the local area. However, one of the most exciting aspects of this program is the ability to look nationally for employment opportunities.

15. What kind of jobs will I be qualified to look for?

Generally, jobs will exist in the entry-level positions in the computer industry. Entry-level positions in digital production and desktop production, programmer, entry-level game designer, entry-level game developer, or web developer may be some of the job choices available to a graduate with an associate degree. Upon completion of a bachelor's degree at NEIT, positions on the management level become attainable.

Technical Standards

These technical standards set forth by the Game Development and Simulation Programming department establish the essential qualifications considered necessary for students admitted to the

program. The successful student must possess the following skills and abilities or be able to demonstrate they can complete the requirements of the program with or without reasonable accommodation, using some other combination of skills and abilities.

Cognitive Ability

- Good reasoning and critical thinking skills.
- Ability to learn, remember and recall detailed information and to use it for problem solving.
- Ability to deal with materials and problems such as organizing or reorganizing information.
- Ability to use abstractions in specific concrete situations.
- Ability to separate complex information into its component parts.
- Ability to perform tasks by observing demonstrations.
- Ability to perform tasks by following written instructions.
- Ability to perform tasks following verbal instructions.
- Possession of basic keyboarding skills and knowledge of computer programs.

Communications Skills

- Ability to speak in understandable English in a classroom situation on a one-on-one basis as well as before a group.
- Ability to communicate effectively with faculty and other students.
- Ability to demonstrate and use the knowledge acquired during the classroom training process.
- Ability to verbally express technical concepts clearly and distinctly.
- Ability to express thoughts clearly.

Adaptive Ability

- Ability to remain calm in the face of computer lab equipment and/or software failure.
- Ability to maintain emotional stability and the maturity necessary to interact with members of the faculty and students in a responsible manner.
- Ability to tolerate the differences in all students, faculty, and administration.
- Ability to follow instructions and complete tasks under stressful and demanding conditions.
- Ability to adapt in a positive manner to new and changing situations with an open mind and flexibility.
- Ability to think clearly and act quickly and appropriately in stressful situations.

Physical Ability

- Ability to sit continuously at a personal computer for long periods of time in order to learn and become proficient in computer programming and networking.
- Ability to perform learned skills independently, with accuracy and completeness within reasonable time frames in accordance with classroom and business procedures.

Manual Ability

- Sufficient motor function and sensory abilities to participate effectively in the classroom laboratory.

- Sufficient manual dexterity and motor coordination to coordinate hands, eyes and fingers in the operation of computers and business equipment.

Sensory Ability

Visual

- Acute enough to see clearly and interpret the contents on the computer screen.

Degree Progress Checklist

Game Development and Simulation Programming - AS

Degree Progress Checklists

- For students entering October 2021 or later
- For students entering April 2019 to September 2021