Atlantic Technical College
Game/Simulation/Animation Programming
Program Syllabus
2017-2018

Instructor Name: Chandrakasan Iyar
Department Name: Business and Informational Technology
Office/Classroom Location: Building 7 Room 176
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Instructor Office Hours:
M-F: 6:30 am – 7:00 am & 2:00 – 3:00 pm (appointment preferred)
Instructor responses to student requests will be provided within 24 hours of regular school operating hours:
Monday – Friday 7:00 am – 3:00 pm.

Student Hours:
Monday – Friday
Postsecondary AM: 7:30 am – 10:30 am
Postsecondary Full-Time: 7:30 am – 2:00 pm
Lunch: 11:00 am – 11:30 am
Online Full-Time or Part-Time/Hybrid

Program Name: Game/Simulation/Animation Programming

OCPs	Course Names	Hours
A	DIG0070: Game/Simulation Designer	300
B	DIG0075: Game/Simulation Programmer	150
C	DIG0076: Game/Simulation Software Developer	150

Course Description:

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers such as a Game/Simulation Designer, Game Programmer, and Game Software Developer in the Information Technology career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Information Technology career cluster.

The content includes but is not limited to practical experiences in game/simulation conceptualization, design, storyboarding, development methodologies, essential programming techniques, and implementation issues. Specialized programming skills involving advanced mathematical calculations and physics are also integrated into the curriculum.

Technical College Policy/Adult Student Attendance:
- A student must be withdrawn after being absent for six (6) consecutive days.
- Two (2) additional absences may be allowed under certain circumstance with appropriate documentation.
- Please refer to the Student Handbook for postsecondary students.
  http://www.atlantictechnicalcollege.edu/atc-student-handbook/

Required Book(s) and/or Online Access:

- CIW JavaScript Specialist Electronic Student Kit
- Garage Games (GG-Interactive)
- Unity 3D

Required Materials/Supplies:
Purchased from ATC Bookstore:
- Computer Headset
- USB Drive / 8GB
- Three-ring binder with index tabs
- Pen, Pencil & Notebook

All required books and most materials/supplies can be purchased from the ATC bookstore.
Stop by during operational hours for pricing, booklist and other purchasing information.

Grading System:

A	90 - 100%
B	80 - 89%
C	70 - 79%
D	60 - 69%
F	0 - 59%
I	Incomplete

Additional Program Specific Grading Information:

Daily/Classwork	30%
Quizzes/Tests	30%
Exams/Projects	30%
Work Habits	10%

Online Course Grading Policy:
Online students' grades and attendance are based on the following:
- Scheduled assignments are due each **Sunday by 11:59 pm**. Late submission of work will affect the assignment grade.
- Students assume full responsibility for the content and integrity of submitted work. As the guiding principle of academic integrity, a student's submitted work, examinations, reports, projects, etc. must be his/her own.
- Unless otherwise stated by the instructor, physical or digital references including books, charts, graphs, diagrams, photos, notes or calculators may not be utilized during assessments or exams. Blank scratch paper will be permitted during certain assessments.
- Exams may include an oral or lab/skills component and final exams will be completed in-person during a lab session.

View Your Grades:
Grades can be viewed online by following the directions below:
1. Go to https://browardfocus.com (access FOCUS using Chrome, Firefox or Safari).
2. Student ID which is on your student schedule.
3. Passcode: Student's date of birth formatted as YYYYMMDD.
   Four digits for the year, two digits for the month and two digits for the day.

Classroom/Lab Rules:
- Sign in and out DAILY.
- Read and follow DAILY AGENDA upon arrival.
- Follow all rules in the student and discipline code books.
- Cell phones silent or OFF and PUT AWAY.
- Contact instructor by 8:00 am on the same day when absent (email preferred).
- Come to class prepared to work and be respectful of ALL class members.
- ALL assignments submitted to instructor must reflect the student's own individual work.
- **NO FOOD OR BEVERAGES IN THE LAB.**

Industry Certification & State Credential Exam Cost:	**Outstanding Student Recognition Information:**
• CIW JavaScript Specialist- $150 *You may qualify for certification reimbursement of your exam cost(s) upon passing. Credential fees are subject to change.*	A gold seal will be applied to a Program Completion Certificate or an Applied Technology Diploma if the student has earned a 3.5 GPA or higher in their Career and Technical Education (CTE) classes.

Program Name: Game/Simulation/Animation Programming

Course Number: DIG0070
Course Name: Game/Simulation Designer (300 Hours)
Occupational Completion Point: A
Intended Outcomes: (From FL DOE Curriculum Framework)
Student will be able to:
- Create a game design production plan that describes the game play, outcomes, controls, interface and artistic style of a video game.
- Use information technology tools
- Design and create a playable game
- Categorize the different gaming genres
- Categorize different gaming platforms
- Understand the historical significance of electronic and non-electronic games
- Describe the trends in current and future game development
- Identify the business model commonly used in game development industries
- Examine and categorize the significant processes in the production of games
- Understand the core tasks and challenges that face a video game design team
- Identify legal issues that affect games, developers and players

- Demonstrate the professional level of written and oral communication required in the game development industry
- Investigate career opportunities in the game industry
- Demonstrate an understanding of the vocabulary of the industry for discussing games and play
- Demonstrate research and information fluency
- Demonstrate an understanding of the techniques used to evaluate game mechanics, game play, flow, and game design
- Identify popular games and identify commonality between them
- Understand the general procedure and requirements of game design
- Explore the methods used to create and sustain player immersion
- Become familiar with popular game tools such as DirectX, 3DMax, and different gaming engines
- Demonstrate language arts knowledge and skills
- Demonstrate mathematics knowledge and skills
- Demonstrate science knowledge and skills
- Create a working game or simulation individually or as part of a team
- Describe the game development life cycle
- Identify hardware constraints on video games including processors and I/O devices
- Understand the general principles of storytelling
- Understand character archetypes and character design
- Understand the use of storyboarding in game design
- Develop a game design document or cut
- Understand outlining in game designs
- Explore elements of puzzle design
- Discuss game designer strategy considerations
- Understand the process of creating and designing player choice
- Create and design the game flow as it relates to story and plot
- Assess common principles and procedures in game flow design
- Describe player challenge rule creation elements
- Identify tools and software commonly used in game development
- Understand the technical methodologies for integrating digital media into a game or simulation
- Identify commonly used art and animation production tools in the game design industry
- Understand the general concepts of environmental design
- Describe how environmental design is used in conjunction with game level design
- Describe pertinent issues facing game designers
- Describe Monte Carlo simulation as it relates to game design
- Understand the use of inventory systems in game design
- Use information technology tools
- Describe the roles within a game studio
- Describe the importance of professional ethics and legal responsibilities

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Course Number: DIG0075
Course Name: Game/Simulation Programmer (150 Hours)
Occupational Completion Point: B
Intended Outcomes: (From FL DOE Curriculum Framework)
Student will be able to:
- Identify functions of information processing.
- Test programs
- Plan program design
- Code programs
- Perform program maintenance
- Create and maintain documentation

- Evaluate assigned game programming tasks
- Implement enhanced program structures
- Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance
- Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives
- Explain the importance of employability skill and entrepreneurship skills.
- Demonstrate personal money-management concepts, procedures, and strategies

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Course Number: DIG0076
Course Name: Game/Simulation Software Developer (150 Hours)
Occupational Completion Point: C
Intended Outcomes: (From FL DOE Curriculum Framework)

- Identify and describe basic network terminology and network security
- Game configuration
- Test programs
- Plan program design
- Create and maintain documentation
- Code programs
- Demonstrate an understanding of operating systems, environments, and platforms
- Implement enhanced program structures
- Implement multimedia programming
- Develop an understanding of programming techniques and concepts