GAME DESIGN AND DEVELOPMENT
COURSE CODE: 5352
STUDENT PROFILE

STUDENT'S NAME		TEACHER'S NAME	
School Year/Semester	**Date Began**	**Date Completed**	**Grade**

Directions: Document student's progress using the applicable rating scales below: Enter date of completion under the appropriate column.

0 - Has not received instruction in this area / **no experience or knowledge of this task (N/A)**
1 – Requires additional instruction and or **close supervision (60-69)**
2 – Can perform the task completely with **limited supervision (70-79)**
3 – Can apply and perform **independently (80-100)**

A. SAFETY		0	1	2	3
1	Review school safety policies and procedures.				
2	Review classroom safety rules and procedures.				
3	Review safety procedures for using equipment in the classroom.				
4	Identify major causes of work-related accidents in office environments.				
5	Demonstrate safety skills in an office/work environment.				

B. STUDENT ORGANIZATIONS		0	1	2	3
1	Identify the purpose and goals of a Career and Technology Student Organization (CTSO).				
2	Explain how CTSOs are integral parts of specific clusters, majors, and/or courses.				
3	Explain the benefits and responsibilities of being a member of a CTSO.				
4	List leadership opportunities that are available to students through participation in CTSO conferences, competitions, community service, philanthropy, and other activities.				
5	Explain how participation in CTSOs can promote lifelong benefits in other professional and civic organizations.				

C. TECHNOLOGY KNOWLEDGE		0	1	2	3
1	Demonstrate proficiency and skills associated with the use of technologies that are common to a specific occupation				

2	Identify proper netiquette when using e-mail, social media, and other technologies for communication purposes.				
3	Identify potential abuse and unethical uses of laptops, tablets, computers, and/or networks.				
4	Explain the consequences of social, illegal, and unethical uses of technology (e.g., piracy; cyberbullying, illegal downloading; licensing infringement; inappropriate uses of software, hardware, and mobile devices in the work environment).				
5	Discuss legal issues and the terms of use related to copyright laws, fair use laws, and ethics pertaining to downloading of images, photographs, documents, video, sounds, music, trademarks, and other elements for personal use.				
6	Describe ethical and legal practices of safeguarding the confidentiality of business-related information.				
7	Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.				
D. PERSONAL QUALITIES AND EMPLOYABILITY SKILLS		**0**	**1**	**2**	**3**
1	Demonstrate punctuality.				
2	Demonstrate self-representation.				
3	Demonstrate work ethic.				
4	Demonstrate respect.				
5	Demonstrate time management.				
6	Demonstrate integrity.				
7	Demonstrate leadership.				
8	Demonstrate teamwork and collaboration.				
9	Demonstrate conflict resolution.				
10	Demonstrate perseverance.				
11	Demonstrate commitment.				
12	Demonstrate a healthy view of competition				
13	Demonstrate a global perspective.				
14	Demonstrate health and fitness.				
15	Demonstrate self-direction.				
16	Demonstrate lifelong learning.				
E. PROFESSIONAL KNOWLEDGE		**0**	**1**	**2**	**3**
1	Demonstrate effective speaking and listening skills.				
2	Demonstrate effective reading and writing skills.				
3	Demonstrate mathematical reasoning.				

4	Demonstrate job-specific mathematics skills.				
5	Demonstrate critical-thinking and problem-solving skills.				
6	Demonstrate creativity and resourcefulness.				
7	Demonstrate an understanding of business ethics.				
8	Demonstrate confidentiality.				
9	Demonstrate an understanding of workplace structures, organizations, systems, and climates.				
10	Demonstrate diversity awareness.				
11	Demonstrate job acquisition and advancement skills.				
12	Demonstrate task management skills.				
13	Demonstrate customer-service skills.				
F. INTRODUCTION TO GAME DESIGN AND DEVELOPMENT		**0**	**1**	**2**	**3**
1	Identify game design and development terminology.				
2	Compare and contrast different gaming genres (e.g., action, simulation, role-playing, strategy, sports, puzzle, etc.).				
3	Analyze the advancement of gaming history (e.g., action, simulation, role-playing, strategy, sports, puzzle, etc.).				
G. GAME PLANNING (INTEGRATED THROUGHOUT GAME DEVELOPMENT)		**0**	**1**	**2**	**3**
1	Identify the primary steps in the design process (e.g., conceptualize, prototype, test, analyze).				
2	Identify/collect/create game structures (e.g., sprites/characters, visual components, stage/environment, etc.).				
3	Evaluate basic gameplay from an existing game.				
4	Compare and contrast narratives/stories in gameplay and explain how and when the storyline could pertain to game design.				
5	Develop objectives and outcome of a game, including reward systems.				
6	Create technical documentation using appropriate industry terminology.				
H. GAME DEVELOPMENT		**0**	**1**	**2**	**3**
1	**GAME GRAPHICS** 1. Create game characters (players and avatars, non-players). 2. Create the game world/environment. 3. Identify the mapping coordinates. 4. Create Splash, Credits, and Tutorial pages. 5. Create assets.				
2	**COLLECTIONS AND OBJECTS**				

	1. Develop variable, fields, and methods as needed to construct the game world/environment. 2. Code, implement, and instantiate objects. 3. Implement object-oriented programming to manipulate objects. 4. Use collections (e.g., arrays, arraylists, etc.) to simplify coding on multiple instances of objects (enemies, stars, particles systems, ammo, snow/rain/sleet, etc.).				
3	**GAME MECHANICS AND CONTROL** 1. Develop code to animate characters to respond to different control devices (i.e., keyboard, mouse, and controllers). 2. Develop code to animate characters as needed.				
4	**COLLISION THEORY AND LOGIC** 1. Code decision structures to detect collisions with other characters and elements of the game world/environment. 2. Code results of collision detection to produce intended reaction(s) (e.g., cause/effect, action/reaction). 3. Code looping structures as necessary (e.g., FOR, WHILE, or DO).				
5	**ENVIRONMENTAL FORCES (PHYSICS)** 1. Use mathematical formulas (addition, subtraction, increment, decrement, etc.) to code Gravity, Velocity, Acceleration, and Friction to affect Objects. 2. Use trigonometry functions (sine, cosine, tangent, etc.) to code direction and rotation. 3. Demonstrate the use of constraints in coding to provide more realistic animation of Objects.				
6	**GAME ENHANCEMENTS (OPTIONAL)** 1. Select, edit, and incorporate appropriate music and sound effects. 2. Select, edit, and incorporate appropriate video files. 3. Add and format dynamic input and output elements including textual data. 4. Apply texturing/shading/lighting effects. 5. Develop a reward system (e.g., scoring, win/loss scenario, goal attainment, etc.). 6. Develop progression indicators (e.g., power bar, status bar, map, etc.). 7. Develop additional challenge levels.				
7	**QUALITY ASSURANCE** 1. Develop an executable game. 2. Collect usability and error feedback on game play. 3. Fix errors based on feedback from game play.				
I. CAREER DEVELOPMENT		**0**	**1**	**2**	**3**
1	Research various career options, educational requirements, and employment outlook available in the game design industry.				
2	Analyze game design skills that can be used throughout business and industry.				
3	Research roles and responsibilities of a game design team's members.				
4	Develop an electronic portfolio to include games that demonstrate game design skills.