

## Computer Science 1371 – Introduction to Computer Game Development

### Student Learning Outcomes

1. Students will understand the history of electronic game development.
2. Students will be able to distinguish between different game platforms and genres.
3. Students will define elements related to game strategy, theory and gameplay.
4. Students will identify the distinct roles and responsibilities of members of a game development team.
5. Students will develop and analyze game concepts and proposals.
6. Students will adapt both original and existing intellectual property to the design of computer games.
7. Students will evaluate the game industry and market.
8. Students will create a textured 3D model suitable for use in electronic games using PC-based software.
9. Students will be introduced to the techniques for manipulating textures for use in 3D modeling.
10. Students will create and edit sound effects using PC-based sound editing software
11. Students will use PC-based video editing software to create a machinima.

### Course Content

**Textbook:** *Game Development Essentials*, Second Edition, by Jeannie Novak. The following chapters are covered (See textbook “Contents”).

1. **Historical Foundations.** Electronic games prior to arcades, the arcade era, introduction of console gaming, the video game market crash and rebirth, the personal computer revolution, multiplayer gaming, convergence of video game technology.
2. **Player Elements.** Game market, player motivation, geographics, psychographics, demographics.
3. **Game Elements.** Applications of game technology, platforms, time intervals, player modes, genres, ratings, concept development and documentation.
4. **Storytelling.** Storytelling traditions, generating ideas, story elements, plot, story devices, gameplay.
5. **Characters.** Types of game characters, character archetypes, character development elements, point-of-view, visual character development techniques, verbal character development, character animation, background, history and advancement.
6. **Gameplay.** Rules, interactive modes, game theory, types of challenges, balance, level design.
7. **Levels.** Design, structure, time, space.
8. **Interface.** Player-centered design, types of interfaces including visual and manual, genre-specific interface design, usability, game options.
9. **Audio.** Importance of audio, sound effects, voice-overs, music.
10. **Roles & Responsibilities of the Game Development Team.** Company roles, team roles, tools.
11. **Production & Management.** Phases of development, management, documentation.
12. **Marketing & Maintenance.** Advertising, customer support.