CSC481 COMPUTER GAMES PROGRAMMING

Learning Outcomes

- Appreciate developments in the computer games industry.
- Understand modern computer game design and implementation techniques.
- Understand components essential to or common in popular computer game styles.
- Learn the games development tools.
- Undertake game applications development.

Content

Game Types, platforms, audience demographics; game structure, game flow, and the role of choice in generating an entertaining interactive experience; Conceptualization and design documentation, interface design, play mechanics, platform modifications, and performance testing; programming teams and processes, game programming software including C++ and Java, DirectX, OpenGL; rigid body simulations, and particle systems; collision detection and collision resolution; Graphic design, color theory, and user interfaces; 3D modeling, 3D environments; Rendering Nature; Rendering Skies Terrain Rendering, Terrain Texturing, Glow, Reflections, Shadows, lighting audio design; Animation: physical motion, animation playback, animation blending, motion extraction, mesh deformations; Artificial intelligence: game agents, finite state machines, path finding algorithms; Audio programming; Networked Games; Multiplayer programming.

Pre-requisites

- CSC121 Programming and problem solving
- CSC125 Linear Algebra
- CSC211 Data structures and algorithms
- CSC215 Introduction to Artificial Intelligence
- CSC314 Computer Graphics

Delivery

Lectures, Tutorials and Labs.