

ITP380: Introduction to Game Programming

Course Coordinator

Sanjay Madhav

Other instructors for course

None

Textbooks and other required materials

1. *Essential XNA Game Studio 2.0 Programming*. Jim Perry and Allen Sherrod.
ISBN: 1-59822-055-1.
2. *Mathematics for 3D Game Programming and Computer Graphics*. Eric Lengyel.
ISBN 1-58459-037-9. (optional)

Major Topics

1. Game Programming Basics
2. Programming in XNA/C#
3. Mathematics for 3D Games
4. Rendering (Rendering Pipeline, Coordinate Spaces, Lighting, Z-Buffers)
5. Event-Based Input Systems
6. Sound
7. Collision Detection (Sphere/Sphere, Ray/Sphere, Swept Sphere, etc.)
8. Physics and Numerical Integration
9. AI (state machine, A*)
10. Cameras and Gameplay Systems
11. Animation
12. Event-based Systems and Scripting Languages