



Syllabus and Topics:

Topics	Hours	Topics Covered
1. <u>Game Design Elements and Development Process</u>	1	<ul style="list-style-type: none">• <i>Elements: Game State, Game View, Players, Mechanics, Themes</i>• <i>Process: Brainstorming, Storyboarding, Physical and Digital Prototyping, Continuous Playtesting</i>
2. <u>Game development tool: XNA</u>	2	<ul style="list-style-type: none">• <i>Application framework</i>• <i>Resource loading model</i><ul style="list-style-type: none">• <i>Content pipeline</i>• <i>Draw/Update cycle</i>• <u>Assignment-1</u>
3. <u>Graphics and Effect-I</u>	4	<ul style="list-style-type: none">• <i>XNA basics: API drawing model</i>• <i>Abstraction and encapsulation of objects</i><ul style="list-style-type: none">• <i>Output coordinate system</i>• <i>Camera Abstraction</i>• <i>Game State implementation</i><ul style="list-style-type: none">• <u>Assignment-2</u>

<p>4. Math and Physics Foundation</p>	<p>4</p>	<ul style="list-style-type: none"> • <i>Vectors: magnitude and direction</i> • <i>Speed, Velocity, Front Direction</i> • <i>Dot and cross products: Home-in Behavior</i> <ul style="list-style-type: none"> • <i>Pixel-Accurate Collisions</i> • <i>Gravitational free fall, Projectile</i> <ul style="list-style-type: none"> • Assignment-3
<p>5. Game Objects States</p>	<p>2</p>	<ul style="list-style-type: none"> • <i>Finite state machine</i> • <i>Taking advantage of Randomness</i> • <i>Complexity and Linear Collection</i> • <i>Integration of Home-in, chasing, gradual turning</i>
<p>6. Graphics and Effect-II</p>	<p>4</p>	<ul style="list-style-type: none"> • <i>World beyond the display screen (moving the camera)</i> <ul style="list-style-type: none"> • <i>Sprite animation</i> • <i>Particle Systems</i> • <i>Particle Emitters</i> • <i>Audio: effects and background music, working with WAV and MP3 formats.</i> <ul style="list-style-type: none"> • Assignment-4

<p>7. <u>Windows Phone 7 Platform</u></p>	<p>2.5</p>	<ul style="list-style-type: none"> • Dreamspark/AppHub: <u>Application Procedure</u> • <u>PinchZoom</u>: Touch pad, and gesture input • <u>Orientation</u> and <u>Accelerometer</u> • Taking texture <u>from the camera</u> <ul style="list-style-type: none"> • <u>Isolated Storage</u> • <u>Tombstoning</u>: state saving <ul style="list-style-type: none"> • <u>Assignment-5</u>
<p>8. Commercialization</p>	<p>0.5</p>	<ul style="list-style-type: none"> • <u>Advertisement</u> • PubCenter: <u>submission process</u>
<p>Total Hours</p>	<p>20</p>	

