

## MEDIA TECHNOLOGIES

### Game & Simulation Design

This certificate is designed to provide hands-on, project oriented learning opportunities for the design of game and simulation products. Appropriate software will be used to create products for popular game consoles, the online environment and as stand-alone end products. Commercial level products will be prototyped, developed and tested. Both individual and team-based project development will comprise part of this certificate. **Courses in each level (Foundation, Core, Advanced Track) must be completed prior to advancing to the next level. Where more than one course is offered within a level, courses may be taken in any sequence.**

#### Foundation Courses

VPT 1030	Intro to Desktop Video/Audio	3
MDT 2100	Photoshop Essentials	3
MDT 1600	Game & Simulation Design and Development Intro	3

#### Core Courses

MDT 1620	Game & Simulation Design I	3
MDT 1670	Game & Simulation Design II	3

#### Advanced Track

MDT 2670	Game & Simulation Design III	3
CSIT 2970	Game & Simulation Practicum	3
<b>TOTAL HOURS REQUIRED</b>		<b>21</b>

### Game & Simulation Programming

This certificate is designed to provide hands-on learning strategies for the development of game and simulation programs for the online environment and as stand-alone end products. Theory, purpose, strategies, marketing, development and programming of various game and simulation commercial application products will be undertaken by each participant. Individual projects and team-based development will be a formal part of this certificate. **Courses in each level (Foundation, Core, Advanced Track) must be completed prior to advancing to the next level. Where more than one course is offered within a level, courses may be taken in any sequence.**

#### Foundation Courses

MDT 1600	Game & Simulation Design & Development <a href="#">Intro</a> .....	3
CSIT 1620	Introduction to Game & Simulation Programming .....	4

#### Core Courses

CSIT 1670	Game & 3D Simulation Programming I .....	4
CSIT 2670	Game & 3D Simulation Programming II .....	4

#### Advanced Track

CSIT 2970	Game & Simulation Practicum .....	3
<b>TOTAL HOURS REQUIRED:</b>		<b>18</b>

- CSIT 1620 Introduction to Game & Simulation Programming 4 Credits**  
 An introduction to the field of game development using programming languages: 2D and 3D development tools, online resources, language structures and syntax, use of game development techniques and application of scripting in a virtual world will be explored. Co-requisite MDT 1600
- CSIT 1670 Gaming & 3D Simulation Programming I 4 Credits**  
 Students will explore 3D virtual simulation and game development using a selected game development tool or engine. In depth development of game strategy, action figures, movement, sound and object generation will be the focus of this course. Prerequisite (s): CIST 1620 or 1510 or department approval.
- CSIT 2670 Game & 3D Simulation Programming II 4 Credits**  
 Students will apply programming concepts and skills for simulation and game-based product development using a selected programming language or commercial development tool. Students will use a professional-level game programming/scripting development product set to create user-based simulation and game end-products. Prerequisite(s): CSIT 1670 or one programming course
- CSIT 2970 Game & Simulation Practicum 3 Credits**  
 Students will work in a collaborative effort as a team member to plan, design, code, develop, manage, build, modify and produce a simulation or game. Prerequisite(s): CSIT 2670 or MDT 2670 or department approval
- MDT 1600 Game & Simulation Design & Development Intro 3 Credits**  
 Overview course for design and development of video game systems. Topics include game theory, asset management, game production techniques and “game engine” use. Students will create a game demo presentation for analysis. Designed for anyone interested in pursuing further training in either game/simulation or development or both. Corequisite(s): VPT 1030 and MDT 2100
- MDT 1620 Game & Simulation Design I 3 Credits**  
 Workshop oriented introduction to the field of game design theory and fundamental game/simulation design and construction tools. Project planning, management and workflow will be covered and employed. Students will create visual and aural assets to explore how to design the “look and feel” of a videogame. Assets will be created using basic 2D and 3D animation tools, and sound production and video editing tools. Individual students will design and produce basic games or simulations which will compete for consideration for further development based on their potential for commercial viability. Prerequisite(s): MDT 1600 and 2100 and VPT 1030
- MDT 1670 Game & Simulation Design II 3 Credits**  
 Course emphasis will be to fully develop the game project or simulation prototyped in previous (MDT 1620) class at a basic level of play. Class will also focus on industry tools like game engines, 2D and 3D modelers. Using appropriate tools, scenery, world geometry, 2D and 3D objects, animated characters and sound elements will be developed and included into a one level game or simulation. Where possible, this class will coordinate with students in a corresponding CSIT programming class so that more complicated scripting and programming can be developed and included in the finished project. Prerequisite(s): MDT 1620
- MDT 2670 Game & Simulation Design III 3 Credits**  
 The primary emphasis of the course will be to further develop the simulation or game project completed at a “single level” in previous (MDT 1670) class. The class will expand the project to include possible multiple levels, AI (artificial intelligence), advanced textures, enhanced interactivity, graduated injury recovery, incidental damage, improved character animation, etc. The overall intent will be to add more entertainment value and/or more realism and work with contemporary design challenges. The class will engage online volunteer testers to glean feedback for possible product modification. When needed, this class will coordinate with students in a corresponding CSIT programming class so that more complicated scripting and programming can be developed and included in the finished project. Prerequisite(s): MDT 1670