Bachelor of Information Technology
Game Development and Entrepreneurship
PROPOSED for 2014-2015 - GAME PROGRAMMING Minor

Year-Sem.	Subject	Subject	Subject	Subject	Subject
F1	**BUSI 1700U** Introduction to Entrepreneurship	**INFR 1100U** Intro Programming	**INFR 1020U** Essential Math for Games 1	**INFR 1330U** Introduction to Game Design	**INFR 1310U** Graphic Design I
	INFR 1395U Game Development Workshop I				
W1	**BUSI 2210U** Marketing	**INFR 2140U** Object Oriented Programming *Prereq: INFR 1100U*	**INFR 1030U** Essential Math for Games 2 *Prereq: INFR 1020U, INFR 1100U*	**NEW INFR 1335U** Digital Game Design *Prereq: INFR 1330U*	**INFR 1320U** Graphic Design II *Prereq: INFR 1310U*
	INFR 1396U Game Development Workshop II				
F2	**BUSI 2550U** Intro. Project Management	**INFR 1350U** Introduction to Computer Graphics *Prereq: INFR 1030U, INFR 2140U*	**INFR 2310U** Computer Animation: Algorithms & Techniques *Prereq: INFR 1030U, INFR 2140U*	**INFR 2330U** Intermediate Game Design *Prereq: INFR 1335U*	INFR 2340 Intro to Modeling & Animation *Prereq: INFR 1320U Co-Req: INFR 2310U*
	INFR 2395U Game Development Workshop I				
W2	**BUSI 2120U** Accounting for IT	**INFR 2350U** Intermediate Computer Graphics *Prereq INFR 1350U,*	**INFR 2820U** Algorithms and Data Structures *Prereq: (INFR 1030U or INFR 1010U) and INFR 2140U*	**INFR 2810U** Computer Architecture *Prereq INFR 1100U, INFR 1020U*	**INFR 2370U** GAME SOUND *Prereq: INFR 2140U, INFR 1030U*
	INFR 2396U Game Development Workshop II				
F3	**BUSI 2700U** Entrepreneurial Finance *Prereq: BUSI 2120U*	**Game Programming Minor Course**	**INFR 3110U** Game Engine Design & Implementation *Prereq: INFR 2350U, INFR 2820U, INFR 2310U*	**INFR 3330U** Advanced Game Design *Prereq: INFR 2330U*	**INFR 3340U** Intermediate Modeling Techniques *Prereq: INFR 2340U*
	INFR 3395U Game Development Workshop I				
W3	**Game Programming Minor Course**	**Game Programming Minor Course**	**INFR 3830U** Distributed Systems and Networking *Prereq: INFR 3110U*	**INFR 3320U** Filmmaking *Prereq: INFR 3330U*	**INFR 3310U** Animation and Production *Prereq: INFR 3340U*
	INFR 3396U Game Development Workshop II				
F4	**BUSI 4340U** Business of Gaming *Prereq: INFR 2700U*	**INFR 4560** Law & Ethics of Game Development *Prereq: 4th year standing*	**Game Programming Minor Course or GENERAL ELECTIVE**	**INFR 4310U** Social Network Games *Prereq: INFR 3330U*	**INFR 4320U** Artificial Intelligence for Games *Prereq INFR 3330U, INFR 3110U*
W4	**Game Programming Minor Course or GENERAL ELECTIVE**	**BUSI 4995U** UOIT Edge – Capstone Study Project	**INFR 4391U** Sp. Topics *Prereq: 4th year standing*	**INFR 4350U** HCI *Prereq: INFR 3330U*	**INFR 4390U** Demo Reel *Prereq: INFR 3310*

Game Programming Minor courses are shown in RED.

Details of Proposed Game Programming Minor

To obtain a minor focused on Game Programming, students are required to take a minimum of 6 courses as specified below from the Game Development & Entrepreneurship program and the Computing Science program in the Faculty of Science.

The Bachelor of Information Technology – Game Development and Entrepreneurship degree with a minor in Game Programming requires a minimum of 18 credit hours in Game Programming courses. Students must complete five core courses and a minimum of one Game Programming elective course.

To apply for a minor in Game Programming, students are **required** to have successfully completed the following courses with an overall GPA of 3.0 with no less than a 3.0 in each of :

- INFR 2810U : Computer Architecture
- INFR 2140U : Object Oriented Programming

Students must maintain an overall GPA of 3.0 over the following 4 courses in order to maintain Game Programming Minor status.

Students are **required** to take the following:

- CSCI 2020U : Software Systems Development
- CSCI 2040U : Software Design and Analysis
- INFR 4800U : Debugging Techniques

Students must take **ONE** course from the following selection:

- CSCI 4100U : Mobile Devices
- CSCI 4160U : Interactive Media
- CSCI 4640U : Distributed Computing
- CSCI 4110U : Advanced Computer Graphics

Rationale:

The core of our Game Development & Entrepreneurship program focuses on technical programming skills in C/C++, software design methodologies, tool development and computer graphics techniques. Students have been asking for more practice in the later years of their program to hone their skill-sets and take their game development skills to the next level. Since we have a successful and well established Computing Science program at UOIT in the Faculty of Science, it simply makes sense to align with them to offer a selection of courses that will further hone students programming and software design skills.

Alignment with Computing Science:

After discussion with Jeremy Bradbury and Ken Pu (current CS Program coordinator), we came to the conclusion that a maximum of 3 courses should be included in the minor from CS. We discussed which ones these would be and decided that CSCI 2020U and CSCI 2040U are fundamental and one of the other courses in the selection (CSCI 4100U, 4160U, 4110U, 4640U) would be beneficial to students. Given the differences in the course content between CS and INFR courses, we have ensured that only the best students are able to obtain this minor and thus we would only send CS our best students who will be successful.

Number of students in the minor:

We wish to cap the number of students able to complete the minor in a given year to ten (10) students. This would ensure that only the best students are able to obtain this minor. Placement in the minor would be dealt with by looking at the overall GPA of the students and taking the top 10 who have applied and meet the requirements.

Impact on Faculty Resources:

To create this minor, only ONE course needs to be created from FBIT, namely the INFR 4800U: Debugging Techniques course. Students will have already taken two of the necessary courses (INFR 2810U and INFR 2140U) to apply for the minor. The final three (3) courses are shared with CSCI and will incur minimal resources as these are not lab-based courses and do not require consumable materials. I suggest that we share our lab spaces with CS for these courses so students in both faculties have access to the same software/hardware.

Interaction with the Game Development Workshop (GDW)

Since these are courses that would have been elective for students normally, their experience in the GDW will not be affected by the minor. The integration of the courses in the minor cannot be imposed on the CSCI courses however we will work with the individual Professors of these courses to ensure that the assignments are relevant to Game Programming.

Impact on students future careers

We believe this minor will enhance students' ability to obtain a programming related job in the Game and software industries. Their skill-sets will be focused and honed with this selection of courses and they will certainly be able to compete in the job market more effectively.