IMPROVE LIFE.

College of Engineering and Physical Sciences

School of Computer Science

Course Outline (Fall 2020)

CIS*3130 – System Modeling and Simulation

Instructor	Neil Bruce School of Computer Science Office: Reynolds 2222 Email: brucen@uoguelph.ca Office Hours: Virtual, To be determined Web: socs.uoguelph.ca/~brucen/3130/
Prerequisites	CIS*2500, STAT*2040
Calendar Description	This course examines discrete simulation based on event queues and random number generation. The topics covered include discrete-event simulation models, random number generators, generating random variates and processes, input modeling, model verification and validation. Application areas such as manufacturing, services, and computing are highlighted.
Reference Textbooks	No textbook is required, and course notes / slides will provide the most relevant coverage. Following are some recommended textbooks for additional reference. Please also see the course web page for additional resources.
Course Organization	See the course web page for details on course organization. socs.uoguelph.ca/~brucen/3130/
Learning Objectives	At the end of the course, a successful student will be able to: 1. Understand fundamental principles, ideas and techniques related to modeling and simulation of systems

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<tr><td></td><td>2. Understand appropriate methods for dealing with data, random number generation, monte carlo methods, queueing theory and many real world scenarios where these phenomena arise.</td></tr>
<tr><td>Evaluation & Feedback</td><td>
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<tr><td>Assignments (3)</td><td>40 %</td></tr>
<tr><td>Project proposal</td><td>5%</td></tr>
<tr><td>Course Project</td><td>40 %</td></tr>
<tr><td>Presentation (video)</td><td>15 %</td></tr>
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<tr><td>Grading requirements</td><td>To pass the course you require at least 50% of the total course marks.</td></tr>
<tr><td>Information Technology and electronic devices</td><td>Please exercise appropriate use of laptop computers and other electronic devices in the classroom, and refrain from use of cellular phones except in the case of urgent or extenuating circumstances.</td></tr>
<tr><td>Evaluation Guidelines</td><td>

Assignments will be graded according to the rubric provided with each assignment. There will be 3 assignments (10%, 15%, 15%) that will involve in depth practical application of theory to problems defined for each assignment.
The course project will involve identifying a system to model, making reasonable assumptions about input and output and their distributions, programming a simulation fitting the scenario and reporting on important observations. The rubric will be provided with the project description.

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<tr><td>Missed Evaluations</td><td>When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for Academic Consideration: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml</td></tr>
<tr><td>Communication with Students</td><td>Only University of Guelph e-mail accounts are to be used for communication with students or the instructor. Emails sent from other accounts may not be answered! E-mails should be written in a way that is appropriate for a professional context. Indicate your course and section, formulate your question clearly, check spelling (names AND content) and use a polite language. Read the course outline before contacting the instructor or seminar leaders, you might find the answer here.</td></tr>
<tr><td>Course</td><td></td></tr>
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Content	See the course webpage for the most up to date details concerning class schedule and announcements. The course webpage is: www.uoguelph.ca/brucen/3130/
Accessibility	The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Student Accessibility Services as soon as possible. For more information, contact SAS at 519-824-4120 ext. 56208 or email sas@uoguelph.ca or see the website: https://wellness.uoguelph.ca/accessibility/
Academic Misconduct	The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor. The Academic Misconduct Policy is detailed in the Undergraduate Calendar: https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml
Diversity and Inclusion Statement	In this course I would like to create a learning environment that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, etc.)
Land Acknowledgement	The University of Guelph is in the 'Dish With One Spoon Territory'. The Dish With One Spoon is a treaty between the Anishinaabe, Mississaugas and Haudenosaunee that bound them to share the territory and protect the land. Subsequent Indigenous Nations and peoples, Europeans and all newcomers have been invited into this treaty in the spirit of peace, friendship and respect.