

Course Addendum

Semester:	Winter 2022	Subject Code: SPO600	Section: NSA/NSB
Subject Title:	Software Portability and Optimization		
Professor:	Chris Tyler	Office: Online	
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Office Hours:			

Approved by: _____

Kathy Dumanski, Chair, School of Software Design and Data Science

Please read this addendum to the general course outline carefully. It is your guide to the course requirements and activities.

Please refer to the course outline for learning outcomes, course description and text and materials.

Please also visit sdds.senecacollege.ca for key information on courses, graduation requirements, transfer credit, and more from the School of Software Design and Data Science.

Assessment Summary

- Project Deliverables – 60%
 - Stage 1 – 15%
 - Stage 2 – 20%
 - Stage 3 – 25%
- Communication – 20%
 - Blogging – 4 marking periods (roughly monthly) x 5% each
- Labs and Quizzes – 20%
 - Lab completion – 10% - submitted by blogging about your lab results (with links)
 - Quizzes – 10% - There will be a minimum of five and a maximum of ten quizzes, one page (or online equivalent) each, marked out of 10 points. There is no opportunity to rewrite missed quizzes, but the lowest three quiz scores will not be counted.

Course Policies

- Each student is expected to sign the [Open Source Professional Option Student Agreement](#).
- The [Seneca Academic Policy](#) applies in full to this course. With respect to Section 9, [Academic Honesty](#), it is expected that code will be reused and extended within the open source context -- however, all licenses must be respected, and you must not claim authorship of work which is not your own.
- Project and lab work is submitted by blogging. Please blog frequently (at least 1-2 times per week), following the [Blog Guidelines](#).
- Release dates (Project stages) are firm. Please ensure that you release what is required on the release date / project stage due date. If your work is not complete, please release what you have completed by that date (i.e., DO NOT release late -- release incomplete instead).
- If you will be absent for a class, please make arrangements to cover the material (e.g., for in-person or synchronous classes, arrange to have another student make notes).
- If you will be absent for an extended period (multiple classes) due to illness or other causes, please contact your professor.
- Quizzes may not be announced in advance. If you miss a quiz, no make-up will be given. However, the three lowest quiz scores will be dropped, so you can miss some without impacting your mark. For students with accommodations, an alternate monthly test can be made available through the Test Centre.

Academic Policies:

<http://www.senecacollege.ca/about/policies/academics-and-student-services.html>

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These prohibitions remain in effect both during a student's enrollment at the college as well as withdrawal or graduation from Seneca.

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TENTATIVE WEEKLY SCHEDULE
Winter 2022

Week	Topic or Skill	Reading	Assessment	Weight (See note below regarding quizzes)
Week 1 Jan 9-15	Introduction to the Course / Introduction to the Problem / Computer Architecture Basics Binary Representation of Data	<i>See links on course web site</i>	Set up for the course / Lab 1	Lab: 1.4%
Week 2 Jan 16-22	Introduction to 6502 Assembly Writing and Debugging 6502 Code / Assembly Language Conventions / Using Macros Effectively	<i>See links on course web site</i>	Lab 2	Lab: 1.4% + Quizzes
Week 3 Jan 23-29	6502 Math / Jumps, Branches, and Subroutines 6502 Strings	<i>See links on course web site</i>	Lab 3	Lab: 1.4% + Quizzes
Week 4 Jan 30-Feb 5	Introduction to 64-bit Assembly (x86_64 and AArch64) / Modern Architectural Enhancements Building Code / Make and Makefiles / Autotools and Friends	<i>See links on course web site</i>	Lab 4, January blog posts	Lab: 1.4% + Quizzes + January Comm: 5%

Week 5 Feb 6-12	More 64-bit Assembly Compiler Optimizations	<i>See links on course web site</i>	Lab 5	Lab: 1.4% + Quizzes
Week 6 Feb 13-19	SIMD Inline Assembly	<i>See links on course web site</i>	Lab 6	Lab: 1.4% + Quizzes
Week 7 Feb 20-26	Using ARMv9 instructions (for SVE2) on an ARMv8 system Project Selection	<i>See links on course web site</i>	Lab 7	Lab: 1.4% + Quizzes
Study Week				
Week 8 Mar 6-12	Benchmarking and Profiling Project Stage 1	<i>See links on course web site</i>	Project Stage 1	February Comm: 5% + Quizzes + Project stage 1: 15%
Week 9 Mar 13-19	Memory System Design – Paging / Virtual Memory Project Discussion	<i>See links on course web site</i>	Blog about project work	Quizzes
Week 10 Mar 20-26	Memory – Cache / NUMA Project Discussion	<i>See links on course web site</i>	Blog about project work	Quizzes

<p>Week 11 Mar 27-Apr 2</p>	<p>Memory – Observability, Barriers</p> <p>Project Stage 2</p>	<p><i>See links on course web site</i></p>	<p>Project Stage 2, March Blog Posts</p>	<p>March Comm: 5% + Quizzes + Project Stage 2: 20%</p>
<p>Week 12 Apr 3-9</p>	<p>Atomic Operations</p> <p>Project Discussion</p>	<p><i>See links on course web site</i></p>	<p>Blog about project work</p>	<p>Quizzes</p>
<p>Week 13 Apr 10-16</p>	<p>Project Discussion</p> <p>Good Friday</p>	<p><i>See links on course web site</i></p>	<p>Blog about project work</p>	<p>Quizzes</p>
<p>Week 14 Apr 17-23</p>	<p>Future Directions in Architecture</p> <p>Project Stage 3</p>	<p><i>See links on course web site</i></p>	<p>Project Stage 3, April Blog Posts</p>	<p>April Comm: 5% + Quizzes + Project Stage 3: 25%</p>

Notes:

- Quizzes may be held at the start of any synchronous (in-person or synchronous on-line) class. They are one page in length (or equivalent online) and 20 minutes are allowed for completion.
- This course schedule is tentative and is subject to change. The current version of the course schedule is available at https://wiki.cdot.senecacollege.ca/wiki/Winter_2022_SPO600_Weekly_Schedule

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