COURSE OUTLINE: CSD235 - CAPSTONE PROJECT

Prepared: Computer Studies
Approved: Martha Irwin, Dean, Business and Information Technology

Course Code: Title	CSD235: CAPSTONE PROJECT
Program Number: Name	2095: COMPUTER PROGRAMMING
Department:	COMPUTER STUDIES
Academic Year:	2024-2025
Course Description:	A portfolio of significant experience in software development is a valuable asset for individuals seeking their first programming job. In this course, students will culminate the skills and knowledge they have obtained in this program by proposing and prototyping a substantial software project. Students may collaborate with local organizations, the college`s Applied Research Centre, or embark on a software business venture. Students will work in teams using business practices to produce deliverables and meet criteria that will be required throughout the term. Mentoring in project management and technical implementation will be provided to help teams achieve their goals. In addition to the project, students will be individually graded on reflections and assessment of their contributions.
Total Credits:	4
Hours/Week:	4
Total Hours:	56
Prerequisites:	CSD123, CSD213, CSD214
Corequisites:	There are no co-requisites for this course.
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**2095 - COMPUTER PROGRAMMING** VLO 1 Identify, analyze, develop, implement, verify and document the requirements for a computing environment. VLO 2 Contribute to the diagnostics, troubleshooting, documenting and monitoring of technical problems using appropriate methodologies and tools. VLO 3 Implement and maintain secure computing environments. VLO 4 Implement robust computing system solutions through validation testing that aligns with industry best practices. VLO 5 Communicate and collaborate with team members and stakeholders to ensure effective working relationships. VLO 6 Select and apply strategies for personal and professional development to enhance work performance. VLO 7 Apply project management principles and tools when working on projects within a computing environment. VLO 8 Adhere to ethical, legal, and regulatory requirements and/or principles in the development and management of computing solutions and systems. VLO 9 Support the analysis and definition of software system specifications based on functional and non-functional requirements.

	VLO 10 Contribute to the development, documentation, implementation, maintenance and testing of software systems by using industry standard software development methodologies based on defined specifications and existing technologies/frameworks. VLO 11 Apply one or more programming paradigms such as, object-oriented, structured or functional programming, and design principles, as well as documented requirements, to the software development process. VLO 12 Model, design, implement, and maintain basic data storage solutions. VLO 13 Contribute to the integration of network communications into software solutions by adhering to protocol standards.
Essential Employability Skills (EES) addressed in this course:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	Students are expected to be present to write all tests in class, unless otherwise specified. If a student is unable to write a test due to illness or a legitimate emergency, that student must contact the professor prior to class and provide reasoning. Should the student fail to contact the professor, the student shall receive a grade of zero on the test. If a student is not present 10 minutes after the test begins, the student will be considered absent and will not be given the privilege of writing the test. Students exhibiting academic dishonesty during a test will receive an automatic zero. Please refer to the College Academic Dishonesty Policy for further information. In order to qualify to write a missed test, the student shall have: a.) attended at least 75% of the classes to-date. b.) provide the professor an acceptable explanation for his/her absence. c.) be granted permission by the professor. NOTE: The missed test that has met the above criteria will be an end-of-semester test. Labs / assignments are due on the due date indicated by the professor. Notice by the professor will be written on the labs / assignments and verbally announced in advance, during class.

Labs and assignments that are deemed late will have a 10% reduction per academic day to a maximum of 5 academic days at 50% (excluding weekends and holidays). Example: 1 day late - 10% reduction, 2 days late, 20%, up to 50%. After 5 academic days, no late assignments and labs will be accepted. If you are going to miss a lab / assignment deadline due to circumstances beyond your control and seek an extension of time beyond the due date, you must contact your professor in advance of the deadline with a legitimate reason that is acceptable.

It is the responsibility of the student who has missed a class to contact the professor immediately to obtain the lab / assignment. Students are responsible for doing their own work. Labs / assignments that are handed in and are deemed identical or near identical in content may constitute academic dishonesty and result in a zero grade.

Students are expected to be present to write in-classroom quizzes. There are no make-up options for missed in-class quizzes.

Students have the right to learn in an environment that is distraction-free, therefore, everyone is expected to arrive on-time in class. Should lectures become distracted due to students walking in late, the professor may deny entry until the 1st break period, which can be up to 50 minutes after class starts or until that component of the lecture is complete.

Grade
Definition Grade Point Equivalent
A+ 90 - 100% 4.00
A 80 - 89%
B 70 - 79% 3.00
C 60 - 69% 2.00
D 50 - 59% 1.00
F (Fail) 49% and below 0.00

CR (Credit) Credit for diploma requirements has been awarded.
S Satisfactory achievement in field /clinical placement or non-graded subject area.
U Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR Grade not reported to Registrar`s office.
W Student has withdrawn from the course without academic penalty.

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
Personal and professional development	1.1 Contribute meaningfully to a team software project 1.2 Lead effective team meetings to achieve meaningful outcomes 1.3 Demonstrate time management skills 1.4 Navigate interpersonal team dynamics effectively 1.5 Practice self-reflection 1.6 Consult with professors, other students, business contacts, and other professionals 1.7 Present a report in a professional context
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Apply project management skills	2.1 Use an appropriate project management approaches to bring project to completion 2.2 Plan and schedule project milestones using project

	management software tools 2.3 Monitor project progress and address problems efficiently 2.4 Perform acceptance testing to ensure project meets established goals 2.5 Prepare final project documentation
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Apply programming and research skills	3.1 Analyze an existing software system, business, or computing problem 3.2 Research and evaluate existing solutions 3.3 Use industry operational and development tools to make software with a team of developers 3.4 Use established software design patterns and methodologies to produce modular, maintainable code 3.5 Create, run, and assess a suite of software tests to verify functionality

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Activities and Formative Assessments	10%
Final project evaluation	40%
Project milestones	40%
Teamwork & Self-reflective practice	10%

Date: June 16, 2024

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.