

COURSE NAME: CYB135 Programming & Database Security

Credit Value: 3
Total Course Hours: 42
Prerequisite Course(s): None
Corequisite Course(s): None

COURSE DESCRIPTION

This course introduces the fundamental principles of procedural programming using the programming language C, with an emphasis on problem-solving strategies. The course will introduce a variety of programming concepts and best practices for designing, implementing, and deploying secure programs. Using MySQL, emphasis will be placed on designing a database, while considering normalization. Students will learn how to maintain a database using basic SQL syntax, creating advanced queries, and stored procedures. Steps will be introduced to secure a database.

LAND ACKNOWLEDGEMENT

Canadore College resides on the traditional territory of the Anishinaabeg and within lands protected by the Robinson Huron Treaty of 1850. This land is occupied by the people of Nipissing First Nation since time immemorial.

PLAR INFORMATION

This course is eligible for Prior Learning Assessment and Recognition. Students are advised to discuss options with their program coordinator.

COURSE LEARNING OUTCOMES

Upon completion of this course, the student will have reliably demonstrated the ability to:

1.0 Describe Advanced Programming using C Language.

- 1.1 Explain how Procedural Programming works.
- 1.2 Discuss Problem Solving Strategies.
- 1.3 Describe how Secure Programming works.

2.0 Explain how to Design Database using MySQL.

- 2.1 Explain Basics of Using MySQL.
- 2.2 Discuss how to Design MYSQL.
- 2.3 Explain Normalization and Maintaining Database.
- 2.4 Describe Advanced Queries and Stored Procedures.
- 2.5 Describe and explain Database Security.

GENERAL EDUCATION

This is not a General Education course.

PROGRAM OUTCOMES

This course contributes to the following Ministry of Colleges and Universities approved program learning outcomes (PLO):

Cybersecurity

- 1. Develop and implement cyber security solutions to protect network systems and data.
- 3. Recommend processes and procedures for maintenance and deployment of cyber security solutions.
- 6. Analyze security risks to organizations and business processes to mitigate risk in compliance with industry standards.

ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES

This course contributes to the following Ministry of Colleges and Universities approved essential employability skills (EES) outcomes:

- 4. Apply a systematic approach to solve problems.
- 5. Use a variety of thinking skills to anticipate and solve problems.
- 11. Take responsibility for one's own actions, decisions, and consequences.

EXTERNAL COURSE ACCREDITATIONS AND CONDITIONS

There are no external accreditations or conditions identified for this course.

COURSE EVALUATION

Evaluation Item	Weight
Assignments	40
Tests	10
Quizzes	10
Labs	40

COURSE PASS GRADE

50

GRADING SYSTEM

A+:	90-100%	B+:	77-79%	C+:	65-69%	D:	50-54%	S - Satisfactory
A:	85-89%	B:	73-76%	C:	60-64%	F:	0-49%	I - Incomplete
A-:	80-84%	B-:	70-72%	D+:	55-59%			F- Repeat Course, included in GPA
								FS- Failure Supplemental
								FR- Repeat course, excluded from GPA

*For a complete chart of grades and descriptions, please see the Grading Policy.

LEARNING RESOURCES

Course Textbooks:

Recommended:

Title: Secure Coding in C
Author: Robert Seacord
Publisher: O'Reilly (Addison-Wesley)
Edition:
Print ISBN: 9780132981989
eBook ISBN:

Title: Advanced MySQL 8
Author: Eric, Shah, and Tejaswi
Publisher: Pakt Publishing
Edition:
Print ISBN: 9781788834445
eBook ISBN: 9781788834445

will be provided in class

Resources listed on the course outline support the achievement of learning outcomes, and may be used throughout the course to varying degrees depending on the instructor's teaching methodology and the nature of the resource.

Technology requirements - <https://www.canadorecollege.ca/BYOD>

The Harris Learning Library's staff can help you find resources to support your learning - www.eclibrary.ca

LEARNING ACTIVITIES

Assignments, tests, quizzes, labs

DELIVERY MODE

This course may be delivered, in whole or in part, in a number of modalities, including In-Person, Remote (synchronous and/or asynchronous), hybrid, or Hyflex, as per accreditation and/or regulatory standards where appropriate. This information is identified on the course schedule (student and faculty).

RECORDING GUIDELINES

This class may be recorded by faculty of the College. Faculty will inform students when recording of the class commences and ceases. 'Recorded' means that the audio-visual and chat portions of the class will be recorded

and then be stored on the College or vendor provider server. They will be made available to students, but only for the express and sole use of those registered in this course. If you have any questions or concerns about this recording, please contact your instructor or the College's privacy officer at privacy.officer@canadorecollege.ca. Full recording guidelines can be found at: <https://cdn.agilitycms.com/canadore-college/academic-centre-of-excellence/Canadore%20Recording%20Guidelines.pdf>

ACADEMIC POLICIES

Canadore College is committed to the highest standards of academic integrity, and expects students to adhere to these standards as part of the learning process in all environments. The College's Academic Integrity policy seeks to ensure that all students understand their rights and responsibilities in upholding academic integrity and that students receive an accurate and fair assessment of their work. Please review the Academic Integrity policy (A-18) and other academic policies found on our website: <https://www.canadorecollege.ca/about/policies>.

COLLEGE POLICIES

- Protecting human rights in support of a respectful college community

For college policies please see: <http://www.canadorecollege.ca/about-us/college-policies>.

Accessibility Learning Services for Students with Disabilities - Student Success Services

Student Success Services provides comprehensive support to students. We aim to ensure that all students have equal access to educational opportunities and can succeed in their academic journey. Our services focus on reducing and eliminating barriers related to education through individualized accommodations and support. If you are a student with a disability, we encourage you to register with Accessible Learning by completing the Student Success – Accessible Learning Services Form (https://canadorecollege-accommodate.symplicity.com/public_accommodation/).

For more detailed information about the services offered, please visit our webpage: Student Success Services - (<https://www.canadorecollege.ca/support/student-success-services>). To connect with Student Success Services email studentsuccessnow@canadorecollege.ca or call 705.474.7600 ext 5205.

FIRST PEOPLES' CENTRE:

A culturally safe environment offering CONFIDENTIAL student focused services, drop in or make an appointment to access:

- One on one counselling
- Elder in residence program
- Peer tutoring

- Peer mentorship
- Lunch & learn workshops on study skills, self-care, life skills
- Learning Resource Centre

Drop by our offices at C254 College Drive, W103 Commerce Court or call 705 474 7600 Ext. 5961 College Drive / 5647 Commerce Court.

<https://www.canadorecollege.ca/experience/indigenous-student-experience>

WAIVER OF RESPONSIBILITY

Every attempt is made to ensure the accuracy of this information as of the date of publication. The college reserves the right to modify, change, add, or delete content.

HISTORICAL COURSE OUTLINES

Students use course outlines to support their learning. Students are responsible for retaining course outlines for future use in applications for transfer of credit to other educational institutions.

ADDITIONAL DISCLAIMER NOTE

This course is a blend of practical-oriented theory and lab-based practical. This should be taught as a theory and then practiced in the lab.