

**COURSE NAME:** CIS215 Database Design II and SQL

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Credit Value: 4  
Total Course Hours: 56  
Prerequisite Course(s): CIS115  
Corequisite Course(s): None

## COURSE DESCRIPTION

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This subject continues the study of database design and SQL begun in CIS115. Students will learn the entire set of SQL statements using MySQL. Students will work in teams to prepare and implement logical and physical database schemas for a business application including all necessary constraints to protect the integrity of the data.

## LAND ACKNOWLEDGEMENT

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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, Treaty #10 in the Robinson Huron Treaty of 1850 since time immemorial.

## PLAR INFORMATION

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

## COURSE LEARNING OUTCOMES

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

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| 1.0 Identify all constraints required to maintain data integrity for a business application  | 6.0 Use SQL commands to efficiently create, edit and run SQL statements and to format SQL output  |
| 1.1  | 6.1   |
| 2.0 Work effectively as a member of a team to analyse data requirements, prepare an Entity Relationship Diagram, normalize application user views and prepare a logical database schema for a business application requiring more than 12 tables | 7.0 Use SQL's Data Manipulation Language statements of INSERT, UPDATE and DELETE to add, change and delete application data from tables                                 |
| 2.1  | 7.1   |
| 3.0 Identify use of necessary indexes, views and sequences for an application  | 8.0 Use SQL's Transaction Control Language statements of COMMIT to make database changes permanent and ROLLBACK to undo database changes                                |
| 3.1  | 8.1   |
| 4.0 Implement, maintain and retrieve data using an database for a complex business application   | 9.0 Use SQL's Data Control Language statements of GRANT and REVOKE to permit and remove access to database objects  |
| 4.1  | 9.1   |
| 5.0 Use SQL to create, modify and drop database objects including tables, views, sequences and indexes with all constraints required to maintain data and referential integrity  | 10.0 Use SQL's SELECT statement to retrieve data required by an application, including use of single row and group functions, nested queries and correlated sub-queries |
| 5.1  | 10.1  |
| 5.2  |   |

## 11.0 Create ER diagrams in 3rd normal form

### 11.1

## 12.0 Organize data into from un-normalized into 3rd normal form

### 12.1

## 13.0 Create a working relational database from un-normalized data.

### 13.1

## GENERAL EDUCATION

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This is not a General Education course.

## PROGRAM OUTCOMES

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

### Computer Programmer Analyst - Advanced Diploma

1. Identify, analyze, design, develop, implement, verify and document the requirements for a computing environment.
2. Diagnose, troubleshoot, document and monitor technical problems using appropriate methodologies and tools.
3. Analyze, design, implement and maintain secure computing environments.
4. Analyze, develop and maintain robust computing system solutions through validation testing and industry best practices.
5. Communicate and collaborate with team members and stakeholders to ensure effective working relationships.
10. Gather, analyze and define software system specifications based on functional and non-functional requirements.
11. Design, develop, document, implement, maintain and test software systems by using industry standard software development methodologies based on defined specifications and existing technologies/frameworks.
12. Select and apply object-oriented and other design concepts and principles, as well as business requirements, to the software development process.
13. Gather requirements and model, design, implement, optimize, and maintain data storage solutions.
14. Integrate network communications into software solutions by adhering to protocol standards.

## ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES

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

3. Execute mathematical operations accurately
4. Apply a systematic approach to solve problems
5. Use a variety of thinking skills to anticipate and solve problems
6. Locate, select, organize, and document information using appropriate technology and information systems.
7. Analyse, evaluate, and apply relevant information from a variety of sources.
10. Manage the use of time and other resources to complete projects.

11. Take responsibility for one's own actions, decisions, and consequences.

## EXTERNAL COURSE ACCREDITATIONS AND CONDITIONS

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

## COURSE EVALUATION

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Labs/ Assignments 40%

Group Project 15%

Test 25%

Final Assessment 20%

## PROGRAM SPECIFIC GRADING

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Per College Grading System

## GRADING SYSTEM

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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

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No textbooks have been identified for this course.

Other Resources:

All additional learning resources will be explained by the professor

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](http://www.eclibrary.ca)

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## LEARNING ACTIVITIES

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Interactive lecture

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## DELIVERY MODE

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This course may be delivered, in whole or in part, in a number of modalities, including in class, online, hybrid, in a synchronous or asynchronous manner or a combination thereof, as per accreditation and/or regulatory standards where appropriate.

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## RECORDING GUIDELINES

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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](mailto: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>

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## ACADEMIC POLICIES

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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>.

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## COLLEGE POLICIES

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- Protecting human rights in support of a respectful college community

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

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## STUDENT SUCCESS SERVICES - Your Success Matters!

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Student Success Services provides student-focused services to facilitate students' success in their studies. Staff provide support by reducing and/or removing educational-related barriers through individualized

accommodations and supports to students with disabilities.

Please visit our webpage to learn more: <https://www.canadorecollege.ca/support/student-success-services> or look for our events on social media.

To connect with Student Success Services email [studentsuccessnow@canadorecollege.ca](mailto:studentsuccessnow@canadorecollege.ca) or call 705.474.7600 ext 5205.

### **FIRST PEOPLES' CENTRE:**

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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, E101 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**

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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**

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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.