CIST-104 – Introduction to Database Management Systems (DBMS)

Technology

Effective Term & Year: Fall 2024
Course Outline Review Date: 2029-03-01

Program Area: Information Technology

Description:

In this course students will learn how to manage SQL database systems, including performing basic database administration. Students will learn how to configure a database to support different applications and to perform tasks such as creating users and database schema, applying constraints, setting up access control, assigning memory, defining storage structures and manipulating data. Since database administration does not end after the database is created, students will learn the importance of backup and recovery strategy. Students will become familiar with fundamental concepts in the field such as transnational operations, ACID property, backup and redundancy, data integrity, various database roles (database admin, database programmer, database designer), database normal forms, join operations, and how to perform queries.

Program Information:

This course is required for the first year of the Computer Information Systems Technology program.

Delivery Methods: Hybrid – On-campus (Face-to-Face) and Online

Credit Type: College of the Rockies Credits

Credits: 4

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	40
Seminar/Tutorials	
Laboratory/Studio	40
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	80

Course Requisites:

- Admission to the Computer Systems Technician program.

Flexible Assessment: Yes

Students are able to request formal recognition of their prior learning or experience outside the classroom. Challenge examination, portfolio-assisted assessment, or work-based assessment are used to identify, assess, and recognize prior skills, competencies, and knowledge to achieve course credit. Tuition fees apply, refer to Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR) or contact an education advisor for more information.

Course Transfer Credit:

For information about receiving transfer credit for courses taken at either British Columbia or Alberta institutions, please see https://www.bctransferguide.ca/ or https://transferalberta.alberta.ca . For more transfer credit information, please visit https://www.cotr.bc.ca/Transfer

All requests for course transfer credit from institutions in British Columba or elsewhere should go to the College of the Rockies Enrolment Services office.

Textbook Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Resources available digitally through the online platform.

Please see the instructor's syllabus or check COTR's online text calculator https://textbook.cotr.bc.ca/ for a complete list of the currently required textbooks.

Learning Outcomes:

Upon the successful completion of this course, students will be able to

- explain physical database design considerations that inform database configuration and management;
- manage SQL database systems, from configuring databases to performing basic administration tasks;
- generate reports and queries to retrieve and present data effectively;
- configure databases to support a variety of applications, ensuring compatibility and optimal performance;
- design forms to create a user interface;
- apply fundamental database concepts, including transnational operations, ACID property, backup and redundancy, data integrity, query, normalization, and join operations, to work proficiently in the database management domain; and
- implement basic security, backup, and security strategies to safeguard data, including tuning and troubleshooting strategies.

Course Topics:

- Database tools
- Databases and tables
- Data relationships
- Queries and tables
- Queries and manipulating data
- Microsoft SQL Server 2016
- Forms and reports functionality
- Code procedures and functions

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

Evaluation and Assessments

Assessment Type: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Assignments (x4)	40%
Participation	5%
Project	15%
Midterm Exam	20%
Final Exam	20%

Total   100%

Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

Evaluation Notes: A grade of "D" grants credit, but may not be sufficient as a prerequisite for sequential courses.

Evaluation Notes Comments:

Please see the instructor's syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments and use of electronic aids.

Exam Attendance:

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a "0" on the exam.

Academic Policies:

College of the Rockies policies related to courses can be found at https://cotr.bc.ca/about-us/college-policies/ and include the following:

- Policy 2.1.4 Course Audit
- Policy 2.4.1 Credential Framework
- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Rights, Responsibilities and Conduct
- Policy 2.4.8 Academic Performance
- Policy 2.4.9 Student Feedback and Concerns
- Policy 2.4.11 Storage of Academic Works
- Policy 2.5.3 Student Appeal
- Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR)

Course Changes:

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outline.