



ADVANCED DATABASE DEVELOPMENT

School of Comp. Technology

Course Code: COMP2138	Co-Requisites: Please see Course Related Information	Pre-Requisites: COMP1168
Applicable Program(s): T127 - Computer Programmer Analyst	Core/Elective: Core	
Prepared by:	Biljana Vucetic, Professor	
Approved by:	Albert Danison, Chair - SCT	
Approval Date:	Tuesday, August 18, 2020	
Approved for Academic Year:	2020-2021	
Contact Hours:	56.00	
Credit Hours:	4.00	

Course Description

The course introduces most important aspects of the Data Definition Language (DDL), Data Manipulation Languages (DML), and Data Control Language (DCL). This course will also introduce students to programming the Oracle database using PL/SQL. Main focus will be on building anonymous PL/SQL blocks, working with implicit and explicit cursors, create stored procedures and functions in a database and create and work with database packages. Exposure to learning how to write database triggers is also part of this course.

Essential Employability Skills

This course contributes to your program by helping you achieve the following Essential Employability Skills:

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| EES 1 | COMMUNICATION: Communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience. (T,) |
| EES 2 | COMMUNICATION: Respond to written, spoken or visual messages in a manner that ensures effective communication. (P,) |
| EES 3 | NUMERACY: Execute mathematical operations accurately. (T, P, E,) |
| EES 4 | CRITICAL THINKING & PROBLEM SOLVING: Apply a systematic approach to solve problems. (T, P, E,) |
| EES 5 | CRITICAL THINKING & PROBLEM SOLVING: Use a variety of thinking skills to anticipate and solve problems. (T, P, E,) |
| EES 6 | INFORMATION MANAGEMENT: Analyze, evaluate and apply relevant information from a variety of sources. (P, E,) |

EES 7	INFORMATION MANAGEMENT: Locate, select, organize and document information using appropriate technology and information systems. (E,)
EES 8	INTERPERSONAL: Show respect for diverse opinions, values, belief systems and contributions of others. (T,)
EES 10	PERSONAL: Manage the use of time and other resources to complete projects. (P, E,)
EES 11	PERSONAL: Take responsibility for one's own actions, decisions and consequences. (E,)

Note: "T" means elements of the skill are taught; "P" means elements of the skill are practiced; "E" means elements of the skill are evaluated; "C" means the skill culminates.

Course Learning Outcomes

When you have earned credit for this course, you will have demonstrated the ability to:

CLO 1	COMP2138 CLO1- Create queries, summary queries and subqueries.
CLO 2	COMP2138 CLO2- Perform DML (Data Manipulation Language) operations.
CLO 3	COMP2138 CLO3- Utilize data types and functions.
CLO 4	COMP2138 CLO4- Implement tables, views, indexes and sequences.
CLO 5	COMP2138 CLO5- Create server side procedures and functions with and without parameters.
CLO 6	COMP2138 CLO6- List and utilize different types of PL/SQL Exception Handlers.
CLO 7	COMP2138 CLO7- Design a package to group together related variables, cursors, constants, exceptions, procedures and functions.
CLO 8	COMP2138 CLO8-Implement database triggers (statement triggers and row triggers).

Delivery Methods/Learning Activities

The instructional methods of this course are comprised of a combination of lectures, demonstrations, hands-on exercises and take-home assignments.

Learning Resources

Required:

1. Murach's Oracle SQL and PL/SQL for Developers (2nd Edition) Author: **Joel Murach**, Publisher: Mike Murach & Associates ISBN-13: 978-1-890774-80-6
2. Blackboard: <https://bb-gbc.blackboard.com>

Recommended Resources:

1. <http://www.w3schools.com/sql/default.asp>
2. <http://www.plsql-tutorial.com/>
3. <https://www.oracle.com/database/technologies/appdev/sqldev/tutorial-sql-developer.html>

Course Related Information

PREREQUISITES: N/A

COREQUISITES: N/A

TEST and ASSIGNMENT POLICY:

- Students are required to complete lab tests, quizzes, exams as well as take-home assignments.
- See the Missed Assessments and Late Assignments Policy as well as George Brown College policies and procedures regarding withdrawals, exemptions, attendance, class assignments, academic dishonesty and supplemental examinations (refer to <http://www.georgebrown.ca/about/policies/>).
- Supplemental tasks/examinations are not a right, but a privilege granted by a Promotion Committee on an individual basis to students who have failed a course after attending the entire course and attempting the final examination. Individual professors do not make decisions regarding the policies of the Promotion Committee.
- If a student misses a test because of medical reasons and can provide a doctor's note, he/she will be given a chance to rewrite the test at a later date.
- All assignments must be submitted on the due date based on an instruction given by the professor. Late assignment, will be penalized 10% per day to a maximum of seven days, the weekend included unless the student has notified the professor (via email, phone or in person) ahead of the due date that he/she has a valid reason for a late submission.

George Brown Related Information

PROGRAM LEARNING OUTCOMES

Every Ontario college program is designed to deliver a set of specific program learning outcomes – statements that describe the knowledge, skills and attitudes students are expected to acquire and demonstrate on completion of their program. College programs are designed to deliver specific learning outcomes that relate to the unique content of a particular area of study. To review the learning outcomes for your program, please go to your program page on the George Brown College website at <https://www.georgebrown.ca/>

PROGRAM REQUIREMENTS

Students are advised to consult program coordinators regarding specific requirements for successfully completing their program. It is essential that students review all college policies, including Academic Policies available at <https://www.georgebrown.ca/policies>. Students are required to apply themselves diligently to their course of study, and to prepare class and homework assignments as given. Past student performance shows a strong relationship between regular attendance and success.

EQUITY STATEMENT

George Brown College values the diversity of our students, employees and community partners, and is committed to providing a learning environment where all people are safe and respected. Comments, behaviours or interactions that are inconsistent with our values may be a violation of the following college policies: Sexual Assault and Sexual Violence, Human Rights Discrimination and Harassment, and the Prevention of Workplace Violence and Harassment. These types of actions or comments are not acceptable and will not be tolerated. The commitment and cooperation of all students and employees is required to maintain a welcoming environment in which to learn and

work.

Support and information are available through a Human Rights Advisor at diversity@georgebrown.ca or the Sexual Violence Response Advisor at svra@georgebrown.ca

For information on the relevant policies visit <https://www.georgebrown.ca/diversity/>

ACCESSIBLE LEARNING SERVICES FOR STUDENTS

Accessible Learning Services facilitates academic supports and services for George Brown students with physical, sensory, learning, medical or mental health disabilities. Delivered in collaboration with academic departments and other service areas, these services are available to students in all programs at all campuses.

George Brown College is committed to upholding a student's right to individualized and timely accommodation that promotes dignity, independence, autonomy, equity, and inclusion for the student. In addition to our current supports, we are working to eliminate disability-related barriers by increasing access to alternate formats, planning accessible buildings and classrooms, enhancing employee training, and adopting inclusive practices in placement and on campus.

Only those involved in a student's accommodation plan shall be alerted to their registration with Accessible Learning Services, and a student's registration with Accessible Learning Services will not be identified on the student's official college transcript and/or graduation documentation. For more information, please visit the Accessible Learning Services website at <http://www.georgebrown.ca/accessible-learning-services/> or call 416-415-5000 ext. 2622 or email letstalk@georgebrown.ca

TECHNOLOGY REQUIREMENTS

As George Brown College continues to design and update courses to increase accessible, personalized, and flexible delivery methods, students will be required to have access to a computer and to the internet. There may also be additional technology-related resources required to participate in a course that are not included in the course materials fee, such as headphones, webcams, specialized software, etc. Details on these requirements can be found in the Course Section Information of the course outline for each course.

The Library Learning Commons has a limited number of devices including laptops and portable WIFI devices to support students; however, we cannot guarantee access to a device for all students.

ACADEMIC INTEGRITY

George Brown College is committed to the highest standards of academic integrity. The college's academic integrity policy seeks to ensure that all students understand their rights and responsibilities in upholding the values of academic integrity, that students receive an accurate and fair assessment of their work, and that the integrity of George Brown College's community is accessible to all students and employees. Please read the Academic Integrity Policy on our website at <https://www.georgebrown.ca/policies>

ANTI-PLAGIARISM TOOLS

Text-matching detection software assists faculty and students in preventing and detecting plagiarism. Faculty may use such software in order to check the originality of the academic work students submit in a course by comparing submitted assignments to those contained in publicly accessible internet sites, and academic journals, as well as databases of submitted papers and other sources. Faculty may not submit any student work that contains personally identifiable information through a text matching/anti-plagiarism tool or require students to do so.

Student Evaluation System

Below is a list of evaluation methods included in this course along with the course learning outcomes (CLO) and essential employability skills (EES) assessed by each. In some cases, program learning outcomes (PLO) assessed may also be indicated.

Quiz #1 (5%)

Multiples choice test that evaluates the concepts from the first chapters 2-5 of the textbook.

Validates Outcomes: CLO 1, CLO 2, CLO 3, EES 3, EES 4, EES 5, EES 10

Quiz #2 (5%)

Multiples choice test that evaluates the concepts from chapters 10, 11 and 13 of the textbook.

Validates Outcomes: CLO 4, CLO 5, EES 3, EES 4, EES 5, EES 10

Lab Test(s) (10%)

Lab Test #1 Hands-On test conducted in one of the labs where students have to demonstrate their applied skills.

Validates Outcomes: CLO 1, CLO 2, CLO 3, EES 3, EES 4, EES 5, EES 10

Lab Test(s) (10%)

Lab Test #2 Hands-On test conducted in one of the labs where students have to demonstrate their applied skills.

Validates Outcomes: CLO 3, CLO 4, CLO 5, EES 3, EES 4, EES 5, EES 10

Assignment 1 (10%)

Take home individual assignment; Code various SQL statements based on a given scenario.

Validates Outcomes: CLO 1, CLO 2, CLO 3, EES 6, EES 7, EES 10, EES 11

Assignment 2 (15%)

Take home individual assignment; Code various PL/SQL statements based on a given scenario.

Validates Outcomes: CLO 1, CLO 4, CLO 5, CLO 6, CLO 7, CLO 8, EES 6, EES 7, EES 10, EES 11

Midterm Exam (20%)

Comprehensive multiple choice and fill-in-the-blank test on chapters 2 to 8.

Validates Outcomes: CLO 1, CLO 2, CLO 3, EES 3, EES 4, EES 5, EES 10

Final Exam (25%)

Comprehensive multiple choice and fill-in-the-blank test on chapters 10, 11, 13, 15 and 16.

Validates Outcomes: CLO 1, CLO 4, CLO 5, CLO 6, CLO 7, CLO 8, EES 3, EES 4, EES 5, EES 10

Prior Learning Assessment and Recognition

Prior learning assessment and recognition (PLAR) is a process that gives students the opportunity to obtain academic credit for one or more courses in a certificate, diploma or degree based on demonstrated prior learning acquired through life experiences before enrollment in a program. More information regarding PLAR can be found on the GBC website at: <http://www.georgebrown.ca/plar/>

- This course is PLAR eligible, please see Program Coordinator/Chair for more information.

Grading System

The passing grade for this course is 50% / "D"

Final Grade	Percentage	Weight
A+	90-100	4.0
A	86-89	4.0
A-	80-85	3.7
B+	77-79	3.3
B	73-76	3.0
B-	70-72	2.7
C+	67-69	2.3
C	63-66	2.0
C-	60-62	1.7
D+	57-59	1.3
D	50-56	1.0

Refer to the Evaluation System on this outline for information on how marks are distributed. More detailed information on assessments may also be found in your Course Section document.

As per Office of the Registrar Policies:

"A" Range = GPA 4.0-Consistently exceeds (course) requirements; shows evidence of being well-organized; shows original and creative thinking and a superior grasp of subject matter.

"B" Range = GPA 3.0-Shows consistent performance and evidence of being well-organized, shows elements of original and creative thinking; has a strong grasp of subject matter

"C" Range = GPA 2.0-Applies the subject matter appropriately; comprehends the subject matter."

"D" Range = GPA 1.0-The student inconsistently applies and communicates knowledge of the subject matter

"F" Range = GPA 0.0-The student fails to apply and communicate an understanding of the subject matter.

Additional information regarding grading for this course may also be found in the "Course Related Information" section of this course outline.

Legend

Terms

- ALO: Aboriginal Learning Outcome
- Apprenticeship LO: Apprenticeship Learning Outcome
- CLO: Course Learning Outcome
- DPLO: Degree Program Learning Outcome
- EES: Essential Employability Skill
- EOP: Element of Performance
- GELO: General Education Learning Outcome
- LO: Learning Outcome
- APO: Additional Program Outcome
- PLA: Prior Learning Assessment
- PLAR: Prior Learning Assessment and Recognition
- PLO: Program Learning Outcome