HUMBER

**Faculty:**

GREEN COURSE

# Course Outline

Course Name: Database Design and Development (HTTP 5105)

Academic Year: 2019-2020

**Faculty Availability:**

**Associate Dean:**
Heather Lowry
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**Schedule Type Code:** LLB

## Land Acknowledgement

Humber College is located in Adobigok, known as "Place of the Black Alders" in the Ojibwe Anishinaabe language. It is uniquely situated along GabeKanang Ziibi, the Humber River providing an integral connection for Indigenous peoples between the northern shore of Lake Ontario and the Lake Simcoe Georgian Bay region. In Honouring the Land we are walking in the moccasin tracks of our ancestors and leaving our footprints for the future generations to come.

| | |
|---|---|
| **School** | School of Media Studies & Information Technology |
| **Program** | Web Development (11491) |
| **Course Name:** | Database Design and Development (HTTP 5105) |
| **Pre-Requisite(s)** | none |
| **Co-Requisite(s)** | none |
| **Pre-Requisite(s) for** | none |
| **Equates** | none |
| **Restrictions** | Students enrolled in the Web Development program. |
| **Credit Value** | 3 |
| **Total Course Hours** | 56 |

| **Developed By:** | **Prepared By:** | **Approved by** |
|---|---|---|
| Sean Doyle | Sean Doyle | Heather Lowry |

## Course Description

This course is designed to introduce students to database design and development, based on (SQL) Structured Query Language and two industry standard databases: MySQL and Oracle. The student will learn how to access the database to retrieve data from tables and how to apply transactions to database tables. Students will also create stored procedures on the database.

## Course Rationale

This course will help to lay down the basis of the database design. This course will provide the fundamentals of creation and accessing the database.

## Program Outcomes Emphasized in this Course

### Web Development (11491)

- Create a complete content management system using a database and scripting language.
- Develop data-driven websites for multiple platforms in accordance with best practices, industry standards in content management, security, database design, interface design, usability, accessibility and personalization.
- Test, troubleshoot and debug software created in the web projects.

## Course Learning Method(s)

- Problem Based Learning (PBL)
- Project Based Learning
- Group or Team Work

## Learning Outcomes

- Create a relational database within a client server and multi-tier systems.
- Develop a relational database using standard methods.
- Create stored procedures in Oracle and MySQL.
- Manage data from a database using standard programming practices.
- Design database output according to requirements.

## Assessment Weighting

| **Assessment** | **Weight** |
|---|---|
| Quiz | 30% |
| Test | 30% |
| In-Class Exercise | 40% |
| **Total** | **100%** |

## Modules of Study

| **Module** | **Course Learning Outcomes** | **Resources** | **Assessments** |
|---|---|---|---|
| Introduction to Database | • create a relational database within a client server and multi-tier systems.<br>• develop a relational database using standard methods. | Murach's Oracle SQL and PL/SQL: Chapters 1 and 2. | • Written Assessment Lab assignment |
| Accessing Data From Tables | • manage data from a database using standard programming practices.<br>• design database output according to requirements. | Murach's Oracle SQL and PL/SQL chapter 3. | • Written Assessment Lab assignment |

| Module | Course Learning Outcomes | Resources | Assessments |
|---|---|---|---|
| Join Operation | • create a relational database within a client server and multi-tier systems.<br>• manage data from a database using standard programming practices. | Murach's Oracle SQL and PL/SQL chapter 4. | • Written Assessment Lab assignment |
| Use of Functions | • develop a relational database using standard methods.<br>• manage data from a database using standard programming practices. | Murach's Oracle SQL and PL/SQL chapter 5. | • Written Assessment Lab assignment |
| Working with Tables, Numeric Data, NVL | • develop a relational database using standard methods.<br>• manage data from a database using standard programming practices.<br>• design database output according to requirements. | Murach's Oracle SQL and PL/SQL chapters 7 and 8. | • Written Assessment Lab assignment |
| Normalization and Different Keys | • create a relational database within a client server and multi-tier systems.<br>• develop a relational database using standard methods.<br>• manage data from a database using standard programming practices. | Murach's Oracle SQL and PL/SQL chapters 9 and 10. | • Written Assessment Lab assignment |
| Introduction to PLSQL | • create a relational database within a client server and multi-tier systems.<br>• develop a relational database using standard methods.<br>• manage data from a database using standard programming practices. | Murach's Oracle SQL and PL/SQL chapter 13. | • Written Assessment Lab assignment |
| Working on Stored Procedures | • create stored procedures in Oracle and MySQL.<br>• manage data from a database using standard programming practices. | Murach's Oracle SQL and PL/SQL chapter 15. | • Written Assessment Lab assignment |
| Introduction to MySQL | • create a relational database within a client server and multi-tier systems.<br>• develop a relational database using standard methods.<br>• manage data from a database using standard programming practices. | Murach’s MySQL 2nd Edition chapter6 and 7. | • Written Assessment Lab assignment |

| Module | Course Learning Outcomes | Resources | Assessments |
|---|---|---|---|
| DML Operation in MySQL | • create a relational database within a client server and multi-tier systems.<br>• develop a relational database using standard methods.<br>• manage data from a database using standard programming practices.<br>• design database output according to requirements. | Murach's MySQL 2nd Edition chapter 4 and 5. | • Written Assessment Lab assignment |
| Stored Procedures in MySQL | • create stored procedures in Oracle and MySQL.<br>• manage data from a database using standard programming practices.<br>• design database output according to requirements. | Murach's MySQL 2nd Edition chapters 5 and 6 | • Written Assessment Exam<br>• Written Assessment Lab assignment |

## Required Resources

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| As provided by faculty |
| Murach's Oracle SQL and PL/SQL 2nd Edition, Joel Murach, Mike Murach and Associates, ISBN # 978-1-890774-80-6 |
| Murach's MySQL 2nd Edition, Joel Murach, Mike Murach and Associates, ISBN# 978-1-890774-82-0 |

## Supplemental Resources

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| Faculty will identify additional references during course of study. If student are to be tested on this material it will be noted in class. |

## Additional Tools and Equipment

- Oracle SQL Developer instructions provided by professor.

## Essential Skills

| Section | Skills | Measurement | Details |
|---|---|---|---|
| Numeracy | Analyzing and using numerical data<br>Conceptualizing | Reinforce and measure | • Numbers are a key component in understanding how a database works. Throughout the course students will be exposed to how numbers work with and within a database.<br>• Using the core evaluation of exams, quizzes, and assignments, students will show their understanding of how numbers work with databases. |

| Section | Skills | Measurement | Details |
|---|---|---|---|
| Critical Thinking and Problem-Solving | Analysing<br>Synthesising<br>Evaluating<br>Decision-Making | Reinforce and measure | • Databases provide a framework on data to create information. In looking at the data students will have to think about how to create the key facets in the data and then create relationships among these facets. By creating databases students will need to use and develop their critical thinking skills in order to accomplish the course assignments and tests.<br>• Students will show their skills in the exams, quizzes, and assignments. |
| Information Management | Gathering and managing information<br>Selecting and using appropriate tools and technology for a task or project<br>Computer literacy<br>Internet skills | Reinforce and measure | • Databases are a key means of creating information from data. Students will learn this fact throughout the course and they are challenged to turn data into information using a database.<br>• The tests, quizzes, and assignments, both formative and summative, will show the students' progress and success with the learning outcomes. |

## Prior Learning Assessment Recognition (PLAR)

PLAR is not available for this course.

## Academic Regulations

It is the student's responsibility to be aware of the College Academic Regulations. The Academic Regulations apply to all applicants to Humber and all current students enrolled in any program or course offered by Humber, in any location. Information about academic appeals is found in the Academic Regulations.

## Accessible Learning Services

Humber strives to create a welcoming environment for all students where equity, diversity and inclusion are paramount. Accessible Learning Services facilitates equal access for students with disabilities by coordinating academic accommodations and services. Staff in Accessible Learning Services are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. If you require academic accommodations, contact:

Accessible Learning Services: http://www.humber.ca/student-life/swac/accessible-learning

North Campus: (416) 675-6622 X5090

Lakeshore Campus: (416) 675-6622 X3331

## Academic Integrity

Academic integrity is essentially honesty in all academic endeavors. Academic integrity requires that students avoid all forms of academic misconduct or dishonesty, including plagiarism, cheating on tests or exams or any misrepresentation of academic accomplishment.

## Disclaimer

While every effort is made by the professor/faculty to cover all material listed in the outline, the order, content, and/or evaluation may change in the event of special circumstances (e.g. time constraints due to inclement weather, sickness, college closure, technology/equipment problems or changes, etc.). In any such case, students will be given appropriate notification in writing, with approval from the Dean (or designate) of the School.

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