# HTTP Critical Path

# HTTP 5126 - Database Design & Development Fall 2024

**Instructor: Matthew Bebis matthew.bebis@humber.ca**

The Critical Path is the course schedule. It is an important document that lays out weekly **and/or** module objectives that you are responsible for to ensure academic success. Download and/or print out a copy of the Critical Path and refer to it regularly.

Unless discussed and specifically approved in advance by your instructor, the use of generative artificial intelligence (also known as “GAI” or “AI”, for example, ChatGPT) **is not permitted** for this course and its use will be considered academic misconduct.

## Module Breakdown

| **Week** | **Topics and Activities** | **Due Dates** | **Weight** |
| --- | --- | --- | --- |
| 1 | **Module 1: Introduction to Data Design**  **Topics:**   * Introduction to the course * Introduction to data and database core concepts   **Activities:**   * Lab 1 (5%) | Sept. 8 | 5% |
| 2 | **Module 2: Accessing Data Part 1**  **Topics:**   * Retrieving data from a database table with SQL queries * Limiting columns * Limiting rows with the WHERE clause and comparison operators * Creating Aliases for columns   **Activities:**   * Lab 2 (5%) | Sept. 15 | 5% |
| 3 | **Module 3: Accessing Data Part 2**  **Topics:**   * Removing duplicate rows with DISTINCT * Refining results with logical operators * Refining results with LIKE, BETWEEN, IN and IS NULL * Sorting the result set with ORDER BY   **Activities:**   * Lab 3 (5%) | Sept. 22 | 5% |
| 4 | **Module 4: Using Built-in Functions**  **Topics:**   * Aggregate functions MAX, MIN, COUNT, AVG, SUM, GROUP BY, HAVING   **Activities:**   * Quiz 1 (3%) * Lab 4 (6%) | Sept. 25/26  Sept. 29 | 3%  6% |
| 5 | **Module 5: Join Operations to Combine Tables**  **Topics:**   * Retrieving data from multiple tables   **Activities:**   * Lab 5 (8%) | Oct. 6 | 8% |
| 6 | **Module 6: Database Design Part 1**  **Topics:**   * Database design fundamentals * Identifying tables & assigning columns * Relationships between tables * Primary keys and foreign keys * Data types in MySQL   **Activities:**   * Lab 6 (6%) | Oct. 13 | 6% |
| 7 | **Module 7: Database Design Part 2**  **Topics:**   * CRUD functionality   **Activities:**   * Quiz 2 (3%) * Lab 7 (6%) | Oct. 16/17  Oct. 20 | 3%  6% |
|  | **READING WEEK** |  |  |
| 8 | **Module 8: Database Design Part 3**  **Topics:**   * General principles of database design * Relationship types * Constraints * Normalization * Optimizing with indices   **Activities:**   * Lab 8 (8%) | Nov. 3 | 8% |
| 9 | **Module 9: Views & Triggers**  **Topics:**   * Views * Triggers   **Activities:**   * Lab 9 (8%) | Nov. 10 | 8% |
| 10 | **Module 10: Custom Functions**  **Topics:**   * Creating custom functions * Implementing conditions & loops   **Activities:**   * Quiz 3 (3%) | Nov. 13/14 | 3% |
| 11 | **Module 11: Stored Procedures**  **Topics:**   * Creating and using stored procedures * Parameters for procedures * Cursors   **Activities:**   * Quiz 4 (4%) | Nov. 20/21 | 4% |
| 12 | **Module 12: User Management**  **Topics:**   * Providing access to your data * Passwords in MySQL * Permissions & privileges   **Activities:**   * Project Proposal (6%) | Dec. 1 | 6% |
| 13 | **Module 13: Data Management with NoSQL**  **Topics:**   * Introduction to NoSQL options * Setup and installation * Basic CRUD functionality   **Activities:**   * Lab 10 (4%) | Dec. 8 | 4% |
| 14 | **Final Project Presentations**  **Activities:**   * Database Project Presentation (5%) * Database Project (15%) | Dec. 11/12  Dec. 14 | 5%  15% |

## Summary of Graded Course Components

| **Summary** | **Weight** |
| --- | --- |
| Total for all Quizzes (x 4) | 13% |
| Total for all Lab Exercises (x 10) | 61% |
| Final Database Project Proposal Document | 6% |
| Final Database Project | 15% |
| Final Project Presentation | 5% |
| **Total** | 100% |