

HTTP Critical Path

HTTP 5126 - Database Design & Development Fall 2024

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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: <ul style="list-style-type: none"> • Introduction to the course • Introduction to data and database core concepts Activities: <ul style="list-style-type: none"> • Lab 1 (5%) 	Sept. 8	5%
2	Module 2: Accessing Data Part 1 Topics: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • Lab 2 (5%) 	Sept. 15	5%
3	Module 3: Accessing Data Part 2 Topics: <ul style="list-style-type: none"> • Removing duplicate rows with DISTINCT • Refining results with logical operators • Refining results with LIKE, BETWEEN, IN and IS NULL 	Sept. 22	5%

Week	Topics and Activities	Due Dates	Weight
	<ul style="list-style-type: none"> • Sorting the result set with ORDER BY Activities: <ul style="list-style-type: none"> • Lab 3 (5%) 		
4	Module 4: Using Built-in Functions Topics: <ul style="list-style-type: none"> • Aggregate functions MAX, MIN, COUNT, AVG, SUM, GROUP BY, HAVING Activities: <ul style="list-style-type: none"> • Quiz 1 (3%) • Lab 4 (6%) 	Sept. 25/26 Sept. 29	3% 6%
5	Module 5: Join Operations to Combine Tables Topics: <ul style="list-style-type: none"> • Retrieving data from multiple tables Activities: <ul style="list-style-type: none"> • Lab 5 (8%) 	Oct. 6	8%
6	Module 6: Database Design Part 1 Topics: <ul style="list-style-type: none"> • Database design fundamentals • Identifying tables & assigning columns • Relationships between tables • Primary keys and foreign keys • Data types in MySQL Activities: <ul style="list-style-type: none"> • Lab 6 (6%) 	Oct. 13	6%
7	Module 7: Database Design Part 2 Topics: <ul style="list-style-type: none"> • CRUD functionality Activities: <ul style="list-style-type: none"> • Quiz 2 (3%) • Lab 7 (6%) 	Oct. 16/17 Oct. 20	3% 6%
	READING WEEK		

Week	Topics and Activities	Due Dates	Weight
8	Module 8: Database Design Part 3 Topics: <ul style="list-style-type: none"> • General principles of database design • Relationship types • Constraints • Normalization • Optimizing with indices Activities: <ul style="list-style-type: none"> • Lab 8 (8%) 	Nov. 3	8%
9	Module 9: Views & Triggers Topics: <ul style="list-style-type: none"> • Views • Triggers Activities: <ul style="list-style-type: none"> • Lab 9 (8%) 	Nov. 10	8%
10	Module 10: Custom Functions Topics: <ul style="list-style-type: none"> • Creating custom functions • Implementing conditions & loops Activities: <ul style="list-style-type: none"> • Quiz 3 (3%) 	Nov. 13/14	3%
11	Module 11: Stored Procedures Topics: <ul style="list-style-type: none"> • Creating and using stored procedures • Parameters for procedures • Cursors Activities: <ul style="list-style-type: none"> • Quiz 4 (4%) 	Nov. 20/21	4%
12	Module 12: User Management Topics: <ul style="list-style-type: none"> • Providing access to your data • Passwords in MySQL • Permissions & privileges 	Dec. 1	6%

Week	Topics and Activities	Due Dates	Weight
	Activities: <ul style="list-style-type: none"> Project Proposal (6%) 		
13	Module 13: Data Management with NoSQL Topics: <ul style="list-style-type: none"> Introduction to NoSQL options Setup and installation Basic CRUD functionality Activities: <ul style="list-style-type: none"> Lab 10 (4%) 	Dec. 8	4%
14	Final Project Presentations Activities: <ul style="list-style-type: none"> 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%