CO1019 Databases and Web Applications

Credits: *20* **Convenor:** *Dr. K. Mualla* **Semester:** *2nd*

Prerequisites:	*Essential: CO1012*	*Desirable: CO1003*	
Assessment:	*Coursework: 40%*	*Three hour final exam: 60%*	
Lectures:	*30 hours*		
Surgeries:	*10 hours*	**Private Study:**	*90 hours*
Laboratories:	*20 hours*		

Subject Knowledge

Aims This module consists of three key parts. It first teaches you how the Protocol Stack operates over the network. Secondly, you will learn how to build, design, and program web pages using HTML, CSS, and JavaScript. The third part will teach you how to design, implement, maintain and query relational databases using MySQL.

Learning Outcomes Students should be able to demonstrate a knowledge of the basic techniques involved in the Protocol Stack, web development, data organization, storage, and retrieval, based on the relational database model. They should be able to implement, maintain, and query simple databases using database management system software MySQL. The students should be able to create static web pages using HTML, CSS and JavaScript. They will be able to describe and overview the key database functionalities and queries, and they will be able to illustrate software bugs in relation to web development and design.

Methods Lectures, surgeries, laboratory practical sessions together with course notes (available on Blackboard), in addition to recommended textbooks and software manuals, class and laboratory worksheets, printed solutions, and Web support.

Assessment Marked coursework, laboratory assessments, traditional written problem-based examination.

Skills

Aims To teach students scientific writing, problem solving and information handling skills.

Learning Outcomes Students will be able to: write short summaries of technical material as well as short reports describing database and web page design and development process; solve abstract and concrete problems (both routine seen, and simple unseen); and locate, access, organize and evaluate, and build upon existing information regarding database solutions. Methods Class and laboratory sessions, course notes, software manuals, class and laboratory worksheets, printed solutions, and web support.

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Assessment Marked coursework, laboratory assessments, traditional written problem-based examination.

Explanation of Prerequisites No specific knowledge is required.

Course Description The relationship between the web, network protocols, and database systems currently forms the hierarchy access model for almost every modern application. This module examines the general concepts of the Network Protocol Stack, Web Development using HTML, CSS and JavaScript, and Database Management Systems using entity relational diagrams, normalization techniques, and MySQL as a key query language.

Detailed Syllabus HTML (static webpages): Internet Technologies; The Internet Protocol Stack; HTML, HTML5; CSS, JavaScript.

Reading List

[A] Bates, *Web Programming (3rd edition); ISBN: 0470017759,* Wiley, 2006.

[A] T. Connolly and C. Begg, *Database Systems (Fourth edition); ISBN: 0321210255,* Addison-Wesley, 2005.

[A] *MySQL Reference Manual; ISBN: 0596002653*, `http://www.mysql.com/documentation/` .

[B] Deitel, Deitel and Nieto, *Internet and World Wide Web: How to Program (2nd edition); ISBN: 0131218557,* Prentice Hall, 2002.

[B] Hege Refsnes, Stle Refsnes, Kai Jim Refsnes, Jan Egil Refsnes and C. Michael Woodward, *HTML and CSS: Learn HTML and CSS with w3schools,* Wiley Publishing, Inc,2010.

Resources Course notes, text books in library, study guide, worksheets, module web pages on Blackboard, lecture rooms with fixed computer, data projector, laboratories with PCs and demonstrators, Workbench MySQL software tools, electronic coursework submission facility, surgeries with assistants, Internet.

Module Evaluation Course questionnaires, course review.