

**RARITAN VALLEY COMMUNITY COLLEGE
COMPUTER SCIENCE (CS) DEPARTMENT**

CISY-233 Relational Database & Web Applications

I. Basic Course Information

- A. Course Number and Title: CISY- 233, Relational Database & Web Applications
- B. Date of Proposal or Revision: Spring 2007
- C. Sponsoring Department: Computer Science (CS) Department
- D. Semester Credit Hours: 3
- E. Weekly Contact Hours: 4 (2 Lecture)
(2 Lab)
- F. Prerequisite: CISY 225 Web Page Development I & CIS Programming Elective
- G. Laboratory Fees: Yes

II. Catalog Description

Prerequisite: CISY 225 Web Page Development I & CIS Programming Elective.
This course is an introduction to the use of relational databases on the World Wide Web. Topics covered will be relational database design, database connectivity and manipulation. Students will work with a server-side tool to build and query databases using SQL. This course will add more power and functionality to Web sites, add some database applications like a powerful shopping cart or a fun quiz game. A major emphasis of the course is SQL and how to utilize it to build, manipulate and create output from a database. Toward the end of the course, students will have an opportunity to work with SQL to create output from a database to a web page.

III. Statement of Course Need

As more and more businesses create web pages on Internet, there is a great need for people with the technical knowledge to do interactive Web page development that interfaces with databases.

IV. Place of Course in College Curriculum

- A. *Required for following degree programs:*
 - 1. Required course for Web Page Development Certificate
 - 2. Required course for the Web Page Development Transfer Degree
 - 3. Upgrading course for multimedia professionals

4. Free elective
5. CIS Programming Elective

B. Course Transferability: It is yet to be determined how this course would transfer to New Jersey Colleges.

V. Outline of Course Content

1. Relational databases
2. Forms
3. Programming with SQL
4. Work with server side tools to build and query databases
5. Create interactive database reliant Web pages.
6. SQL
 - a. Utilize
 - b. Build
 - c. Manipulate and Create output from Databases
7. Install and configure Apache, PHP, and MySQL on both Windows and Linux.
8. Accept and process information submitted via HTML forms.
9. Authenticate users and track user preferences and data using PHP's session-handling capabilities.
10. Process web-based file uploads using the HTTP_Upload PEAR package.
11. Create your own RSS aggregator using Magpie, and process XML files in amazingly efficient fashion using SimpleXML.
12. Use both command-line and graphical MySQL clients to effectively manage your data.
13. Secure the MySQL server, creating roles and restricting access even at very granular levels.
14. Effectively integrate PHP and MySQL to create dynamic, data-driven web applications.

VI. Educational Goals and Learning Outcomes

Education Goals

At the completion of this course, the student will be able to:

1. Demonstrate proficiency in designing and developing relational databases that can be retrieved from the Internet (G.E. 1)
2. Communicate and collaborate with others creating Web Pages that are more power and add functionality to Web sites (G.E. 2)
3. Demonstrate proficiency in using the computer to create forms, JavaScript, collect, prepare and present documents that summarize and synthesis information (G.E. 2, 3)
4. Demonstrate knowledge and skills necessary to design, develop manipulate SQLs for standard Web site design (G.E. 2, 3)

5. Apply knowledge from other disciplines to develop web pages that can be used in problem solving or decision making (G.E. 4)
6. Apply knowledge of SQL programming to Web page development Should it be (G.E. 1, 3, 7).
7. Recognize the ethical issues surrounding the use of computers in creating web pages (G.E. 5)
8. Recognize the commonalities and differences in values, perspectives and behaviors of diverse people in the development of web pages (G.E. 6)

Learning Outcomes

At the conclusion of the course, students will be able to:

1. Discuss the features of well designed web sites to meet the communication needs of the client from a database point of view.
2. Describe how SQL is used in the development of web sites
3. Design and publish web pages featuring server tools to build and query interactive databases
4. Develop web pages using appropriate SQL syntax
5. Connect to remote databases to download information
6. Link web pages to other pages on the Internet
7. Interpret current copyright laws concerning information
8. Design and develop Web sites using standard Web server tools.
9. Develop more power and functionality to Web sites, by adding some database applications like a powerful shopping cart or a fun quiz game.

VII. Modes of Teaching and Learning

- Lecture/Discussion - Lecture with demonstration of software, problem solving techniques, and present computer literacy concepts.
- Laboratory – Lab time to analyze, design, develop, write, and present computer projects.

VIII. Papers, Examinations, and other Assessment Instruments

- Computer Projects – In-class and out of class assignments and projects
- Exam – Hands on software exams
- Presentations
- Other – Homework

IX. Grade Determinants

- Projects
- Presentations
- Homework
- Hands on Software Exams
- Final Exam

X. Suggested Materials

Textbooks: *Creating Database Web Applications with PHP and ASP*, by Jeanine Meyer Charles River Media; 1 edition (June 30, 2003), ISBN-10: 1584502649

AJAX and PHP: Building Responsive Web Applications by Cristian Darie, Bogdan Brinzarea, Filip Chereches-Tosa, Mihai Bucica, Publisher: Packt Publishing ISBN-10: 1904811825

Beginning PHP and MySQL 5: From Novice to Professional, Second Edition, by W. Jason Gilmore, Publisher: Apress; 2nd edition (January 23, 2006), ISBN-10: 1590595521

XI. Resources

- Computer access, RVCC2 server, Internet Browsers (e.g., Internet Explorer, Firefox, Mozilla, etc.), and PHP server.
- Software: Windows 2007, UNIX, Pipeline e-mail, Web authoring software, PowerPoint, Word Objects, PHP, AJAX, Visual BASIC.Net. These packages may change from semester to semester.

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