

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE MARIE, ON



COURSE OUTLINE

Course Title: Web DBMS

Code No.: CSD3200 Semester: 5

Program: Computer Programmer/Programmer Analyst

Author: Dennis Ochoski

Date: Sept 2002 Previous Outline Date: Sept 2001

Approved: \_\_\_\_\_  
Dean Date

Total Credits: 5 Prerequisites: CSD3030

Hours/Week: 4

**Copyright © 2001 Sault College of Applied Arts & Technology**

*Reproduction of this document by any means, in whole or in part, without the prior  
Written permission from Sault College of Applied Arts & Technology is prohibited.*

*For additional information, please contact Rick Wing, Dean, School of Trades  
& Technology, (705) 759-2554, Ext. 642.*

**WEB DBMS**  
COURSE NAME

**CSD3200**  
COURSE CODE

**I. COURSE DESCRIPTION:**

This course will broaden the student's knowledge of database implementations. The focus will be to use their previous database experiences and implement these skills in database driven web sites. A variety of mediums and technologies will be examined and used throughout the course to expose students to the alternatives that exist in Web based DBMS's.

The course covers the concepts and practical aspects of creating a web site and web database processing. It will also reacquaint students with relational database concepts, SQL, HTML and more importantly how they relate to creating a database driven web site. Students will be expected to create and manage a web server (Personal Web Server). They will be required to code and work with a scripting language, PHP(the "PHP Hypertext Preprocessor") in the creation of client-side and server-side scripts. They will also work with a variety of "add-on" technologies that allow databases to communicate with web pages such as Active Server Pages and ColdFusion .

The ultimate goal of the course is the creation and implementation of a soundly designed database that is totally integrated in a realistic and well-designed web site. The students will be expected to work together as team members in developing a fully integrated website.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

**A. Learning Outcomes:**

Upon successful completion of this course the student will demonstrate the ability to:

- 1. Learn the web based database processing environment .**
- 2. Install and manage a Web Server and administer a Web Site.**
- 3. Design and implement a Web based database using PHP and MySQL.**
- 4. Develop Server Side Scripts using PHP (as well as ASP and ColdFusion).**
- 5. Develop Client Side Scripts that interface with both ColdFusion and ASP.**
- 6. Design, code and implement a fully integrated database driven web site in the PHP/MySQL environment (if time permits, ASP and ColdFusion will be used to simulate the same environment).**

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE(Continued):**

**B. Learning Outcomes and Elements of Performance:**

**1. Learn the web based database processing environment.**

*Potential elements of the performance:*

- define and describe Web Basics such as:
  - i) Architecture of the World Wide Web
  - ii) Web Addressing
  - iii) Client / Server Architecture
- describe the difference between static and dynamic Web pages
- explore different technologies that can be used to create dynamic Web Pages that interact with a database
- explore different technologies used to create the Web site
- describe the role each server product plays in creating and maintaining an appropriate web site
- install Personal Web Server, PHP4, and MYSQL

*This learning outcome will constitute approximately 5% of the course grade (possible weighting strategy) and take approximately 1 week.*

**Resources: Text: chapter 1 and chapter 11 (pages 385, 387-88)  
Professor's handouts and lectures**

**2. Design and implement a database using MySQL Server.**

*Potential elements of the performance:*

- define and apply analysis and database design principles to create effective normalized database relations (using both Semantic Object and Entity Modelling)
- create the relations and populate them on the Server
- use SQL programming to add, modify, delete and view data from the Client

*This learning outcome will constitute approximately 15% of the course grade (possible weighting strategy) and take approximately 2 weeks.*

**Resources: Textbook: chapter 11 (pages 379-399)  
Professor's handouts, lectures, and previous course material**

**3. Incorporate Programming Components of PHP Into a Website.**

*Potential elements of the performance:*

- discuss and understand some of the Internet Protocols
- describe the role of the PHP engine and the web server
- define what is meant by interpretation and execution
- discuss the different parameters associated with variables such as: data types, operations, and naming conventions
- discuss and apply two ways of sending form information (user input)
- understand and apply the different methods that HTML forms can use to encapsulate data, such as: text fields, checkboxes, radio buttons, listboxes, hidden form fields, password fields, and Submit and Reset buttons
- discuss and apply the mechanism used to return a result based on information provided by the user
- understand and apply the following programming syntax and structures of PHP:

<i>if</i> statement	comparison operators	equality operators
logical operators	<i>switch</i> statement	include files
<i>while</i> loop	<i>do while</i> loop	<i>for</i> loop
arrays	functions	

- call functions in web pages
- pass values to and from functions
- understand the scope of variables inside and outside functions
- apply error handling for security and aesthetic purposes
- apply good coding practices
- apply debugging techniques to solve logic errors
- understand and apply the concept of “*persistence*”
- understand the limitations of HTML and HTTP and how PHP overcomes them
- apply “do it yourself” PHP requests
- understand and apply the concept of “*cookies*”
- understand the basic concept of object-oriented programming in PHP and how objects can facilitate code re-use
- manipulate objects and define new classes of objects

*This learning outcome will constitute approximately 25% of the course grade (possible weighting strategy) and take approximately 4 weeks.*

**Resources: Textbook: chapters 4-8  
Professor’s handouts and lectures**

**4. Apply File and Directory Handling Techniques.**

*Potential elements of the performance:*

- understand and be able to open and close a file
- understand and be able to read from and write to a file
- understand and be able to delete and rename a file
- understand and be able to navigate within a file
- understand and be able to open and close a directory
- understand and be able to read directory entries
- understand and be able to delete and rename a directory

*This learning outcome will constitute approximately 10% of the course grade (possible weighting strategy) and take approximately 1 week.*

**Resources: Textbook: chapter 10**  
**Professor's handouts and lectures**

**5. Combine PHP and MySQL to Create a Data-Driven Website.**

*Potential elements of the performance:*

- understand and apply PHP functions that will allow connectivity to a database
- understand and apply the various ways of retrieving data stored in a MySQL database
- limit the number of results returned from a query
- order and group results
- insert records into a database table using PHP
- delete records from a database
- update records on a database

*This learning outcome will constitute approximately 15% of the course grade (possible weighting strategy) and take approximately 3 weeks.*

**Resources: Textbook: chapters 11-13**  
**Professor's handouts and lectures**

**6. Incorporate E-Mail and Graphics Handling Components Into a Website.**

*Potential elements of the performance:*

- send both regular and sophisticated e-mails with PHP
- create and apply a custom e-mail function that can handle MIME headers and file attachments
- understand how MIME headers are used to enhance the capabilities of e-mail
- create, open, manipulate and output images with PHP
- insert records into a database table using PHP

*This learning outcome will constitute approximately 10% of the course grade (possible weighting strategy) and take approximately 1 week.*

**Resources: Textbook: chapters 15-16**  
**Professor's handouts and lectures**

**7. Develop Server Side Scripts using Active Server Pages and ColdFusion.**

*Potential elements of the performance:*

- create dynamic Web pages that retrieve and display database data using Active Server Pages and ColdFusion
- process form inputs using Active Server Pages and ColdFusion
- create a Web application using client and server-side scripts in both the Active Server Page and ColdFusion environment
- learn how to share data values among different pages in a Web application
- insert, update, and delete database records using Active Server Pages and Coldfusion
- work with more advanced HTML features such as Frames, Forms, Cascading Syle Sheets

*This learning outcome will constitute approximately 20% of the course grade (possible weighting strategy) and take approximately 4 weeks.*

**Resources: Websites as specified on page 7.**  
**Professor's handouts, and lectures**

**\*\*\*NOTE:** The topics specified above sometimes overlap several areas of skill development and are not necessarily intended to be explored in isolated learning units or in the order specified.

**III. REQUIRED RESOURCES / TEXTS / MATERIALS:**

**Textbook to be used as reference material:**

1. **“BEGINNING PHP4” by Wankyu Choi, Allan Kent, Chris Lea, Ganesh Prasad, Chris Ullman  
Wrox Press Ltd. ISBN 1861003730**

**Websites:**

1. [www.explodingnet.com/articles/latest/6](http://www.explodingnet.com/articles/latest/6)  
**Database Powered Websites: A simple explanation of the three tiered structure**
2. [www.explodingnet.com/articles/latest/7](http://www.explodingnet.com/articles/latest/7)  
**Getting Started With database Driven Websites**
3. [www.compsci.buu.ac.th/docs/website/DatabaseDrivenWebsites.html](http://www.compsci.buu.ac.th/docs/website/DatabaseDrivenWebsites.html)  
**Setting Up Database Driven Websites**
4. [www.sitepoint.com/special/1](http://www.sitepoint.com/special/1)  
**Your Guide to Building Database-Driven Websites**
5. [www.php.net/tut.php](http://www.php.net/tut.php)  
**PHP Tutorial**
6. [www.mysql.com/documentation/index.html](http://www.mysql.com/documentation/index.html)  
**MySQL Documentation**
7. [www.bath.ac.uk/students-union/impact/files/impact.pdf](http://www.bath.ac.uk/students-union/impact/files/impact.pdf)  
**Database Driven Websites with PHP and MySQL**
8. [www.aspin.com](http://www.aspin.com)  
**ASP Resource Index**
9. <http://www.htmlgoodies.com/beyond/asmdir.html>  
**ASP Tutorials**
10. <http://www.w3schools.com/asp/default.asp>  
**ASP Tutorials**
11. <http://hotwired.lycos.com/webmonkey/99/03/index1a.html>  
<http://hotwired.lycos.com/webmonkey/programming/coldfusion/>  
<http://hotwired.lycos.com/webmonkey/programming/coldfusion/tutorials/tutorial2.html>  
**Webmonkey Tutorials**
12. <http://www.developer.be/index.cfm/fuseaction/tutorialDetail/GroupID/65/>  
**Introduction to ColdFusion**
13. <http://www.docnmail.com/learn/ColdFusion.htm>  
**Free Online Courses and Tutorials**

**IV. EVALUATION METHODS:**

The mark for this course will be arrived at as follows:

**WEB DBMS**  
COURSE NAME

**CSD3200**  
COURSE CODE

Quizzes:

Quiz 1:	outcome #1	5%
Quiz 2:	outcome #2	10%
Quiz 3:	outcome #3	5%
Quiz 4:	outcomes #3 & #4	5%
Quiz 5:	outcomes #5 & #6	5%
Quiz 6:	outcome #7	10%

Assignments:

Asgn 1:	outcome #2	5%
Asgn 2:	outcome #3	5%
Asgn 3:	outcomes #3 & #4	5%
Asgn 4:	outcomes #5 & #6	5%
Asgn 5:	outcome #7	10%

Project: incorporating outcomes #2 - #6	<u>30%</u>
Total	100%

The grading scheme used will be as follows:

A+	90 - 100%	Outstanding achievement
A	80 - 89%	Excellent achievement
B	70 - 79%	Average achievement
C	60 - 69%	Satisfactory achievement
R	< 60%	Repeat the course
X	Incomplete	A temporary grade limited to special circumstances that have prevented the student from completing the objectives by the end of the semester. An X grade reverts to an R grade if not upgraded within a specified time period.
NR	No report.	Grade not reported to Registrar's office. This is used for extenuating circumstances, when it has not been possible for the faculty member to report grades.

**IV. EVALUATION METHODS (Continued):**

**ASSIGNMENT/PROJECT SPECIFIC INFORMATION**

1. Assignments/Projects will be assigned to student "assignment/project teams", each

consisting of two, three or four students.

2. It is the responsibility of the project team to clarify any system requirements with the user / professor.
3. At various intervals, the instructor will require each assignment/project team to report on the progress made on their respective assignment/project. At that time, each team member will be required to complete a Peer Evaluation Form used to "grade" each team member's contribution to the assignment/project.
4. At the completion of an assignment/project, the respective assignment/project team will present and demonstrate the functionality of their system to the user / professor.
- 5.. The grade assigned to the overall assignment/project and to each team member will be determined using two sources:
  - a) Peer Evaluation Form
  - b) Presentation of project to professor(s)
  - c) Instructor observation of classroom work

\*\* Note: When an assignment/project is presented to the professor, each team member may be required to demonstrate his/her assigned task(s). The assignment/project will receive an overall grade and each team member will receive an individual grade that may or may not be equivalent to the overall assignment/project grade or to the grades of other team members.

### **ELIGIBILITY FOR XGRADES/UPGRADING OF INCOMPLETES**

When a student's course work is incomplete or final grade is below 60%, there is the possibility of upgrading to a pass when a student meets all of the following criteria:

1. The student's attendance has been satisfactory.
2. An overall average of at least 50% has been achieved.
3. The student has not had a failing grade in all of the theory tests taken.
4. The student has made reasonable efforts to participate in class and complete assignments.

**NOTE: The opportunity for an X grade is usually reserved for those with extenuating circumstances.** The nature of the upgrading requirements will be determined by the instructor and may involve one or more of the following: completion of existing labs and assignments, completion of additional assignments, re-testing on individual parts of the course or a comprehensive test on the entire course.

### **ASSIGNMENTS**

Required format for lab assignments will be detailed by the instructor before labs are assigned.

### **ATTENDANCE:**

Absenteeism will affect a student's ability to succeed in this course. Absences due to medical or other unavoidable circumstances should be discussed with the instructor. There will be an attendance factor included in the lab evaluation.

WEB DBMS  
COURSE NAME

CSD3200  
COURSE CODE

V. SPECIAL NOTES

1. In order to pass this course the student must obtain an overall quiz average of **60%** or better, as well as, an overall assignment average of **60%** or better. A student who is not present to write a particular quiz, and does not notify the instructor beforehand of their intended absence, may be subject to a zero grade on that quiz.
2. There will be **no** supplemental or make-up quizzes/tests at the end of the semester.
3. Assignments must be submitted by the due date according to the specifications of the instructor. Late assignments will normally be given a mark of zero. Late assignments will only be marked at the discretion of the instructor in cases where there were extenuating circumstances.
4. Any assignment submissions, deemed to be copied, will result in a **zero** grade being assigned to **all** students involved in that particular incident.
5. Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor and/or the Special Needs office. Visit Room E1204 or call extension 493, 717, or 491 so that support services can be arranged for you.
6. Your instructor reserves the right to modify the course outcomes and/or the assessment process to meet the needs of the course.

VI. PRIOR LEARNING ASSESSMENT

Students who wish to apply for advanced credit in the course should consult the professor.

VII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.