

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



Sault College

**COURSE OUTLINE**

**COURSE TITLE:** Web DBMS

**CODE NO. :** CSD320 **SEMESTER:** 5

**PROGRAM:** COMPUTER PROGRAMMER/PROGRAMMER ANALYST

**AUTHOR:** Frank Turco

**DATE:** Aug, 2004 **PREVIOUS OUTLINE DATED:** Aug,2003

**APPROVED:**

	_____	_____
	<b>DEAN</b>	<b>DATE</b>

**TOTAL CREDITS:** 5

**PREREQUISITE(S):** CSD303

**HOURS/WEEK:** 4

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**WEB DBMS**

**CSD320**

**COURSE NAME**

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**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 databases.

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 (Apache). They will be required to code and work with scripting languages, PHP(the "PHP Hypertext Preprocessor") in the creation of server-side scripts and Javascript on the client-side.

If time permits, they will also work with a variety of alternative 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:**

1. Learn the web-based database environment.
2. Design and implement databases using MySQL.
3. Develop scripts using PHP.
4. Design, code and implement database driven web site in the PHP / MySQL environment.
5. Develop scripts using ASP and/or Coldfusion (if time permits).

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

**B. LEARNING OUTCOMES:**

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

***Potential elements of the performance:***

- define and describe Web Basics such as:
- Architecture of the World Wide Web
- Web Addressing
- 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 Apache, PHP4, MYSQL 4.0, and the Control Centre.

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

**2. Design and implement databases using MySQL.**

***Potential elements of the performance:***

- define and apply database analysis and design principles to create effective normalized database relations (using Entity Relationship Modelling)
- create the relations and populate them on the Server
- use SQL to create structures, add, modify, delete and view data

***This learning outcome will constitute approximately 10% of the course grade (possible weighting strategy) and take approximately 2 weeks.***

3. Develop scripts using PHP.

*Potential elements of the performance:*

- 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 structures of PHP:

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

- call functions and pass values to and from functions in web pages
- understand the scope of variables inside and outside functions
- apply error handling for security and aesthetic purposes
- apply debugging techniques to solve logic errors
- understand the limitations of HTML and HTTP and how PHP overcomes them
- 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
- work efficiently with files, directories and databases
- send e-mail via PHP
- create and apply a custom e-mail function that can handle MIME headers and file attachments

***This learning outcome will constitute approximately 60% of the course grade (possible weighting strategy) and take approximately 8 weeks.***

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4. Design, code and implement database driven web site in the PHP / MySQL environment.

***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
- view, insert, modify, delete records in a database table using PHP

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

5. Develop scripts using ASP and/or Coldfusion (if time permits).

***Potential elements of the performance:***

- create dynamic Web pages that retrieve and display database data using Active Server Pages and / or Coldfusion
- process form inputs
- create a Web application using client and server-side scripts
- learn how to share data values among different pages in a Web application
- insert, update, and delete database records

***This learning outcome will constitute approximately 10% of the course grade (possible weighting strategy) and take approximately 2 weeks.***

**III. TOPICS:**

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

**Specific Topics**

**Approximate Time**

- |  |                |
|--|----------------|
| <b>1. Learn the web-based database environment</b>   | <b>1 Week</b>  |
| <b>2. Design and implement databases using MySQL</b> | <b>2 Weeks</b> |
| <b>3. Develop scripts using PHP</b>                  | <b>8 Weeks</b> |
| <b>4. Develop web site in PHP/ MySQL</b>             | <b>3 Weeks</b> |
| <b>5. ASP and/or Coldfusion (if time permits)</b>    | <b>2 Weeks</b> |

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

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

1. "PHP and MySQL for Dynamic Web Sites" by Larry Ullman  
Peachpit Press, Visual Quickpro Series, ISBN 0-321-18648-6

**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://hotwired.lycos.com/webmonkey/99/03/index1a.html>  
Webmonkey Tutorials
11. [http://www.macromedia.com/support/coldfusion/tutorial\\_index.html](http://www.macromedia.com/support/coldfusion/tutorial_index.html)  
Cold Fusion Tutorials

**Additional Resource Materials:**

Additional Resource Material will either be given to the students or placed in the library for the student's use. Handouts, guidance and material will be provided as it relates to the individual topics. Use of research materials from alternative sources such as the Internet, Library Data Base searches and articles.

**V. EVALUATION METHODS:**

Tests and Quizzes	40 %
Assignments and Lab Work	60 %

The tentative breakdown is as follows:

2 Formal Theory Tests	15 % each
3 Quizzes (best 2 of 3)	5% each
6 Assignments	5 % each
1 Major Project (including sub tasks)	30 % each

Some minor modifications to the above percentages may be necessary.

The professor reserves the right to adjust the mark up or down 5% based on attendance, participation, leadership, creativity and whether there is an improving trend. Students must have passing grades in the tests and assignments portion to pass the entire course.

All assignments must be completed satisfactorily to complete the course. Late hand in penalties will be 5% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.

The professor reserves the right to adjust the number of tests, practical tests and quizzes based on unforeseen circumstances. The students will be given sufficient notice to any changes and the reasons thereof.

A student who is absent for 3 or more times without any valid reason or effort to resolve the problem will result in action taken.

Note: If action is to be taken, it will range from marks being deducted to a maximum of removal from the course.



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The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 - 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00

CR (Credit)	Credit for diploma requirements has been awarded.
S	Satisfactory achievement in field /clinical placement or non-graded subject area.
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

**OTHER EVALUATION CONSIDERATIONS**

In order to pass this course the student must obtain an overall quiz average of **50%** or better, as well as, an overall assignment average of **50%** or better. A student who is not present to write a particular quiz/ test, and does not notify the instructor before hand of their intended absence, may be subject to a zero grade on that quiz / test.

There will be **no** supplemental or make-up quizzes / tests at the end of the semester.

## VI. SPECIAL NOTES

### Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 493 so that support services can be arranged for you.

### Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

### Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” are subject to receiving an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

### 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.

### Course outline amendments:

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Students must complete and pass both the test and assignment portion of the course in order to pass the entire course.

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**VII. PRIOR LEARNING ASSESSMENT**

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

**VIII. 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.