# COURSE SYLLABUS

## COM242: Server-Side Web Development

## Course Description

Most large-scale websites use server-side code to dynamically display different data when needed. Generally, the data is retrieved from a database stored on a separate server and sent to the client for it to be displayed. Dynamic sites can highlight content that is more relevant based on user preferences and habits. There is a range of technologies and career options to explore and the core responsibilities can be split in many ways: Front-end developers who specialize in websites and applications, back-end developers who work with servers and databases, and full-stack developers who oversee all aspects of a project.

This course introduces students to the more advanced techniques required to build complex, modern database driven applications. It covers the server-side processing that enables database interactions in dynamic intranet and internet applications. Related topics include web application security, best practices for developing web applications, and maintaining state utilizing cookies, session variables, hidden form fields and query strings.

## General Course Information

| | |
|---|---|
| Number of Units/Weeks | 4/10 |
| #Hours Lecture/#Hours Laboratory/#Hours HW* | 40/00/80 |
| Prerequisite(s) | COM122 |
| Co-requisites (s) | N/A |
| Course Developer(s) | Leticia Rabor, MS |
| Date Approved / Last Review | September 2017/September 2017 |

* Homework

## Learning Outcomes

(CLO1) Apply server-side scripting technologies and techniques to the development of web applications including e-Commerce websites
(CLO2) Describe how a Server-Side scripting language is embedded within an HTML document
(CLO3) Utilize the MVC pattern to develop a real world web application
(CLO4) Apply basic security measures to a restricted access web application
(CLO5) Develop web applications to work and connect with a database

## Instructional Methods Employed in this Course

Lecture and reading assignments
Hands-on exercises and labs
Research
Practical application of theory and skills in authentic projects
Build on prior knowledge and experience of students to enhance richness of class activities

## Information Resources for this Course

**Textbook**

J. Murach, R. Harris (2014). PHP and MySQL (2nd Edition). Fresno, CA: Mike Murach & Associates, Inc. ISBN: 9781890774790

### Recommended Readings

L Willing, L. Thomson (2017). PHP and MySQL Web Development (5th Edition). Boston, MA: Addison-Wesley. ISBN-13: 9780321833891

D. Sklar, A. Trachtenberg (2014). PHP Cookbook: Solutions & Examples for PHP Programmers 3rd Edition. Sebastopol, CA: O'Reilly Media. ISBN-13: 978-1449363758

K. Tatroe, P. MacIntyre, R. Lerdorf (2013). Programming PHP: Creating Dynamic Web Pages 3rd Edition. Sebastopol, CA: O'Reilly Media. ISBN-13: 978-1449392772

### Web Site Readings

W3Schools. PHP5 Tutorial. Retrieved from https://www.w3schools.com/php/default.asp

W3Schools. PHP MySQL Database. Retrieved from https://www.w3schools.com/php/php_mysql_intro.asp

TutorialsPoint. PHP Tutorial. Retrieved from https://www.tutorialspoint.com/php/

## Table/Topics & Assignments

**Types of Assignments:**
**Lecture:** Considered Lecture Hours
**Classroom Discussion:** Considered Lecture Hours
**In Class Critique:** Considered Lecture Hours
**Delivering Oral Presentations:** Considered Lecture Hours
**In Class (IC) Exercise:** Considered Lecture Hours
**Reading:** Considered Homework (HW), work done outside of class.
**WebClass lesson (non-online courses):** Considered HW, work done outside of class
**Lab Work:** Considered Lab Hours
**Quiz, Midterm or Final:** Considered Lecture Hours

| Week 1 | | | | | | |
|---|---|---|---|---|---|---|
| **Type** | **Topic/Description** | **LEC Hours** | **LAB Hours** | **HW Hours** | **Point Value** | **Due** |
| LEC 1A | Introduction to Class / Setup Web Development Environment / Introduction to Web Development with PHP / How to code a PHP Application | 3 | | | | |
| IC EX 1A | In-Class Exercise | 1 | | | 5 | Week 1 |
| HW 1A | Read Chapters 1 – 2, Appendix A (98 pages). Evaluated by HW 1B | | | 7.3 | | |
| HW 1B | Review Questions, 10 questions | | | 0.7 | 10 | Week 2 |
| HW 1C | Project 1 | | | 6 | 20 | Week 3 |
| Total Week 1 | | 4 | 0 | 14 | 35 | |

| Week 2 | | | | | | |
|---|---|---|---|---|---|---|
| **Type** | **Topic/Description** | **LEC Hours** | **LAB Hours** | **HW Hours** | **Point Value** | **Due** |
| LEC 2A | Introduction to relational databases and MySQL / How to use PHP with a MySQL database / How to use the MVC pattern to organize your code | 3 | | | | |
| IC EX 2A | In-Class Exercise | 1 | | | 5 | Week 2 |
| HW 2A | Read Chapters 3 – 5 (88 pages). Evaluated by HW 2B | | | 8.8 | | |
| HW 2B | Review Questions, 10 questions | | | 0.7 | 10 | Week 3 |
| Total Week 2 | | 4 | 0 | 9.5 | 15 | |
| **Week 3** | | | | | | |
| **Type** | **Topic/Description** | **LEC Hours** | **LAB Hours** | **HW Hours** | **Point Value** | **Due** |
| LEC 3A | How to test and debug a PHP application / How to work with form data / How to code control statements | 3 | | | | |
| IC EX 3A | In-Class Exercise | 1 | | | 5 | Week 3 |
| HW 3A | Read Chapters 6 - 8 (64 pages). Evaluated by HW 3B | | | 6.4 | | |
| HW 3B | Review Questions, 10 questions | | | 0.7 | 10 | Week 4 |
| HW 3C | Project 2 | | | 6 | 20 | Week 5 |
| Total Week 3 | | 4 | 0 | 13.1 | 35 | |
| **Week 4** | | | | | | |
| **Type** | **Topic/Description** | **LEC Hours** | **LAB Hours** | **HW Hours** | **Point Value** | **Due** |
| LEC 4A | How to work with strings and numbers / How to work with dates / How to create and use arrays | 3 | | | | |
| IC EX 4A | In-Class Exercise | 1 | | | 5 | Week 4 |
| HW 4A | Read Chapters 9 - 11 (80 pages). Evaluated by HW 4B | | | 8 | | |
| HW 4B | Review Questions, 10 questions | | | 0.7 | 10 | Week 5 |
| Total Week 4 | | 4 | 0 | 8.7 | 15 | |
| **Week 5** | | | | | | |
| **Type** | **Topic/Description** | **LEC Hours** | **LAB Hours** | **HW Hours** | **Point Value** | **Due** |
| LEC 5A | How to work with cookies and sessions | 2 | | | | |
| IC EX 5A | In-Class Exercise | 1 | | | 5 | Week 5 |
| EXAM 5A | Midterm Chapters 1 - 11 | 1 | | | 150 | Week 5 |
| HW 5A | Read Chapters 12 (24 pages). Evaluated by HW 5B | | | 2.4 | | |
| HW 5B | Review Questions, 10 questions | | | 0.7 | 10 | Week 6 |
| HW 5C | Project 3 | | | 6 | 20 | Week 7 |
| Total Week 5 | | 4 | 0 | 9.1 | 185 | |
| **Week 6** | | | | | | |
| | | **LEC** | **LAB** | **HW** | **Point** | |

| Type | Topic/Description | Hours | Hours | Hours | Value | Due |
|---|---|---|---|---|---|---|
| LEC 6A | How to create and use functions / How to create and use objects / How to use regular expressions, handle exceptions, and validate data | 3 | | | | |
| IC EX 6A | In-Class Exercise | 1 | | | 5 | Week 6 |
| HW 6A | Read Chapters 13 - 15 (116 pages). Evaluated by HW 6B | | | 11.6 | | |
| HW 6B | Review Questions, 10 questions | | | 0.7 | 10 | Week 7 |
| Total Week 6 | | 4 | 0 | 12.3 | 15 | |

**Week 7**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 7A | How to design a database / How to use SQL to create a MySQL database / How to use SQL to work with a MySQL database | 3 | | | | |
| IC EX 7A | In-Class Exercise | 1 | | | 5 | Week 7 |
| HW 7A | Read Chapters 16 - 18 (102 pages). Evaluated by HW 7B | | | 10.2 | | |
| HW 7B | Review Questions, 10 questions | | | 0.7 | 10 | Week 8 |
| HW 7C | Final Project | | | 20 | 100 | Week 10 |
| Total Week 7 | | 4 | 0 | 30.9 | 115 | |

**Week 8**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 8A | Professional PHP for working with MySQL / A database-driven website / How to create secure websites | 3 | | | | |
| IC EX 8A | In-Class Exercise | 1 | | | 5 | Week 8 |
| HW 8A | Read Chapters 19 - 21 (94 pages). Evaluated by HW 8B | | | 9.4 | | |
| HW 8B | Review Questions, 10 questions | | | 0.7 | 10 | Week 9 |
| Total Week 8 | | 4 | 0 | 10.1 | 15 | |

**Week 9**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|
| LEC 9A | How to send email and access other websites / How to work with files, uploads, and images | 3 | | | | |
| IC EX 9A | In-Class Exercise | 1 | | | 5 | Week 9 |
| HW 8A | Read Chapters 22 - 23 (64 pages). Evaluated by HW 8B | | | 6.4 | | |
| HW 8B | Review Questions, 10 questions | | | 0.7 | 10 | Week 10 |
| Total Week 9 | | 4 | 0 | 7.1 | 15 | |

**Week 10**

| Type | Topic/Description | LEC Hours | LAB Hours | HW Hours | Point Value | Due |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| LEC 10A | An e-Commerce website | 2 | | | | |
| EXAM 10A | Final exam | 1 | | | 150 | Week 10 |
| EXAM 10B | Final Project Due (CLO1, CLO2, CLO3, CLO4, CLO5) | 1 | | | | Week 10 |
| Total Week 10 | | 4 | 0 | 0 | 150 | |

## Course Hours Summary

| Week | Topic | LEC Hours | LAB Hours | HW Hours |
|---|---|---|---|---|
| 1 | Introduction to Class / Setup Web Development Environment / Introduction to Web Development with PHP / How to code a PHP Application | 4 | 0 | 14 |
| 2 | Introduction to relational databases and MySQL / How to use PHP with a MySQL database / How to use the MVC pattern to organize your code | 4 | 0 | 9.5 |
| 3 | How to test and debug a PHP application / How to work with form data / How to code control statements | 4 | 0 | 13.1 |
| 4 | How to work with strings and numbers / How to work with dates / How to create and use arrays | 4 | 0 | 8.7 |
| 5 | How to work with cookies and sessions, Midterm | 4 | 0 | 9.1 |
| 6 | How to create and use functions / How to create and use objects / How to use regular expressions, handle exceptions, and validate data | 4 | 0 | 12.3 |
| 7 | How to design a database / How to use SQL to create a MySQL database / How to use SQL to work with a MySQL database | 4 | 0 | 30.9 |
| 8 | Professional PHP for working with MySQL / A database-driven website / How to create secure websites | 4 | 0 | 10.1 |
| 9 | How to send email and access other websites / How to work with files, uploads, and images | 4 | 0 | 7.1 |
| 10 | An e-Commerce website, Final | 4 | 0 | 0 |
| Total | | 40 | 0 | 114.80 |

## Table/Point Breakdown

| Assignment Type | Possible Points | Percentage of Grade |
|---|---|---|

| | | |
|---|---|---|
| Review Questions (9 total at 10 points) | 90 | 9% |

| | | |
|---|---|---|
| Graded homework (3 projects at 50 points) | 300 | 30% |
| Midterm | 150 | 15% |
| Final | 150 | 15% |
| Final Project | 265 | 26.5% |
| In-Class Exercises (9 total at 5 points) | 45 | 4.5% |
| Total | 1000 | 100% |

## Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

**Coleman University Grade Assignment Policy:**

| Percent | Letter Grade | Grade Points |
|---|---|---|
| 94-100 | A | 4 |
| 90-93 | A- | 3.67 |
| 87-89 | B+ | 3.33 |
| 84-86 | B | 3 |
| 80-83 | B- | 2.67 |
| 77-79 | C+ | 2.33 |
| 74-76 | C | 2 |
| 70-73 | C- | 1.67 |
| 67-69 | D+ | 1.33 |
| 64-66 | D | 1 |
| 60-63 | D- | 0.67 |
| N/A | INC | 0 |
| N/A | W | 0 |
| 60 or above | CR | 0 |
| 59 or below | NC | 0 |
| 70 or above | PASS | 0 |

## Requirements

**Assignments:** All assignments (including projects, lab work, quizzes and exams) must be completed as scheduled. The following will apply to late assignments:

1-24 hours after due date = 20% off point value

25-48 hours after due date = 60% off point value
49+ hours after due date = No points given

If an assignment equals less than 5 points, no points will be given for late work. If there are extenuating circumstances, the student must submit a written explanation to the department Senior Instructor. Upon evaluation, points will be given according to the Senior Instructor's discretion.

## Coleman University Policy on Academic Dishonesty:

Academic dishonesty is cause for dismissal from Coleman University. Presenting another person's ideas, methods, course work, or test answers with the intention that they be taken as one's own is theft of a special kind. It defrauds the originator of the work, the institution, its graduates, its students, and its future students.

The student has full responsibility for the authenticity of all academic work and examinations submitted. A student who appears to have violated this policy must submit to a hearing with the reporting instructor and the associate dean. If it is determined that a violation occurred, the matter will be referred to an Officer of the University with recommendations for an appropriate penalty. The student may be dismissed, suspended, or given another penalty.

Coleman University employs the plagiarism software known as Turnitin. Students are expected to use this tool in an appropriate manner with the sole purpose to support their own academic endeavors at Coleman University. Turnitin account information can not be shared with anyone. Contact your instructor if you have any questions about plagiarism related issues.

## Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students' instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures.