University of La Verne

COMPUTER SCIENCE & COMPUTER ENGINEERING PROGRAM

Central Campus, Spring 2022

CMPS 320 INTERNET APPS DEVELOPMENT - 1509

COURSE INFORMATION:

Units:	4.0 Credit Hours
Pre-Req.:	CMPS 218 or CMPS 378
Schedule Types:	Lecture/Seminar
Requirements:	**Core** Requirements for the Internet Programming concentration. **Core** Requirements for the Engineering of E-commerce concentration. Computer Science B.S. Elective
Attributes:	UVLL Lifelong Learning.
Class Location:	Synchronous Zoom online meetings
Course Time:	Lecture/Seminar: Thursday 6:50 – 10:00 p.m.

INSTRUCTOR INFORMATION:

Instructor:	Professor Jozef Goetz Ph.D.
Office:	Zoom
E-mail:	JGoetz@laverne.edu
Phone:	(909) 448-4663
Office Hours:	M: 3:30 – 5:30 p.m. on Zoom/WebEx by appointment at https://ulvadvising.as.me/jgoetz.

COURSE DESCRIPTION:

Covers building Data-Driven Web applications, Customized, Secure, Content Management System using PHP and MySQL, Web Servers, Linux Environment, Structured Query Language (SQL), MySQL, creating a database, PHP basics, Programming with PHP, connecting to MySQL with PHP, form processing, regular expressions, creating dynamic Web sites and MySQL Administration.

PHP (Personal Home Page) is a powerful tool for making **dynamic** and **interactive** Web pages. In this course you will learn how to use **PHP** to build **interactive** database-driven web sites. PHP is the **most popular** and **used** server-side language on the Web, **78.1% (Feb 2022)** of all the websites (including Facebook, Twitter, WordPress and Wikipedia), compared to **8.1**% for **ASP.NET**, **3.8%** for **Java** and **1.4%** for **Python**. It is open-source (**free**) and runs on several operating systems including Windows, UNIX/Linux and Mac OS X. A primary **benefit** of server-side programming is its ability to **interact with databases**. By investing in **PHP web development** you can develop dynamic websites within your **budget**. This course is **focused** on website development, with an emphasis on Web-based programming using open source software such as PHP and a MySQL database (the **world's most popular** open source database). **Tools**: Apache, MySQL, XAMPP, modern **PHP editors** such as **VSCode**, VS Studio, Web Developer Add-ons for Mozilla Firefox and modern browsers.

Topics include: LINUX, Web Servers, Structured Query Language (SQL), MySQL database, Creating a Database, Relational Database Design, PHP Basics, Structured PHP Programming, Connecting to MySQL with PHP, Form Processing, Creating Dynamic Web Sites, Creating an Extensible Framework including user registration with the administration role.

COURSE OBJECTIVES:

a. Specific outcomes of instruction:

1. Install and configure all-in-one (Apache, PHP, MySQL) on Windows, possible on LINUX.
2. Demonstrate an understanding of the server environment and architecture of **data-driven Web applications**.
3. Use **Structured Query Language (SQL)** to retrieve data from and manipulate data in a database.
4. Create and access MySQL databases through PHP scripting.

5. Demonstrate an understanding of the basic **principles, concepts, constructs** of the server-side programming language PHP, which one can use to build dynamic web pages.
6. Use PHP to create **web-based forms** for adding new entries to, and modifying existing information in a MySQL database on the fly.
7. Explore the basic techniques of using PHP to **retrieve information from a database** and display it on the Web in real time.
8. Build PHP dynamic websites that **interact with a MySQL database** using a **low-code application framework**.
9. Demonstrate analytical and **problem-solving skills** by applying the following steps: problem definition, analysis, decision making, coding, testing and publishing web sites using cutting-edge tools.
10. Demonstrate a **secured, role-based access, database driven website**.
11. Use tools: **Apache, MySQL, XAMPP**, modern **PHP editors** such as **VSCode**, VS Studio, Web Developer Add-ons for Mozilla Firefox and modern browsers.

b. Outcomes addressed by the course:

Course Contribution	Student Learning Outcomes
	1. Ability to **analyze** a complex computing problem and to **apply** principles of computing and other relevant disciplines to identify solutions (**AA**).
*	2. Ability to **design, implement, and evaluate** a computing-based solution to meet a given set of computing requirements in the context of the program's discipline (**DIE**).
*	3. Ability to **communicate effectively** in a variety of professional context (**CE**).
	4. Ability to recognize professional responsibilities and make informed judgment in computing practice based on **legal** and **ethical** principles (**LE**).
	5. Ability to function effectively as a member or **leader** of a **team** engaged in activities appropriate to program's discipline (**LT**).
*	6. Ability to **apply** computer science **theory** and software **development** fundamentals to produce computing-based solutions (**ATD**).
	7. Ability to apply **security principles** and practices to maintain operations in the presence of **risks** and **threats (SPRT)**.

📖 **REQUIRED TEXT:**

[1] *PHP & MySQL Novice to Ninja*, **6th edition** by Kevin Yank, Tom Butler, SitePoint Pty. Ltd., November 2017, ISBN-13: 978-0994346988, ISBN-10: 0994346980.

> **Kevin** Yank a world-renowned leader in web development. The book is a hands-on guide that will help you **build your first database driven website**. You'll learn how to use PHP (used on **20 million sites worldwide**) to build **your own working content management system (CMS) using entirely free software**. The book also teaches **you best practices** in database design **using MySQL, and covers all the latest technologies**.
>
> **Tom** Butler is a web developer, a Ph.D. student researching **software best practices**, and university lecturer from the UK with an interest in programming best practices, separation of concerns and a **"less is more" approach to code**.

RECOMMENDED:

[2] *Internet & World Wide Web: How to Program*, 5/E by Harvey & Paul Deitel & Associates, Prentice Hall, 2012, ISBN-10: 0132151006 • ISBN-13: 9780132151009.

[3] Terry Felke-Morris, *Web Development & Design Foundations with HTML* 5 **9/E**, Addison Wesley Higher Education - Pearson, 2019, Print ISBN-10: 0134801148, Print ISBN-13: 978-0134801148.

✍ EVALUATION AND GRADING:

There will be lab and quiz assignments, projects, midterm and final exams. The course grade will be calculated as follows:

Lab, project assignments	**45%**
Midterm	**25%**
Project Presentation	**05%**
Final project / exam	**25%**
TOTAL	**100%**

Final course grades will be assigned as follows:

94 – 100 = **A**	90 – 93 = **A-**	87 – 89 = **B+**
84 – 86 = **B**	80 – 83 = **B-**	77 – 79 = **C+**
74 – 76 = **C**	70 – 73 = **C-**	67 – 69 = **D+**
64 – 66 = **D**	0 - 63 = **F**	

✍NATURE OF ACTIVITES IN THE CLASS

1. 👍 **Time spend outside of class:**

In order to gain genuine knowledge and skills you should know that for every **one credit hour** in which you enroll, you need to spend **approximately two to three hours** outside of class **studying** and **working** on **assignments** for the course. So, students should plan to work **at least 6 - 12 hours** per week outside of class. You need to be aware that approximately **33.4%** of your learning will take place in class with the remaining **66.6%** at home.

2. ☺**Collaboration:**

One of the goals **of studying at the university is to learn how to learn. Learning is a long life process. One of the** computer-science educational methods is an **Extreme Learning** method. Extreme Learning integrates **problem-based learning, pairing learning, collaborative learning** practices to help students **gain more hands-on** experience and **in-depth knowledge** on specific topics. **Collaborative** learning in pairs allows **students to open interaction, educate each other** and **share ideas, knowledge** and **experience.**

Guidelines:

a. You should use the **Extreme Learning** method by giving each other technical support, help understand the assignment and brainstorm general solution but each student must submit **your own detailed project solution.**
b. Each member of the group project should be able to explain any part of the submission, and **not just be able to explain "his or her" part.**

3. 🔔 👍**Attendance and Participation:**

Required and verified. Attendance and class participation are extremely important in this course. You should **notify the instructor in advance of your absence** from the scheduled course meeting. **It is essential** that you **attend all lectures and labs to succeed in the course.** Regardless of excuse, absences in excess of **three week classes** will result in the automatic exclusion of the student from that class and you will receive a **grade of F.** If you are absent from class, it is your responsibility *to make-up* any missed classes and check on announcements made while you were absent. **It is essential that you attend all lectures and labs to succeed in the course.**

You have to **read** corresponding sections in the **textbook,** which will be covered at the **next** class meeting. In addition to that, **after** each lecture/lab session you should study sections in the **textbook one more time** and **run all corresponding programs.**

4. 🔔 **Timeliness:**

You are expected to be in your seat and ready to begin class promptly at the start of each class. **Don't leave the class before class ends.** When students do that, it **negatively affects** the **whole class.** It is **distracting** and **rude, and sends a message** that the **material is easy, which is not true.** Schedule your day such that you may manage contingencies (such traffic, doctor appointments, etc.) when they occur. The instructor maintains the discretion to mark you absent for all or part of the class in the event you fail to be timely and prompt.

5. ☺ **Class Contribution:**

Class Contribution in the form of presentation your final project, **comments** that relate to material in the text and **answering a question** asked by the professor or another student counts for **extra points** of your grade in this course.

6. ✍**Lab, home and project assignments**:

Several lab and project assignments will be given over the course of the semester. An electronic version of the project assignments can be downloaded from the course's website. All assignments will be graded on a scale from 0 to 20 after presenting the assignments to the instructor. Expect one to two quick questions to show your understanding. You will receive a **score of zero** if **falsified input/output** that doesn't much the source code or submissions that are plagiarized or that violate the collaboration guidelines.

The assignments (**projects**) will require you to **design, code**, and **test** programs. You will need to turn in your projects according to the description found in **1_Project Submittals.doc** at **http://classes.jgspectrum.com/classes/320_S22/Guidelines/.** Please do not attempt to **turn in any lab assignment by email. No credit will be given for such work.** Each project assignment will be posted on **OneDrive** under **320_Internet_Apps_Development/S22_320_YourName/PROJ_ch# or ASS#**. The **PROJ_ch#** directory should contain only **project word document** and **project directory** with all source files for the current chapter project.

You must turn in:

1. A flowchart, pseudocode or diagram if you are asked – see **DiagramExamples.doc.**
2. A well-commented source code with a hard copy.
3. A sample of the screenshots of **input** and **output data** for the executing program. A sample is at least **four (4) sets of sample inputs (test cases) and results** including **boundaries** (using the extremes of the input domain, e.g. maximum, minimum, just inside/outside boundaries**)** and **each branch** of each control structure (code coverage)**.**
4. Screenshots of all source code and results.
5. You will receive a **score of zero** if **falsified input/output** that doesn't match the source code or submissions that are plagiarized or that violate the collaboration guidelines.

Class and **project assignments** are the **key** to your **success**. Don't expect to learn or have a good grade if you miss classes and/or home assignments. You will **build** your **knowledge** and **skills based** on the **previous classes** and **project assignments**. You will need to **create** and submit the **final** project of your choice. At the end of the semester you will present your final project to the class.

If the program is **not** fully functional, please include a **readme.txt** file that describes what does not work. All documents must be submitted along with **sample input** and **output data**. Your work must be **saved** on OneDrive (an individual link will be emailed by your professor). You should be **ready to show** project solution to your **professor** at the very **beginning** of class**.** Please check the **Assignment.doc** every time for all assignment specifications. The **Assignment.doc** serves as a **staring point** to any assignment solution.

7. ☻ **Make-up and late assignments**.

No credit will be given for assignments turned in after the due day specified in Assignment.doc. Assignments MUST be submitted **before class begins** on the due date**. No-makeup assignments are allowed. Do not get left behind**. Unless extraordinary circumstances can be documented, no assignments will be accepted after the beginning of class on the day the assignment is due. **No assignments will be accepted after they have been handed back or reviewed in class.**

8. **Midterm and Final Exams:**

There will be two exams to complete the course work and obtain a grade for the course. **There will be no make-ups for the midterm and final examinations**. If you are absent from a **midterm** and have a **valid excuse**—an illness, a death in your family, injury or another equally compelling reason—the weight of your final will be increased by the weight of the midterm. You must provide **adequate** and **verifiable** documentation. Without a valid excuse, you will receive a **zero score for** the **midterm** and the final's weight will remain unchanged. A missed **final** will be dealt with according to University regulations on incompletes and withdrawals. Midterm and final **exams** will cover specified chapters.

9. **Course material:**

All handouts, my syllabus, guidelines, lecture notes, links and assignments will be posted at http://classes.jgspectrum.com/. Click the top menu item Classes you will see a folder labeled **CMPS 320: Internet Apps Development**, and you will find all **CMPS 320** documents there. You may copy them to your computer.

10. Email Policy:

I usually reply to emails that require a fast answer within 24-36 hours on weekdays. I will not reply to email messages that are unclear or disrespectful. Please include your **class name** and **section** in the **subject field** and a **salutation** (e.g. Dear Professor Goetz), so that it is clear that the message is not junk mail and deleted. **Students must check their e-mail messages on a daily basis. I will only use your Laverne e-mail address.**

11. **ZOOM OR WEBEX ETIQUETTE & TIPS**

Face to face online: This teaching modality expects students to be highly motivated and disciplined.

1. I ask you the **webcam** be continuously **on** for attendance purpose.
2. **Mute yourself** to avoid background noises that can disrupt the session, or to avoid embarrassing "hot mic" moments.
3. Identify the icon gesture to **"raise hand" digitally**. Don't assume you can unmute yourself to speak unless you have been given permission by the instructor verbally or in writing (in the syllabus).
4. **Speak only if prompted** or **appropriate**.
5. **Keep your focus on** the **camera and maintain eye contact on the screen** - this shows you are **attentive** and **engaged**.
6. **Limit facial expressions** that give away negative reactions.
7. ***Electronic Devices:***
   a. **You need to get into mood of thinking and studying, not into a mood of texting or checking your email.** So, b*efore class begins*, **turn off cell phones**. The **cell phone vibrating** or a **student texting** can be **very distracting to those around the student,** including **the faculty.** Please don't use **cell phones, e-mails, keyboards, browsers** etc. **during lectures** unless the instructor asks you. **Your desktop/laptop** is to be **used only** for the purpose of lab exercises, taking notes and your **tablet/phone** for reading the textbook. **No recording devices** are allowed.
   b. **Note:** Students **who use their mobile phones** during class lectures tend to write down less information, **recall less information**, and **perform worse** on a multiple-choice test than those students who abstain from using their mobile phones during class (p.251). **Reference**: Kuznekoff. J. H. and Titsworth, S. (2013). The impact of mobile phone usage on student learning. *Communication Education, 62*(3), 233-252.
8. **Classroom Behavior:**
   a. Everyone is expected to maintain a **courteous** and **respectful manner during lecture** or **student activities. Do not sleep, text, chat with your neighbors**, or work on assignments for other classes.

b. **No clicking keyboard while lecturing**. **Please don't leave the class meeting during lectures.** All the above activities are **very disruptive** to others in class. Students who do not demonstrate appropriate classroom behavior will be asked to leave and receive an absence.
c. **Patience** and **attention** to detail are important to succeed in programming in PHP/MySQL.

9. **Requirements:**
   a. Every time students should **save your work in CMPS 320 directory on your desktop/laptop** and to your cloud drive (OneDrive or Google drive or Dropbox) or your email in the case **your desktop/laptop crashes.**

Patience and **attention** to detail are important to succeed in Apps Development.

Good luck in your course!

12. Tentative schedule (subject to change):

Date	Week No.	Topic	Reading Chapter
Feb 3	**1**	**Syllabus** review. **Installation: Apache, MySQL, PHP in XAMPP** on Window. Testing. Review. **Introducing PHP**: Basic Syntax and Statements, Variables, Operators, and Comments Lab Exercises	[1]ch1, 2 [2]ch19
Feb 10	**2**	**PHP**: Arrays, User Interaction and Forms Lab Exercises	[1]ch2, [2]ch19
Feb 17	**3**	**Introducing MySQL** Lab Exercises	[1]ch3, [2]ch18
Feb 24	**4**	**Publishing MySQL Data on the Web** Lab Exercises	[1]ch4, [2]ch18
March 3	**5**	**PHP: Form Processing and Reading from a Database** Lab Exercises	[2]ch19.8 – 19.9
March 10	**6**	**Relational Database Design** **Dynamic Content** Lab Exercises	[1]ch5 [2]ch19.11
March 17	**7**	**Structured PHP Programming** Lab Exercises	[1]ch6
March 24	**8**	**Midterm:** **Structured PHP Programming**	[1]ch6
03/28 - 04/03		**Spring Break**	
April 7	**9**	**Improving the Insert and Update Functions** Lab Exercises	[1]ch7
April 14	**10**	**Object and Classes** Lab Exercises	[1]ch8
April 21	**11**	**Creating an Extensible Framework** Lab Exercises	[1]ch9

April 28	**12**	**Creating an Extensible Framework** Lab Exercises	[1]ch9
May 5	**13**	**Allowing Users to Register** **Cookies, Sessions, and Access** Lab Exercises	[1]ch10 [1]ch11
May 12	**14**	**Cookies, Sessions, and Access** **Relationships** Lab Exercises	[1]ch11 [1]ch13
May 19	**15**	**Relationships** Lab Exercises	[1]ch13
May 26	**16**	**Final: Thursday 6:50 pm**	above chapters

13. ☝PLAGIARISM POLICY:

Students are encouraged to collaborate, discuss and debate course concepts. It is all right to ask someone else about how to solve a problem, but **it is not all right to copy somebody's code or give a code**. Any cases of someone **turning in work that is not originally theirs** will be dealt with by **assigning zeros to both parties involved.** Each student is responsible for performing academic tasks in such a way that **honesty** is not in question**.**

There is a "zero tolerance" approach to academic dishonesty. Appropriate disciplinary action may include, but is not limited to **giving student an F** on the assignment/project/quiz/exam and/or in the course and/or recommending expulsion. The dean may place on probation, suspend, or expel any student who violates the academic honesty policy. (See ULV catalog for details).

14. ☝SOCIAL JUSTICE AT LA VERNE:

The Social Justice Incident Report Form is available to any University of La Verne community member wishing to report an incident of social injustice or discrimination (these may be acts that promote hate, fear, intimidation, unfair treatment, or oppression against an individual or a group). **Please note that reports can be submitted anonymously. Prior to submitting a social justice form, consider** if the reason is academic (classroom related) or something beyond that as all classroom related issues should be taken up with the Chair of the Department. The social justice incident/issue may be a non-emergency or emergency incident and can be **reported to an agency** (e.g. 911, La Verne Police Department, or University of La Verne Campus Safety Office). More information and the **online reporting forms** can be found on the web page of the Office of Diversity and Inclusivity or using the link below: https://cm.maxient.com/reportingform.php?UnivofLaVerne&layout_id=25.

15. ☝REMOTE COURSE PRIVACY:

It is an invasion of privacy and a violation of the course policies for anyone to **record and/or distribute** another class participant's photographs, videos, screenshot saves, or any other method for capturing an image or audio, moving or still, with or without sound, without the participant's written consent. This policy does not apply to the University's or professor's recording of the synchronous portion of the course.

16. ☝ INCLUSION:

The act of creating environments in which any individual or group can be and feel welcomed, respected, supported, and valued to fully participate and bring their full, authentic selves to work. An inclusive and welcoming climate embraces differences and offers respect in the words/actions/thoughts of all people.

Registration in this course **and acceptance** of this **syllabus** constitutes acknowledgement by **holder that student has read** and **agrees** to the p**rovisions** of the **foregoing** agreement between student and professor.