REGIS UNIVERSITY

COLLEGE OF COMPUTER & INFORMATION SCIENCES

Syllabus

Course Number: CS 336
Course Title: Web and Database Applications

Course Description:

CS 336. WEB AND DATABASE APPLICATIONS (3). Introduces web-based multi-tiered distributed application development. Topics include using markup and scripting languages in the Presentation tier, services in the (web and business) Logic tier, and a relational database in the Data tier.

Prerequisite Courses:

CS362 or CS310

Course Overview

CS336 is an intermediate level computer-programming course, which will cover a set of languages and technologies needed to develop software for deployment on the World Wide Web. The languages and technologies covered are among the most commonly used and constitute the basics needed in a three-tier architecture.

In this course, the student is introduced to HTML, CSS and JavaScript for tier one development, and Python and Django, along with some SQL, for tier two and tier three development.

Workload

Ultimately, web programming is a skill that requires learning multiple languages and systems. The only way to succeed is to practice this skill. Students will require a ***significant*** amount of time each week to complete the programming assignments.

If you are not willing or able to spend the necessary time, please reconsider whether this is the correct time to attend this class.

Course Outcomes

Upon completion of this course, students should be able to:

1. Describe how platform-based web development differs from general purpose programming
2. Design and implement a simple web application
3. Prepare a relational schema from a conceptual model developed using the entity-relationship model
4. Demonstrate use of the relational algebra operations from mathematical set theory (union, intersection, difference, and Cartesian product) and the relational algebra operations developed specifically for relational databases (select (restrict), project, join, and division).
5. Use SQL to create tables and retrieve (SELECT), update, and delete information from a database.
6. Describe common types of vulnerabilities and attacks in web applications, and defenses against them.
7. Discussion why human-centered software development is important.
8. Create and conduct a simple usability test for a web-based application.
9. Describe the layered structure and function of a typical networked architecture.

Course Materials:

Required Textbook:

Duckett, J. (2014). *Web Design with HTML, CSS, JavaScript and jQuery Set*. Indianapolis, IN: John Wiley & Sons, Inc. ISBN-13: 978-1118907443 and ISBN-10: 1118907442.

The second half of the course will make use of free resources, available on sites such as python.org and djangoproject.com.

Technology Tools:

1. One of the following computers:
    a. A PC-compatible computer system running a version of the Windows operating system and administrator rights to install new software.
    b. A Macintosh computer system running OSX or later and administrator rights to install new software.
    c. A Linux computer system and administrator rights to install new software.

2. Multiple browsers: (latest versions) Internet Explorer, Google Chrome, Firefox, or Opera

3. An IDE such as NetBeans, Eclipse, or xCode. Dreamweaver is also an option as long as only the code editor is used. No WYSIWYG design is allowed in this course.

As with most of Regis learning activities, using various software applications to accomplish assignments requires students to exercise a great deal of responsibility for learning how to successfully operate the software applications.

Pre-Assignment:

Complete the following tasks:

Students will read the first week's assigned reading in the textbook (listed in the Course Assignments grid on the next page) before the day of class. Be prepared to ask questions on unclear areas and to respond to questions about information in the assigned reading.

Online Format: Sign on to WorldClass and become familiar with the course navigation of the Web Curriculum.

Course Assignments and Activities:

Week	Topics	Textbook Readings*	Activities Assignments and Associated Points*
1	1: The Internet and the World Wide Web 2: Architecture of Web Programming 3: Technologies Used in Web Programming and this Course 4: HTML	Read in the **HTML & CSS** textbook: Chapter 1: Structure Chapter 2: Text Chapter 3: Lists Chapter 4: Links Chapter 8: Extra Markup Pages 179-182, 191-192	Participation in Discussions (10% for entire course) Assignment 1 – 2% Assignment 2 Assignment 3 – 8%
2	5: HTML (continued) 6: CSS	Read in the **HTML & CSS** textbook: Chapter 5: Images Chapter 6: Tables Chapter 7: Forms Chapter 8: Extra Markup Chapter 9: Flash, Video, & Audio	Participation in Discussions Assignment 4 – 8%
3	7: Introduction to Javascript 8: Javascript – Decisions & Loops 9: Javascript – Functions, Methods and Objects	Read in the **Javascript & jQuery** textbook: Chapter 1: The ABC of Programming Chapter 2: Basic JavaScript Instructions Chapter 3: Functions, Methods and Objects Chapter 4: Decisions and Loops	Participation in Discussions Assignment 5 – 8%
4	10: Javascript – Document Object Model 11: Events	Read in the **Javascript & jQuery** textbook: Chapter 5: Document Object Model Chapter 6: Events	Participation in Discussions Midterm Exam – 16% Assignment 6
5	12: Introduction to Python 13: Python Syntax and Data 14: Lists, Tuples, Dictionaries, and Files	Using python.org as directed in course content	Participation in Discussions Assignment 7 – 8%
6	15: Functions and Modules 16: Classes and Exceptions	Using python.org as directed in course content	Participation in Discussions Assignment 8 – 8%

7	17: Introduction to Django 18: Views and Templates 19: Models	Using djangoproject.com as directed in course content	Participation in Discussions Assignment 9 – 8%
8	20: Django Admin	Using djangoproject.com as directed in course content	Participation in Discussions Assignment 10 – 8% Final Exam – 16%
		Total	**100%**

****Note to Classroom sections only:*** Exact dates for reading assignments and programming assignments may differ from the above grid. The faculty syllabus, handed out the first night of class, will indicate any changes.

Summary of Assignments and Percentage Weight towards course grade

Assignment	Value (percent of overall course grade)
Assignment 1	2%
Assignment 3	8%
Assignment 4	8%
Assignment 5	8%
Assignment 7	8%
Assignment 8	8%
Assignment 9	8%
Assignment 10	8%
Total*	**58%**
Midterm Exam	**16 %**
Final Exam	**16%**
Participation	**10 %**
Course Total	**100 %**

*Assignments 2 and 6 are software installation assignments, and will not earn any points towards your final course grade.

Programming Assignments

Each programming assignment will involve writing programs that implement the concepts discussed in the book and class.

Late Assignment Policy for CS336 Programming Assignments

Late programming assignments will be graded and then 2% will be deducted for each day the assignment is late, ***up to 5 days late***. No programming assignment will be accepted more than ***5 days*** after the official due date. Therefore, any programming assignment turned in more than ***5 days*** late will be given a grade of **zero**, and no feedback will be given.

Exams
There will be a midterm exam and a final exam. Exam questions will be cumulative, taken from reading assignments and course content. ***Exams will not be accepted late.***

Participation
Class participation/effort is important because we can all learn from each other. Your participation points can make a difference in the final grade. Participation means:

1. a. Present in class every session (classroom)
   b. Present in the forum every week (online)
2. a. Effectively responds to questions from the facilitator (classroom)
   b. Regularly checks forum and posts all required items by the deadlines (online)
3. Interacts/replies to other students in classroom/forum discussions.

Course Policies and Procedures

Adding this course during the Drop/Add Period

If you add this course during the drop/add period, you are responsible for ***immediately*** notifying the instructor that you joined the course late. None of the course due dates will be extended for you. If a due date has already passed when you add the course, late points will be deducted.

Repeating the course

If you are repeating this course (due to a previous withdraw or low grade), you are responsible for ***immediately*** notifying the instructor. If any of the course assignments have not changed since last time you took the course, you will be required to complete alternate assignments.

Plagiarism

Plagiarism includes submitting code obtained from any other person, publication, or any internet web source. ***All work submitted in CS336 must be your own.***

In cases of suspected cheating or plagiarism, the instructor will discuss the matter with the student(s) involved. The instructor reserves the right to question any student orally or in writing about any assignment, and to use the evaluation of the student's understanding of the assignment and of the submitted solution as evidence of cheating. All cheating incidents will be reported to the Computer Science department, and may also be reported to the Academic Integrity Board for further action.

CC&IS Grading Scale

Letter Grade	Percentage	Grade Point
A	93 to 100	4.00
A–	90 to less than 93	3.67
B+	87 to less than 90	3.33
B	83 to less than 87	3.00
B–	80 to less than 83	2.67
C+	77 to less than 80	2.33
C	73 to less than 77	2.00
C–	70 to less than 73	1.67
D+	67 to less than 70	1.33
D	63 to less than 67	1.00
D-	60 to less than 63	.67
F	Less than 60	0

Additional information about grading can be found in the latest edition of the University Catalog, available at http://www.regis.edu/Academics/Course%20Catalog.aspx.

CC&IS Policies and Procedures

Each of the following CC&IS Policies & Procedures is incorporated here by reference.

Students are expected to review this information each term, and agree to the policies and procedures as identified here and specified in the latest edition of the University Catalog, available at http://www.regis.edu/Academics/Course%20Catalog.aspx or at the link provided.

- The CC&IS Academic Integrity Policy.
- The Student Honor Code and Student Standards of Conduct.
- Incomplete Grade Policy, Pass / No Pass Grades, Grade Reports.
- The Information Privacy policy and FERPA. For more information regarding FERPA, visit the U.S. Department of Education.
- The HIPPA policies for protected health information. The complete Regis University HIPAA Privacy & Security policy can be found here: http://www.regis.edu/About-Regis-University/University-Offices-and-Services/Auxiliary-Business/HIPAA.aspx.
- The Human Subjects Institutional Review Board (IRB) procedures. More information about the IRB and its processes can be found here: http://regis.edu/Academics/Academic-Grants/Proposals/Regis-Information/IRB.aspx.

The CC&IS Policies & Procedures Syllabus Addendum summarizes additional important policies including, Diversity, Equal Access, Disability Services, and Attendance & Participation

that apply to every course offered by the College of Computer & Information Sciences at Regis University.

A copy of the CC&IS Policies & Procedures Syllabus Addendum can be found here: https://in2.regis.edu/sites/ccis/policies/Repository/CCIS%20Syllabus%20Addendum.docx.