

## CSCI 3321 – CLIENT SERVER WEB PROGRAMMING

**CREDIT HOURS:** 3  
**PREREQUISITES:** CSIT 3351 or CSCI 2302; CSCI 2311  
**GRADE REMINDER:** Must have a grade of C or better in each prerequisite course.

### CATALOG DESCRIPTION

Design of software systems for use in a distributed, networked environment. Utilizes Client/Server models, server-side web programming, client side web programming, graphical user interfaces, and contemporary web page creation techniques.

### PURPOSE OF COURSE

The purpose of the course is to familiarize the students with software development for internet-based systems. Students will gain more object-oriented software development skills. The course will introduce the students to basic interface design through a graphical web interface, such as a browser. The students will receive exposure to the backend development of a system with and introduction to simple database connections.

### EDUCATIONAL OBJECTIVES

Upon successful completion of the course, students should be able to:

1. Demonstrate an understanding of client/server models.
2. Demonstrate an understanding of web-based programming.
3. Demonstrate an understanding of using countermeasures to address security risks in web applications.
4. Understand rudimentary access to a networked database.
5. Complete team-based projects.
6. Design user interfaces for web applications.

### COURSE CALENDAR

This course meets for a minimum of 37.5 lecture contact hours during the semester. Students have significant weekly extracurricular assignments which may involve reading, watching videos, or engaging in other forms of preparation. Students are expected to complete 7-10 laboratory or programming assignments, and 2-3 periodic exams in addition to the final exam. Students are expected to prepare for any class assignments or quizzes over the material covered in class or the extracurricular assignments. Successful completion of these activities requires at a minimum six additional hours of outside of classroom work each week.

### CONTENT

**Hours**

Introduction to Dynamic Web Content.....	3
Request/Response Procedure	
Web Servers	
HTML	
Introduction to Client-Side Programming .....	9
Flow/Control	
Predefined Functions	
Event Handling	
Graphical User Interface Design	
CSS Design	

Introduction to Database Design.....	9
Relational Design	
Queries, updates, forms and reporting	
Introduction to Server-Side Programming.....	12
API Usage	
Database Interaction	
Browser Differentiation Techniques	
Web application security risks and countermeasures:	
SQL injection, broken access control, insecure design, etc.	
Web Server Project .....	9
Exams (plus final) .....	3
	TOTAL
	45

## REFERENCES

Nixon, Learning PHP, MySQL, and JavaScript: With JQuery, CSS, and HTML5, O'Reilly, 5<sup>th</sup>, 2018

Munro, ASP.NET MVC 5 with Bootstrap and Knockout.js: Building Dynamic, Responsive Web Applications, O'Reilly, 1<sup>st</sup>, 2015