LAGUARDIA COMMUNITY COLLEGE
CITY UNIVERSITY OF NEW YORK
DEPARTMENT OF MATHEMATICS, ENGINEERING, AND COMPUTER SCIENCE

MAC272: WEB DEVELOPMENT II

3 credits (2 hours lecture, 2 hours lab)
Prerequisite: MAC172, MAC250

COURSE DESCRIPTION

This course introduces students to advanced client side and server-side web development. Special emphasis will be placed on adopting industry standard frameworks and content management systems for web development. Students will be introduced to PHP programming and Node.js for server-side web development, and they will develop web programs to communicate with databases.

TEXTBOOK:

1. PHP and MySQL Web Development – Welling, Luke and Thomason, Laura, 5th edition, Addison-Wesley Professional, 2016, ISBN – 0321833899
2. Learning Node.js: A Hands On Guide to Building Web Applications in JavaScript– Wandschneider, Marc, 1st edition, Addison-Wesley Professional, 2013, ISBN – 0321910575

CORE COMPETENCIES:

This course will be used to assess Integrative learning and Inquiry problem solving competencies along with oral and digital communication abilities.

INSTRUCTIONAL OBJECTIVES:

1. Introduce students to server-side web development.
2. Introduce students to industry standard frameworks.
3. Introduce students to Node.js and its applications.
4. Enable students to use Node.Js along with databases.
5. Familiarize students with basic PHP.
6. Introduce students to dynamic web developments using PHP.
7. Enable students to use databases and PHP to develop web applications.
8. Enable students to integrate concepts learned in databases and web development in order to develop dynamic websites.
9. Reinforce students' capacity to present their work to peers.

PERFORMANCE OBJECTIVES:

1. Compare and contrast different options for server-side web development.
2. Identify different frameworks for web development and their applications.
3. Illustrate use of Node.js in developing server-side web applications.
4. Write programs using Node.js to connect to databases.
5. Write client-side web pages using PHP.
6. Write dynamic web-based programs using the programming fundamentals learned.
7. Create dynamic web sites using PHP and databases.

8. Illustrate the concepts of database and web development and use their aggregate knowledge in order to create dynamic websites.
9. Make oral presentations in peer critique settings.

GRADING POLICY:

Laboratory work (10)	20%
Group Project	20%
Midterm Exam(2)	30%
Final Exam	30%.

ACADEMIC INTEGRITY:
This class will be conducted in compliance with LaGuardia Community College's academic integrity policy.

ATTENDANCE:
The maximum number of unexcused absences allowed is 15% of the total class meetings (about 7 hours). Unexcused absences beyond this maximum will result in a grade of WU or F.

COMMENTS:
The grading standards listed above and the suggested homework problems listed in the course outline are both subject to modification by the instructor.

WEEKLY TOPICS:

Week 1: Introduction to content management systems and Node.js installation.
Lab 1: Installing Node.js and creating simple applications

Week 2: Handling data I/O in Node.js, asynchronous programming.
Lab 2: Using Node.js to handle data and create asynchronous functions

Week 3: Modules in Node.js.
Lab 3: Creating modules

Week 4: Accessing file systems and writing simple web applications
Lab 4: Creating web applications to access file systems

Week 5: Using frameworks with Node.js.
Midterm I

Week 6: Using MySQL to create web applications.
Lab 5: Using JavaScript frameworks and MySQL to create and install databases

Week 7: Introduction to PHP, PHP tags, data types, operators, embedding PHP in HTML forms.
Lab 6: Writing simple programs using PHP and HTML

Week 8: PHP blocks and loops.

Lab 7: Writing web applications using PHP loops

Week 9: Using arrays, pattern matching and form handling.
Lab 8: Writing web applications using arrays and HTML forms

Week 10: PHP functions, cookies.
Midterm II
Lab 9: Creating web pages using cookies

Week 11: Database access from PHP web pages and session control.
Lab 10: Creating web applications to access database; inserting, retrieving and modifying data using PHP

Week 12: Authentication with PHP and MySQL, storing and encrypting passwords.
Project: oral presentations and a digital report.
Lab 10: Continued, database applications using PHP

Week 13: Final Exam