



CS-602: Server-Side Web Development

Syllabus

Instructor

Ed Orsini
edorsini@bu.edu
Adjunct Faculty
Computer Science Department
Boston University
Metropolitan College
1010 Commonwealth Ave, 3rd Floor
Boston, MA 02215

Course Description

The Server-Side Web Development course concentrates primarily on building web applications using PHP/MySQL and Node.js/MongoDB. The course is divided into various modules covering in depth the following topics: PHP, MySQL, Object oriented PHP, PHP MVC, Secure Web applications, Node.js and MongoDB. Along with the fundamentals underlying these technologies, several applications will be showcased as case studies. Students work with these technologies starting with simple applications and then examining real world complex applications. At the end of this course, students would have mastered web application development on the server-side.

Course Prerequisites

CS-601(Web Application Development), or instructor's consent.

Course Grading Policy

The course grade will be based on programming assignments (40%), proctored final exam (30%), and a term project (30%). Assignments are expected to be submitted by their respective due dates. Late submissions carry a penalty.

Boston University Metropolitan College

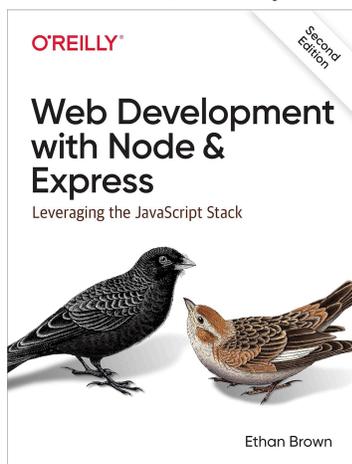
Ed Orsini | edorsini@bu.edu

Course Web Site

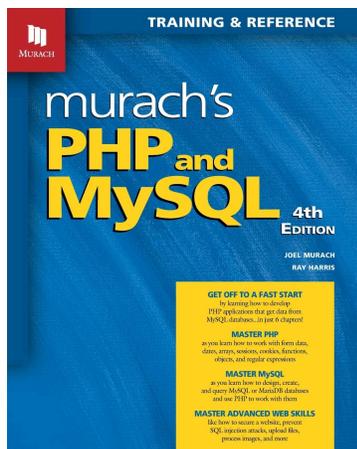
<https://onlinecampus.bu.edu/>

Required Books

Web Development with Node and Express: Leveraging the JavaScript Stack, 2nd Edition , by Ethan Brown, O'Reilly, 2019. ISBN-13: 978-1492053507.



Murach's PHP and MySQL, 3rd Edition, by Joel Murach and Ray Harris, Murach. 3rd Edition: ISBN-13: 978-1-943872-38-1 (2017)



Student Conduct Code

<https://www.bu.edu/met/current-students/academic-policies-procedures/>

Tentative Course Schedule

Module 1: Introduction to Node.js

- Survey of Server-Side Languages
- JavaScript Review, ECMAScript 2015 (ES6) in Node.js
- Web Applications with Node.js (Core Node modules)
- Events and Streams, Event Handling
- Assignment 1 due

Module 2: Node.js Modules and Frameworks

- Node.js Modules (net, http, etc.)
- Web Applications using Express.js
- Framework Routing and REST APIs
- Assignment 2 due

Module 3: Node.js and Databases

- Persistence using MySQL
- Persistence using MongoDB, Mongoose ODM
- Full Stack Applications - MERN Stack (Optional Material)
- Assignment 3 due

Module 4: PHP

- Introduction to PHP and MySQL
- Assignment 4 due

Module 5: Object Oriented Design and MVC

- Object Oriented PHP and MVC (Model-View-Controller)
- Pattern Caching, Registry, Routing
- Assignment 5 due

Boston University Metropolitan College

Ed Orsini | edorsini@bu.edu



Module 6: Web Services and Security

- Working with AJAX, XML, and JSON (Web Services and RESTful Services)
- Secure PHP Programming (User input, SQL Injection, CrossSite Scripting, Remote execution, Session hijacking, CAPTCHAs)
- Assignment 6 due
- Term Project Presentation due
- Final Exam