



CS602: Server-side Web Development

This course concentrates primarily on building full stack applications using the state of the art tools and frameworks. The course is divided into various modules covering the following topics: PHP, NodeJS, Express, React, MongoDB, Mongoose ODM (Object Document Mapper), Sequelize ORM (Object Relational Mapper), REST and GraphQL and last (but not least) Application Security.

Instructor

Andrew Sheehan, *asheehan@bu.edu*

Classroom Location

595 Commonwealth Avenue, Boston, MA 02215, Room 312 (HAR 312)

Required eBooks

Node.js: A Beginner's Guide to Server-Side JavaScript Development

Ethan R. Halloway , ASIN: B0F9VKD69X, <http://bit.ly/3TueF7K>

PHP & MySQL: Novice to Ninja, 7th Edition

Tom Butler and Kevin Yank, ISBN-13: 978-1098129538, <https://bit.ly/4ebIovR>

Grading Policies

- Homework: 20%
- Midterm Examination: 30%
- Final Exam: 30%
- Term Project: 20%

Schedule

Week (Tuesday's)	Topics	Readings
Sept-2	• Introductions & discussions on your development environment • Lectures on Node, modules, ES6, package.json and package managers: npm, pnpm, yarn • Node Built-in objects • Testing: Node with Jasmine (BDD)	Halloway: 1,3,13 https://romanglushach.medium.com/comparing-npm-yarn-and-pnpm-package-managers-which-one-is-right-for-your-distributed-project-to-4d7de2f0db8e
Sept-9	• Synchronous & Asynchronous I/O; callback programming • File systems & streams • The HTTP module • Testing: Node with Jest (TDD)	Halloway: 5,6 https://medium.com/@ben.dev.io/node-js-unit-testing-with-jest-b7042d7c2ad0
Sept-16	• RESTful APIs development • ExpressJS, Routing	Halloway: 7,8
Sept-23	• Mongoose/MongoDB (ODM) • Sequelize/PostgreSQL (ORM)	Halloway: 9 https://sequelize.org/
Sept-30	<i>Moved this class to next week (Medical Reasons)</i>	
Oct-7	• WebSockets using Socket.io • Understanding Php Composer • Ratchet - WebSockets for PHP • Security and Authentication • Testing: Node with Cucumber	Halloway: 11, 12 https://cucumber.io/docs/guides/10-minute-tutorial?lang=javascript https://getcomposer.org/ http://socketo.me/

Week (Tuesday's)	Topics	Readings
Oct-14	Indigenous People's Day Holiday Substitution.	
Oct-21	Midterm Examination	
Oct-28	• Variables, Syntax and Scope • Superglobals and Built-in Types • Control Structures	Bulter: 1,2
Nov-4	• Functions • Arrays • Forms	Bulter: 1,6
Nov-11	• MySql with PHP • Node with MySQL • Object Relational Mapping (ORM)	Bulter: 3,4,5,12
Nov-18	• Classes, Interfaces and Object-oriented PHP • Using PHP Composer	Bulter: 8
Nov-25	• Session Management • Introduction to Laravel • Uploading Files, XML and JSON	Bulter: 11
Dec-2	Course Review	
Dec-9	Project Presentations	
Dec-16	Final Examination	

