

# *MET CS602 - Server-Side Web Development*

## *Instructor*

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## *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 the web application development on the server-side.

## *Course Prerequisites*

**CS601**(*Web Application Development*), or instructor's consent.

## *Course Grading Policy*

The course grade will be based on active class participation and discussions (10%), programming assignments (30%), 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.

## *Course Web Site*

- <https://learn.bu.edu>

## *References*

### *Required Books*

- *Murach's PHP and MySQL 2nd Edition*, by Joel Murach and Ray Harris, Murach, 2014. ISBN13: 978-1-890774-79-0.
- *Web Development with Node and Express: Leveraging the JavaScript Stack*, by Ethan Brown, O'Reilly, 2014. ISBN13: 978-1-491-94930-6.

### *Reference Books (Optional)*

- *Pro PHP MVC*, by Chris Pitt, APress, 2012. ISBN13: 978-1-4302-4164-5.

### *Student Conduct Code*

[Please review the academic conduct code](#)

### *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
- Module 2 -- Node.js Modules and Frameworks
  - Node.js Modules (net, http, etc.)
  - Web Applications using Express.js Framework
  - Routing and REST APIs
- Module 3 -- Node.js and Databases
  - Persistence using MySQL
  - Persistence using MongoDB, Mongoose ODM
- Module 4 -- PHP
  - Introduction to PHP and MySQL
- Module 5 -- Object Oriented Design and MVC
  - Object Oriented PHP and MVC (Model-View-Controller) Pattern
  - Caching, Registry, Routing
- Module 6 -- Web Services and Security
  - Working with AJAX, XML, and JSON (Web Services and

RESTful Services)

- Secure PHP Programming (User input, SQL Injection, Cross-Site Scripting, Remote execution, Session hijacking, CAPTCHAs)
- **Term Project Presentation**
- **Final Exam**