

# Csci 4131 Fall 2018

## Exam II

### Scope, Topics, Format, Time, and Location

# Exam II is Comprehensive, but emphasizes material covered after Exam I:

- Material Covered in Lectures:
  - 16 through 28
    - Note, this includes the readings and examples from the text(s) specified in the lecture slides, and course schedule up on moodle.
    - The exercises I gave you, you submitted, and that I reviewed in class
    - The readings and examples specified by the links in my lecture slides
- Assignments 5-8 (HTTP Protocol, JavaScript, Handling Events, JSON, AJAX, XML, XSLT (Extensible Stylesheet Language Transformations),
- Node.js / Express
- PHP (Scripting – Getting/using Form data relayed via GET or POST), PHP Sessions, PHP/SQL/MySQL –
- Formulating Queries in SQL, using a MySQL database with SQL Queries,
- Topics in Internet Security (Form Security, Hashing, Encryption, SQL Injection)).

# Topics

- Javascript / Dom – using JavaScript to dynamically affect HTML
- Programming with Events
- AJAX
  - Why use it / How does it work
- Reading/Writing text from files and using it in your files
- Reading/Writing JSON from files and using it in your javascript
- Reading/Writing XML from files and using it in your javascript
- XML – specifying
- XSLT - using
- XML vs JSON

# Node.js

- What is it? What do you create with it?
- Pros/Cons vs competition (e.g., PhP)
- Receiving and Responding to HTTP requests (routes),
  - File I/O
    - reading json strings from a file
    - writing to files (strings)
    - working with JSON
    - reading / parsing XML
    - working with XML
  - Interacting with AJAX (via routes)
  - Sessions (via express)
  - Database Interaction
    - Connecting to a MySQL database
    - Querying a MySQL database (forming and issuing queries)
    - Working with the results returned by a Query

# Topics Continued

- Php
  - HTML forms and PHP – Super Global Arrays GET and POST
  - Generating HTML/Javascript using PHP
  - PHP reading and Parsing XML
  - Sessions in PHP and the SESSIONS array
  - PhP and MySQL
    - Connecting to a database
    - Forming and Issuing Queries
    - Working with the results of a Query
- SQL (Creating a Query)
  - Create
  - Insert
  - Update
  - Delete
  - Drop

# Topics Continued

- Methods to Secure Your Internet Applications
  - Session Security
  - Encryption
  - Hashing
  - Encryption vs Hashing – major differences, when to use, when are they used together???
  - Types of Encryption, Symmetric and Asymmetric (Public Key)
  - Digital Certificates
  - HTTPS
  - SQL injection (what it is, how do you ensure it doesn't occur)

# Test Format

- True False / Multiple Choice
- What does this do? (Read and/or fix code in HTML, JavaScript, Node.js, PHP, SQL, MySQL)
- Conceptual Short Answer or Medium Answer
- Code Snippets, and at least one short program
- Possibly extra credit (could entail another writing a short program or ???)

# Recap – Exam

- Open Book(s), Open Notes (Paper Only).
- No Electronic Devices of any kind
- Exam is next Wednesday December 12<sup>th</sup>
- Exam II will be administered in our regular class meeting place (here):

**Anderson Hall 370,**

**from 2:30pm – 3:45 pm**

- If you haven't already, see me / contact me immediately if you have a conflict