CIS 658 – Web Architectures
Winter 2019
Midterm Review Sheet

Week 01: Intro to Web Architectures, Internet Protocols

- History of the WWW (Tim Berners Lee, etc.)
- Original design goals of the web.
- Architecture of the web
- Relevant standards bodies: IETF (Internet protocols), W3C (web related standards).
- The organization of conventional Network Protocol Stacks
- TCP vs. UDP
- Basic client/server architecture
- Popular information sharing protocols, pre-WWW.

Week 02: The HTTP Protocol

- 3 key building blocks of the web:
    - Markup language (HTML)
    - Addressing Scheme (URLs)
    - Transport Protocol (HTTP)
- URL syntax
- Statelessness of HTTP: what does it really mean?
- HTTP Protocol request/response format
- HTTP Request methods: get, post, head, put, delete, trace, options, connect
- Status code categories
- Session support.
- Enhancements made in HTTP 1.1.
- web server reference architecture
    - know the basic components , their relationships and functions.
- Persistent connections
- Different approaches to dynamic content generation
- Virtual hosting
- Caching

Week 03: Intro to Ruby on Rails

- You need not "memorize" Ruby language or Rails framework info, but should be reasonably comfortable working with the concepts covered in class/homework, assuming you have reference material handy.
- Basic structure of a RoR project
- Basic rails / rake commands.
- Rails MVC model

Week 04: More Rails

- TDD in Rails
- Validations
- Modeling 1-M associations in Rails

Week 05: HTML Markup, CSS

- SGML, HTML, XML, and XHTML, HTML5
- HTML document structure
- Know basic concepts / structure (don't spend time memorizing all the elements and their attributes!)
- The role of CSS in web content
- 3 ways to add styling to HTML
- Basic syntax (don't spend time memorizing all attributes and values)
- Stylesheet format
- How "cascading" works in CSS.
- Classes vs. id's
- Concepts around sizing and positioning.

Week 06: JavaScript and JQuery

- Limitations of plain old HTML
- Primitive approach: auto page refreshes
- DHTML = HTML + CSS + JavaScript + DOM
- DHTML vs. AJAX
- DOM – what is it (don't memorize API)
- JavaScript / ECMAScript
    - Historical pedigree
    - Programming model
    - Basic syntax (be familiar with, but don't memorize every feature)
    - Objects in JavaScript
    - Integrating into HTML
    - Javascript Placement: Top vs. Bottom
    - Event Handling
    - Form validation
- jQuery
    - its reason for existing
    - main features
    - jQuery selectors (familiarity with basic syntax)
    - Events / Effects
    - Working with forms
    - Sizing positioning.

Week 07: TBD

Midterm Exam Format:

2 parts equally weighted.

Part 1: closed book, 5-6 questions.

Part 2: open book/notes/Internet, hands-on lab style coding problems.

Exam is scheduled for March, 1 2018 at 6pm in the regular classroom.
Students will have the entire session that evening to complete the exam.