**ABET Course Syllabus – CS 4220**

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| **Code** | CS 4220 | **Credits** | 3 |
| **Title** | Current Trends in Web Design and Development | **Coordinator** | Chengyu Sun |

**Course Information**

1. **Catalog Description:** Current trends in client-side and server-side web design and development.
2. **Prerequisites**: CS 3112 and CS 3220
3. **Contact Hours**: Lecture 3 hours.
4. **Required/Elective:** This course is an elective in the BS program.

**Textbook**

Textbooks may vary depending on the topics covered in the class. The following textbook was used when the course was offered recently:

* Marijn Haverbeke. *Eloquent JavaScript: A Modern Introduction to Programming*, No Starch Press, 2014.

**Course Goals**

The Student Learning Outcomes that are addressed by the course are:

* SLO 2. Students will be able to demonstrate fluency in at least one programming language and acquaintance with at least three more.
* SLO 4. Students will have a fundamental understanding of computer systems.
* SLO 5. Students will have the training to analyze problems and identify and define the computing requirements appropriate to their solutions.

At the end of the course, students are able to

* Use the currently most powerful platforms, libraries, and frameworks for both the client-side and server-side web development.
* Teach themselves new web platforms, libraries, and frameworks as they emerge.

**Topics Covered**

* Important server-side web platforms and frameworks. At the time of this writing these include Node.js and Play.
* Important client-side web platforms and frameworks. At the time of this writing, these include jQuery and Angular.JS.
* How to learn new web platforms, frameworks, and libraries.
* Javascript
  + Javascript fundamentals
  + Javascript API
  + Destructuring
  + Promises, callbacks, event loops, timers
* Node fundamentals
  + Running node
  + Node module
  + Deeper dive into node module – authoring a node module
* Angular fundamentals
  + Data binding
  + Modules
  + Controllers
  + Scopes and views
  + Filters
  + Directives
* Node HTTP Server and Angular
  + Creating node server
  + Passing data to frontend
* Node and Angular application