COMC 2733: JavaScript and Web App Frameworks

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 2
Lab Hours/Week: 2
OJT Hours/Week: *

Prerequisites:
This course requires the following prerequisite
   COMC 2740 - Introduction to Java/C/C++ Programming

Corequisites: None
MnTC Goals: None

This course introduces web client programming skills using JavaScript and Single Page Applications (SPA) using Angular and TypeScript. Topics include variables, objects, functions, events, data types, operators, control structures (if-else, while, for), arrays, images, forms, data validation, the Document Object Model (DOM), Angular/TypeScript components and services, and HttpClient. (Prerequisite: COMC2740) (3 Credits: 2 lecture/1 lab)

B. COURSE EFFECTIVE DATES: 03/09/2009 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. JavaScript data types, variables, scope
2. Expressions, operators
3. Functions, parameters, event handlers, control structures
4. HTML form controls
5. Angular, TypeScript, JSON, HTTP request and response
D. LEARNING OUTCOMES (General)
1. Create HTML document
2. Use common HTML elements
3. Use common CSS formatting
4. Create skeleton JavaScript program
5. Create JavaScript source file
6. Use standard data types
7. Evaluate variable scope issues
8. Use appropriate variable scope
9. Create function definition code
10. Create function calling code
11. Use function parameters
12. Use function return values
13. Use variable scope concepts
14. Describe JavaScript events
15. Create event handler functions
16. Use escape characters
17. Use arithmetic and assignment operators
18. Use comparison and logical operators
19. Use string operators
20. Use "if-else" statements
21. Use nested "if-else" statements
22. Use "switch" statements
23. Use "while" statements
24. Use "for" statements
25. Use "with" statements
26. Use "for . . . in" statements
27. Use "continue" statement
28. Use array variables
29. Describe document object model (DOM)
30. Use Window object methods/properties
31. Use Frame HTML element
32. Use Form HTML element
33. Use text box (Input) HTML tags
34. Use radio button/checkbox (Input) HTML tags
35. Use button (Input) HTML tags
36. Use Select HTML tags
37. Use JavaScript Form object
38. Use Form object methods/properties
39. Create Angular project
40. create Angular components
41. Use Angular Material components
42. perform Angular string interpolation
43. Perform Angular property binding
44. Use Angular directives
45. Create model classes
46. Create service classes
47. Utilize dependency injection
48. Load JSON using HttpClient
49. Map JSON to TypeScript objects
50. Display professional attitude

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   This course was previously titled Web Client Scripting