

Montgomery County Community College  
 CIS 213  
 Advanced JavaScript  
 3-2-2

**COURSE DESCRIPTION:**

This course will teach a student the advanced knowledge and skills required to create modern, dynamic, interactive web sites using advanced toolsets. Students will learn on how to define modules and build templates; define custom directives, implement client-side services that interact with web servers and build dynamic browser views to provide rich user interaction and create custom services you can easily reuse.

**PREREQUISITE(S):**

CIS 140 Client-Side Web Development

**CO-REQUISITE(S):**

None

Upon successful completion of this course, the student will be able to:

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
1. Compose dynamic interactive pages for the web and other contexts using JavaScript.	Lecture/Discussion AV/Multimedia Materials Hands on Labs Homework Assignments Research	Discussion/Questions Research presentations Quiz
2. Implement JavaScript design, object creation and code reuse patterns.	Lecture/Discussion AV/Multimedia Materials Hands on Labs Homework Assignments Assigned readings Research	Discussion/Questions Research presentations Quiz
3. Program advanced JavaScript callback, bind, curry and immediately invoked expression functions.	Lecture/Discussion AV/Multimedia Materials Hands on Labs Homework Assignments Assigned readings Research	Discussion/Questions Research presentations Quiz
4. Design secure JavaScript APIs.	Lecture/Discussion Hands on Labs AV/Multimedia Materials Homework Assignments Research	Discussion/Questions Research presentations Quiz

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
5. Execute JavaScript advanced function techniques using object-oriented JavaScript.	Lecture/Discussion AV/Multimedia Materials Hands on Labs Homework Assignments Assigned readings Research	Discussion/Questions Research presentations Final skills exam Final project and presentation

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

#### SEQUENCE OF TOPICS:

1. Getting Started with Advanced JS
2. Understanding Advanced JS Application Dynamics
3. Advanced functions
4. Variable Scope & Hoisting
5. Lexical Scope and Closures
6. Closures to Extend Variable Scope
7. Object Literals to Pass Optional Arguments
8. Contextual Targeting of DOM Elements
9. Using Namespaces to Prevent Conflicts
10. Hybrid Application Development
11. Global minimization
12. Dynamic / Loose Typing
13. Composition, Abstraction, Functional Programming and Mixings
14. Constructor Functions and Prototypes
15. Asynchronous execution, timers, Prototypal Inheritance, and Closures
16. JavaScript Design Patterns, Object Creation Patterns, and Code Reuse Patterns
17. Code Minification and Compression, Loading Strategies, and Dependency Management
18. Using Advanced JS Templates to Create Views
19. Implementing Directives in JS Views
20. Creating Your Own Custom Directives to Extend HTML
21. Implementing Advanced JS Services in Web Applications
22. Creating Your Own Custom JS Service
23. Creating Rich Web Application Components the JS Way
24. Testing Advanced JS Applications
25. Building security into JS applications

LEARNING MATERIALS:

Dayley, Brad (2014) Learning AngularJS: 1<sup>st</sup> ed. Addison-Wesley Professional  
ISBN 9780134034546

Other learning materials may be required and made available directly to the student and/or via the College's Libraries and/or course management system.

COURSE APPROVAL:

Prepared by: Anil Datta

Date: 11/7/2015

VPAA/Provost or designee Compliance Verification:  
Victoria L. Bastecki-Perez, Ed.D.

Date: 11/7/2015

Prepared by: Marie Hartlein and Matt Krause

Date: 10/23/2019

VPAA/Provost or designee Compliance Verification:

Date: 10/23/2019



*This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.*