

**JEFFERSON COLLEGE**

**COURSE SYLLABUS**

**CIS291**

**PROGRAMMING CAPSTONE**

3 Credit Hours

Prepared by: David McNair

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## CIS291 Programming Capstone

### I. CATALOGUE DESCRIPTION

- A. Pre-requisite: Reading Proficiency  
 Pre or Co-requisite: CIS155 Introduction to Computer Programming, CIS236 SQL and Database Design, and CIS287 Advanced Web Development
- B. 3 Credit Hours
- C. Programming Capstone prepares students to use programming tools for the development of professional applications. Students demonstrate the ability to work with others to solve a business programming problem. They will plan the project, present the project in written and oral formats, and document the entire work process. Students will gain experience publishing web programs to a local web server. (S)

### II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES

|   |  |
|---|--|
| Apply existing skills in project management, database design, and computer programming                      | Exams<br>Comprehensive Project                       |
| Analyze business problems and develop alternative solutions   | Exams<br>Comprehensive Project                       |
| Describe the role of XML with JavaScript  | Quizzes<br>Exams                                     |
| Demonstrate effective use of objects, variables, methods, classes, and interfaces in design and programming | Hands-On Exercises<br>Exams                          |
| Analyze console and web applications  | Hands-On Exercises<br>Quizzes<br>Exams               |
| Develop a user interface  | Hands-On Exercises<br>Exams<br>Comprehensive Project |
| Analyze and demonstrate document creation, procedures, and project management                               | Hands-On Exercises<br>Exams<br>Comprehensive Project |
| Create and modify existing code to solve problems   | Hands-On Exercises<br>Student Presentation<br>Exams  |
| Demonstrate the use of database table relationships to solve business problems                              | Hands-On Exercises<br>Quizzes<br>Exams               |

|  |   |
|--|---|
| Demonstrate the ability to interact with clients to understand and solve business problems | Student Presentation Exams<br>Comprehensive Project |
| Develop web skills to include blogs, PHP and advanced JavaScript programming               | Hands-On Exercises Exams<br>Comprehensive Project   |

### III. OUTLINE OF TOPICS

- A. Developing Skills in WordPress
  - 1. Using template formatting for website navigation
  - 2. Page formatting and navigation
  - 3. Assembling page navigation
  
- B. JQuery and Advanced JavaScript Programming
  - 1. JQuery syntax and coding
  - 2. Selectors, events
  - 3. Load and animate events
  
- C. Documentation and Procedure Writing
  - 1. Standard operating procedures
  - 2. Overview, purpose and scope of documentation
  - 3. Definitions and procedures of technical writing
  - 4. Writing summaries
  
- D. SQL and XML: Defining a Database Connection
  - 1. Data tables
  - 2. Query tables
  - 3. Table relationships
  
- E. Analyzing and Defining Client Information
  - 1. Client problem analysis
  - 2. Building model solutions and interfaces
  - 3. Choosing the best practical solution
  - 4. Coding interface objects: Constructor method
  
- F. Server Options
  - 1. Web server guidelines
  - 2. Specifications
  - 3. Building
  - 4. Choosing the best option
  
- G. PHP Programming
  - 1. General syntax and programming examples
  - 2. Functions and arrays
  - 3. Form handling and validation
  - 4. File opening and reading

- H. Project Management
  - 1. Software options and planning
  - 2. Communication skills
  - 3. Leadership and team management
  - 4. Negotiation and risk management
  
- I. Application Design
  - 1. Choosing the best platform
  - 2. Design software
  - 3. Client perceptions and interaction
  - 4. Building the interface

#### IV. METHOD(S) OF INSTRUCTION

- A. Lecture
- B. Hands-on Lab Exercises
- C. Online Tutorials
- D. Student Presentations

#### V. REQUIRED TEXTBOOK(S)

None

#### VI. REQUIRED MATERIALS

USB Flash Drive (at least 32 GB)

#### VII. SUPPLEMENTAL REFERENCES

Online tutorial sites and documentation found at <http://developer.android.com/> will be used extensively throughout the course.

#### VIII. METHOD OF EVALUATION

- A. Class Participation
- B. Quizzes
- C. Exams

- D. Hands-On Exercises
- E. Student Presentations
- F. Comprehensive Project

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Technology Center 101; phone 636-481-3169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College Website <http://www.jeffco.edu>).

XI. ATTENDANCE STATEMENT

Regular and punctual attendance is expected of all students. Any one of these four options may result in the student being removed from the class and an administrative withdrawal being processed: (1) Student fails to begin class; (2) Student ceases participation for at least two consecutive weeks; (3) Student misses 15 percent or more of the coursework; and/or (4) Student misses 15 percent or more of the course as defined by the instructor. Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details.

XII. OUTSIDE OF CLASS ACADEMICALLY RELATED ACTIVITIES

The U.S. Department of Education mandates that students be made aware of expectations regarding coursework to be completed outside the classroom. Students are expected to spend substantial time outside of class meetings engaging in academically related activities such as reading, studying, and completing assignments. Specifically, time spent on academically related activities outside of class combined with time spent in class meetings is expected to be a minimum of 37.5 hours over the duration of the term for each credit hour.