

Web Programming (10161)

Rationale Statement:

The Internet is the fastest growing medium for distributing information. To create more interactive websites it is important for students to understand the various scripting and programming that can be implemented into a website. In web programming students will learn the backend of websites and how they are developed to be more interactive and to receive information from the user. This course is designed to help students who are looking at a field in electronic commerce or online software development.

Course Description:

Grade Level: 10-12

Course Topics:

- Web scripting languages (JavaScript, PHP, ASP, and DHTML. XHTML, PERL)
- Programming basics using the selected language
- Information processing cycle
- Interface design
- Difference between client and server side applications
- Web site usability

Core Technical Standards & Examples

Indicator #1: Demonstrate and apply knowledge of web programming and hosting.	
Bloom's Taxonomy Level	Standard and Examples
Remembering	WP 1.1 Demonstrate knowledge of Internet programming basics. Examples: <ul style="list-style-type: none">• Demonstrate knowledge of Internet programming coding.• Demonstrate knowledge of how to use standard programs to produce an Internet application.• Identify features, strengths, and weaknesses of different authoring programs.
Remembering Understanding	WP 1.2 Apply knowledge of basic web programming. Examples: <ul style="list-style-type: none">• Demonstrate knowledge of client-side processing and its advantages/disadvantages.• Demonstrate knowledge of how to use a scripting language to program a site.• Demonstrate knowledge of Internet programming codes for formatting page layout.
Remembering	WP 1.3 Apply knowledge of web hosting. Examples: <ul style="list-style-type: none">• Comply with TCP/IP (Transfer Control Protocol/Internet Protocol).• Upload files to the server.• Publicize the site.• Collect/analyze usage statistics.

Indicator #2: Design a software application.

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Bloom's Taxonomy Level	Standard and Examples
Applying	WP 2.1 Apply language specific programming tools/techniques. Examples: <ul style="list-style-type: none">• Develop programs using appropriate language.• Use user interface development tools.
Applying	WP 2.2 Create design specifications for a computer application. Examples: <ul style="list-style-type: none">• Demonstrate knowledge of the principles of program design to analyze real-world problems.• Document design specification according to defined procedures.• Design system input, output, processing, and interfaces.• Review system design with management and users.

Indicator #3: Produce an internet enabled application.

Bloom's Taxonomy Level	Standard and Examples
Applying	WP 3.1 Demonstrate knowledge of programming language concepts. Examples: <ul style="list-style-type: none">• Demonstrate knowledge of the concepts of data and procedural representation.• Demonstrate knowledge of current key programming languages and the environment they are used in.• Demonstrate knowledge of how to design and implement programs in a top-down manner.
Analyzing	WP 3.2 Demonstrate knowledge of the stages of program development. Examples: <ul style="list-style-type: none">• Identify the use of program design tools.• Demonstrate knowledge of structured/modular programming.• Demonstrate knowledge of the information system (IS) life cycle.
Analyzing	WP 3.3 Demonstrate knowledge of basic software systems implementation. Examples: <ul style="list-style-type: none">• Use appropriate programming language.• Analyze and prepare logic using program flowchart.• Compile and debug code.• Prepare code documentation.• Prepare unit-testing plan.
Applying	WP 3.4 Resolve problems with integration if they occur. Examples: <ul style="list-style-type: none">• Troubleshoot unexpected results.• Fix code.