

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: XML & New Technologies

CODE NO. : CSD316

SEMESTER: 6

PROGRAM: Computer Studies (Computer Analyst Programmer)

AUTHOR: DOUGLAS MCKINNON

DATE: Jan 05

PREVIOUS OUTLINE DATED: Jan 04

APPROVED:

DEAN

DATE

TOTAL CREDITS: 5

PREREQUISITE(S): CSD315 - Web Programming

HOURS/WEEK: 4

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*For additional information, please contact Colin Kirkwood, Dean School of
Technology, Skilled Trades & Natural Resources*

(705) 759-2554, Ext. 688

I. COURSE DESCRIPTION:

Students will be introduced to the many standards and standards governing bodies affecting historical and current textual markup languages.

Students will explore the history and evolution of web based programming technologies.

Ultimately students will be introduced to the revolutionary, evolutionary XML and XML-related web-enabling application standards. Students will understand the XML language's intended usage, syntax, and functionality. Students will progress from creating simple XML documents, to creating components of, or complete commercial applications rendering web pages with dynamic data content and style.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Describe the characteristics of a generalized markup language.**Potential Elements of Performance:**

- Describe the evolution and purpose of markup languages.
- Evaluate RTF as an exemplary markup language.
- Identify and explain the historical perspective of GML.
- Identify and explain the historical perspective of SGML.
- Differentiate between GML and SGML objectives.
- Understand the relationship between GML, SGML and XML

2. Evaluate the historical perspective of markup languages used on the World Wide Web.**Potential Elements of Performance:**

- Understand the role of the World Wide Web Consortium (W3C).
- Describe the W3C process of establishing a "recommendation" regarding the use of a markup languages on the Internet
- Describe the evolution of markup languages used on the WWW.
- Describe the role of the Web Browser in relation to markup languages used on the WWW.

- Identify and explain the historic perspective of HTML.
- Identify and explain the historic perspective of XHTML.
- Describe the similarities between HTML and XHTML.
- Describe the major differences between HTML and XHTML
- Evaluate the W3C recommendations governing XHTML
- Understand why the W3C created XML as an extensible markup language
- Understand the relationship between XHTML and XML

3. **Create and modify simple XHTML documents**

Potential Elements of the Performance:

- Create simple XHTML documents and open them in a browser.
- Read and write document type and namespace declarations.
- Add id and class attributes to an XHTML document.
- Identify the root element in an XHTML document.
- Create lists, add anchors & images to a simple XHTML document.
- Plan and create XHTML documents using div and span attributes.
- Plan and create XHTML documents using table elements.
- Plan and create XHTML forms using the XHTML Strict DTD.

4. **Create and associate Cascading Style Sheets with XHTML documents**

Potential Elements of Performance:

- Separate and apply style using Cascading Style Sheet (CSS) rules.
- Develop CSS declaration blocks, properties, values, and determine cascading order.
- Apply CSS attributes, pseudo-elements, and pseudo-classes.
- Utilize inheritance, attribute selectors, descendant selectors, and substring matching selectors to create efficient CSS.
- Incorporate CSS into web applications, including tables.
- Design and develop with CSS using absolute, relative, and fixed positioning.
- Incorporate space properties for multiple output devices.

5. Introduction to Extensible Markup Language (XML)

Potential Elements of Performance:

- Understand when to apply XML to web based applications.
- Develop "well-formed" XML documents as recommended by the W3C.
- Create and validate well-formed XML applications utilizing correct syntax for attributes, sub-elements, PCDATA, CDATA, processing instructions, and entities.
- Determine and incorporate namespace into XML documents.
- Read, key and edit an XML hierarchical structure and document tree.
- Model XML applications and work with an XML parser toward user-centered design and efficient application development.

6. Introduction to Document Object Module (DOM)

Potential Elements of Performance:

- Create XML documents based on the DOM hierarchical tree structure.
- Navigate and modify XML documents using DOM.
- Prepare XML documents using DOM nodes root, children and siblings.
- Develop DOM objects to be accessed for data manipulation.
- Work with node properties and methods in simple applications.
- Use Javascript with ActiveX technology and ActiveX island to manipulate XML documents.

7. Introduction to Wireless Markup Language (WML)

Potential Elements of Performance:

- Differentiate between web and wireless development.
- Work with WML structure and syntax to create WML applications.
- Determine appropriate tools for development and testing with

WML.

- Select and develop with WAP tools from the textbook's companion website.

8. Introduction to MathML (WML)

Potential Elements of Performance:

- Understand mathematical expression issues in a computerized environment.
- Understand considerations for using MathML on Web pages..
- Research examples of math editors and presenters.
- How to use software tools to create mathematical expressions and render them on web pages.

III. REQUIRED RESOURCES/TEXTS/MATERIALS:

Textbook:

Title: XML Content and Data

Authors: Kelly Carey & Stanko Blatnik

Publisher: Prentice Hall (Pearson Education Inc.)

ISBN: 0-13-028229-4

IV. EVALUATION PROCESS/GRADING SYSTEM:

| | |
|-------------------------------|-----|
| 3 WRITTEN TESTS (15% each) | 45% |
| LAB AND TAKE-HOME ASSIGNMENTS | 35% |
| QUIZZES (potentially weekly) | 20% |

(The percentages shown above may vary slightly if circumstances warrant.)

The following semester grades will be assigned to students in postsecondary courses:

| <u>Grade</u> | <u>Definition</u> | <u>Grade Point Equivalent</u> |
|--------------|---|-------------------------------|
| A+ | 90 - 100% | 4.00 |
| A | 80 - 89% | 4.00 |
| B | 70 - 79% | 3.00 |
| C | 60 - 69% | 2.00 |
| D | 50 - 59% | 1.00 |
| F (Fail) | 49% or below | 0.00 |
| CR (Credit) | Credit for diploma requirements has been awarded. | |
| S | Satisfactory achievement in field placement or non-graded subject areas. | |
| U | Unsatisfactory achievement in field placement or non-graded subject areas. | |
| X | A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies & Procedures Manual – Deferred Grades and Make-up</i>). | |
| NR | Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has not been possible for the faculty member to report grades. | |

VI. SPECIAL NOTES:

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course outline amendments:

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.