*2014-15*

GENERAL EDUCATION COURSE PROPOSAL

 WEBER STATE UNIVERSITY

 **COMPUTER AND INFORMATION LITERACY**

Requirement(s) (check all that apply):

\_\_\_X\_\_Part A: Document Creation

\_\_\_X\_\_Part B: Content, Internet Identity, and Device Management

\_\_\_X\_\_Part C: Data Manipulation, Visualization, and Presentation

\_\_\_\_ \_\_Part D: Information Literacy (Library and Internet Research Skills)

Date: \_\_\_1 Jan 2015\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

College: \_\_\_\_COAST\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Department: \_\_COMPUTER SCIENCE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Catalog Abbreviation: \_\_\_CS\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Catalog Title: \_\_\_Introduction to Computer Science\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Course Number: \_\_\_\_1030\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Credit Hours: \_\_\_\_4\_\_\_

New: \_\_\_X\_\_\_

Renewal:\_\_\_\_\_\_

Course description as you want it to appear in the catalog:

This course follows the core body of knowledge specified by the Association of Computing Machinery (ACM) which provides students with a broad overview of topics they might encounter within the Computer Science curriculum. The course is taught at an introductory level and includes topics such as: history of computers, computer architecture, operating systems, world-wide web and HTML, programming, database, software engineering, networking, and more.

*General Education & Computer & Information Literacy Page 2*

**COMPUTER & INFORMATION LITERACY GENERAL EDUCATION MISSION STATEMENT**

*The Weber State University Computer and Information Literacy (CIL) requirement provides students with the ability to use computers, the Internet, and library resources. Specifically it provides students with skills and knowledge to input, format, find, identify, retrieve, analyze, and evaluate information to support academic success and lifelong learning.*

Course Title:\_\_\_CS 1030: Introduction to Computer Science\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Department:\_\_Computer Science\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Provide justifications in Sections A-D for each of the CIL Part Requirements checked above.*

A. Justification for Course Covering **CIL Part A Requirement: Document Creation**.

Part A Core Competencies:

A1. Prepare a research paper

 Students will use current software to produce correctly formatted research papers with an accepted academic reference format such as MLA or APA.

A2. Prepare employment documents

 Students will use current software/technology to produce effective employment documents such as a resume and a cover letter.

A3. Document Collaboration

 Students will be able to use multiple collaboration mediums to effectively share, communicate, and collaborate with their peers.

*Describe how the course prepares students to successfully complete tasks related to Document Creation. Cite specific lecture topics, written assignments, and/or lab projects that address each of the core competencies listed above. Refer to your attached syllabus as needed.*

* *Students learn basic web page design and development and produce a Student Resume / Academic Portfolio using HTML and CSS*
* *Students weigh the pros and cons for developing software from scratch and produce a Cost-Benefit Analysis using an electronic spreadsheet.*
* *Students produce a Collaborative Software Requirements Specification (SRS) document using Google Docs.*
* *Students prepare a research paper on Computer Ethics and Emerging Technologies using a word processor.*

*General Education & Computer & Information Literacy Page 3*

B. Justification for Course Covering CIL **Part B Requirement: Content, Internet Identity, and Device Management**

Part B Core Competencies:

B1. Content and File Management

 Students will use current software/technology to manage content on local devices and in the cloud.

B2. Internet Identity Management

 Students will manage their web identity and presence according to e-safety, security, and privacy best practices and standards.

B3. Device management and Security

 Students will manipulate multiple computing platforms and troubleshoot problems when they arise. Students will protect local devices from security Threats including viruses, malware, and adware using current best practices and technologies.

*Describe how the course prepares students to successfully complete tasks related to Content, Internet Identity, and Device Management. Cite specific lecture topics, written assignments, and/or lab projects that address each of the core competencies listed above. Refer to your attached syllabus as needed.*

* *Students upload/download/and secure files on the “Cloud” using SSH, FTP and Remote Desktop*
* *Students perform SQL Queries and Data Manipulation using a Database (like MS Access)*
* *Students learn to identify “cookies” and privacy security risks on the internet*
* *Students learn to check for (and repair) files containing malicious logic*

*General Education & Computer & Information Literacy Page 4*

C. Justification for Course Covering **CIL Part C Requirement: Data Manipulation, Visualization, and Presentation**

Part C Core Competencies:

C1. Data Manipulation

 Students will manipulate and analyze data using various software applications and basic programming.

C2. Data Visualization

 Students will organize data using various graphical methods such as charts and infographics to appropriately convey information.

C3. Data Presentation

 Students will create an effective, well-designed presentation using current technologies.

*Describe how the course prepares students to successfully complete tasks related to Data Manipulation, Visualization, and Presentation. Cite specific lecture topics, written assignments, and/or lab projects that address each of the core competencies listed above. Refer to your attached syllabus as needed.*

* *Students learn to solve problems with computer programming by creating an interactive story using the Alice Programming Language*
* *Students collaborate to develop electronic Use Case Diagrams and software flow charts using a diagramming tool like Lucid Chart or MS Visio*
* *Students create an electronic presentation (using a tool like MS PowerPoint) on Computer Ethics or Evolving Trends in Computer Science.*

*General Education & Computer & Information Literacy Page 5*

**COMPLETE THE FOLLOWING**

1. Has this proposal been discussed with and approved by the department?

 Yes

2. List those general education courses in other departments with similar subject matter and explain how this course differs.

NTM 1700 – This course teaches basic components of word processing, Windows, email, Internet, spreadsheets, graphic presentations, information security. CS 1030 differs by teaching students to use these same basic components as foundational level tools for developing more advanced core Computer Science competencies (like Programming, Web Page Creation, and Database Development).

3. If the proposed new general education course affects course requirements or enrollments in other departments, list the departments and programs involved and attach comments from each.

NTM Department. The NTM Department was immediately made aware of this proposal starting from its initial conceptualization. The NTM Department has offered consistent support and assistance throughout the proposal process. The following comments are taken directly from the attached email sent by NTM Dept. Chair, Allyson Saunders:

**Brian**

**After reviewing your proposal, the NTM (Network Technology and Business Multimedia) Department fully supports the CS 1030 Computer Literacy General Education Proposal.  Although enrollments may decrease in NTM 1700 or equivalent CIL courses as a result of this CS Computer Literacy course, it does not adversely affect NTM.  We are very supportive of this proposal.**

**Sincerely,

Allyson Saunders**

**Allyson D. Saunders, Ph.D.**

**NTM Department Chair**

**801-626-6823
Network Technology and Business Multimedia**

**Weber State University
1395 Edvalson Street Dept 1408
Ogden, UT 84408-1408**

*General Education & Computer & Information Literacy Page 6*

**New Courses Only:**

4. Discuss how you will assess student learning outcomes associated with this course

| Measurable Learning OutcomeStudents will… | Method of Measurement | Threshold for Evidence of Student Learning |
| --- | --- | --- |
| A1. Prepare a research paperStudents will use current software to produce correctly formatted research papers with an accepted academic reference format such as MLA or APA. | *Students prepare a research paper on Computer Ethics and Emerging Technologies using a word processor.* | 80% of students will earn a C or higher on assignments and projects |
| A2. Prepare employment documentsStudents will use current software/technology to produce effective employment documents such as a resume and a cover letter. | *Students learn basic web page design and development and produce a Student Resume / Academic Portfolio using HTML and CSS* | 80% of students will earn a C or higher on assignments and projects |
| A3. Document CollaborationStudents will be able to use multiple collaboration mediums to effectively share, communicate, and collaborate with their peers. | *Students produce a Collaborative Software Requirements Specification (SRS) document using Google Docs.* | 80% of students will earn a C or higher on assignments and projects |
| B1. Content and File ManagementStudents will use current software/technology to manage content on local devices and in the cloud. | *Students learn basic web page design and development and produce a Student Resume / Academic Portfolio using HTML and CSS* *Students perform SQL Queries and Data Manipulation using a Database (like MS Access)**Students produce a Collaborative Software Requirements Specification (SRS) document using Google Docs.* | 80% of students will earn a C or higher on assignments and projects |
| B2. Internet Identity ManagementStudents will manage their web identity and presence according to e-safety, security, and privacy best practices and standards. | *Students upload/download/and secure files on the “Cloud” using SSH, FTP and Remote Desktop**Students learn to identify “cookies” and privacy security risks on the internet* | 80% of students will earn a C or higher on assignments and projects |
| B3. Device management and SecurityStudents will manipulate multiple computing platforms and troubleshoot problems when they arise. Students will protect local devices from security Threats including viruses, malware, and adware using current best practices and technologies. | *Students learn to check for (and repair) files containing malicious logic* | 80% of students will earn a C or higher on assignments and projects |
| C1. Data ManipulationStudents will manipulate and analyze data using various software applications and basic programming. | *Students learn to solve problems with computer programming by creating an interactive story using the Alice Programming Language* | 80% of students will earn a C or higher on assignments and projects |
| C2. Data VisualizationStudents will organize data using various graphical methods such as charts and infographics to appropriately convey information. | *Students collaborate to develop electronic Use Case Diagrams and software flow charts using a diagramming tool like Lucid Chart or MS Visio* | 80% of students will earn a C or higher on assignments and projects |
| C3. Data PresentationStudents will create an effective, well-designed presentation using current technologies. | *Students create an electronic presentation (using a tool like MS PowerPoint) on Computer Ethics or Evolving Trends in Computer Science.* | 80% of students will earn a C or higher on assignments and projects |

**Overall Course Structure/Topics and Associated Core Competencies:**

**SECTION 1: Background Information/Introduction (4 Weeks)**

* History of Computing & Computer Architecture *Assessment: Quiz / Exam in which 80% of students earn a C or higher.*
* Numbering Systems & Data Representation *Assessment: Quiz / Exam in which 80% of students earn a C or higher.*
* Operating Systems and File Structures – *Assessment: Quiz / Exam in which 80% of students earn a C or higher.*
* Networks and Security (B2, B3) – *Icarus Accounts*, *Athena, SSH, FTP and Remote Desktop. Assessment: Quiz / Exam in which 80% of students earn a C or higher.*
* Ethics and Emerging Technologies (A1) – *Assessment:* *Research Paper (Word Processor) in which 80% of students earn a C or higher.*

**SECTION 2: Web and Database (5.5 Weeks)**

* Web Design and Development (B1, A2) *– Assessment: Student Resume / Portfolio (HMTL / CSS) in which 80% of students earn a C or higher.*
* Database Application (B1, C1) – *SQL Queries and Data Manipulation (MS Access). Assessment: Quiz / Exam in which 80% of students earn a C or higher.*

**SECTION 3: Programming (5.5 Weeks)**

* Programming and Data Structures (B1, C1) – *Problem Solving / Assessment: Story Telling with Alice Program in which 80% of students earn a C or higher.*
* Software Engineering (A3, B1, C2, C3) – *Assessment:* *Cost-Benefit Analysis (Spreadsheet) and Mini-SRS Collaborative Document / Presentation (Google Docs) with Use Case Diagrams (Lucid Chart) in which 80% of students earn a C or higher.*

**Current General Education Courses and Existing Courses Seeking General Education Status:**

5. Discuss how you have assessed the applicable or identified student learning outcomes associated with this course.

Assessment of core competencies will be performed as described in the above rubric.

 6. How has this assessment information been used to improve student learning?

By setting expected results for the percentage of students meeting or exceeding performance standards before data collection begins, the program can gauge its effectiveness in helping students meet the learning outcomes.

7. Attach a syllabus of the course. Include the number of contact hours per week and the format of these hours (e.g., lecture, lab, field trip, etc.).