CS 1030

Division: Natural Science and Mathematics
Department: Engineering and Computer Science
Course: CS 1030
Title: Survey of Computer Science
Catalog Description:

This course is intended to expose students to the computer science discipline. Topics include computers in society, computer programming and problem solving, artificial intelligence, history of computing, data representation, and computer architecture. There are hands on activities in the computer lab, but this is not a skills course or a programming course.

General Education Requirements: Individual Choice
Semesters Offered: TBA
Credit/Time Requirement: Credit: 3; Lecture: 3; Lab: 0
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Prerequisites: ENGL 1010 and MATH 1050

Corequisites: N/A

Justification:

This course will promote computer literacy in an information age and expose students to the computer science discipline. This course can be taken as an introductory course for students contemplating a major in computer science as well as a general education course.

Student Learning Outcomes:

Upon successful completion of this course, students will:

- know what computers can and cannot do and they will know the history of computer science
- be able to define computer science, to think lucidly about computers and their social implications, and to implement simple algorithms.
- begin to understand the principles governing computers and their programs and begin to realize the worth of computers and their programs.

Content:

This course will include:

- history of computing
- applications of the computer
- software system design
- programming
- program translation
- computer hardware
- theory of computation
- artificial intelligence
- computers and society.

General Education Outcomes:

4) Retrieve, evaluate, interpret, and deliver information through a variety of traditional and electronic media.

Students will be required to utilize the text and internet to analyze and synthesize examples within many of the topics of the course.

6) Apply computational skills to a variety of contexts.

Students consider binary and information representation in digit computers and base conversions and quantitative analysis of computer generated figures.

7) Apply scientific reasoning to a variety of contexts.

Students will perform assignments ranging from algorithm development to critiquing projection of the press and others regarding the development of artificial intelligence (AI), computer aided instruction (CAI), etc.

Key Performance Indicators:

- daily homework: 10%-20% of final grade
- 8-10 quizzes: 10%-20% of the final grade
- 2-5 examinations: 30%-60% of the final grade
- comprehensive final examination: 15%-30% of the final grade

Representative Text and/or Supplies:

- R. Decker and S. Hirshfield, *The Analytical Engine: An Introduction to Computer Science Using the Internet,* current edition, PWS Publishing Company.

Optimum Class Size: 12
Maximum Class Size: 15

Signatures:

I hereby submit this course syllabus:

Garth O. Sorenson, MS, Associate Professor

I hereby find this course consistent with the goals and resources of the Engineering and Computer Science Department:

Garth O. Sorenson, MS, Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)