Bemidji State University

CS 1309: Problem Solving and Computation

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 0
Lab Hours/Week: 0
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

Introduction to general problem-solving techniques applicable to solving problems in computing, including elementary computational problems. Other techniques include using systematic lists, using diagrams, and looking for patterns. Includes fundamental computational concepts in information representation, computer organization, and social and ethical issues in computing. The two-hour lab introduces the use of software to solve a variety of problems. The prospective student should have a general understanding of computers and their operation. Prerequisite: Three years of high school mathematics (including two years of algebra) and a score on the Mathematics Placement Test appropriate for placement into MATH 1170. [Core Curriculum Goal Area 4]

B. COURSE EFFECTIVE DATES: 01/14/2013 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Enhance problem solving skills by developing tactics and applying them to the problems of computers
2. Express computer solutions as algorithms
3. Overview of the disciplines of computer science and the fundamental ways that computer scientists view problems and their solutions

D. LEARNING OUTCOMES (General)

1. develop a general understanding of the history of the field of computer science.
2. decide when to apply numerous problem-solving strategies.
3. apply fundamentals of computer science: information representation, computer organization, process application, and social and ethical issues in computing.
4. create simple programs and implement algorithms.
5. apply basic programming language concepts: functions, control structures, events, and arrays.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

Goal 04 - Mathematical/Logical Reasoning

1. Illustrate historical and contemporary applications of mathematical/logical systems.
2. Clearly express mathematical/logical ideas in writing.
3. Apply higher-order problem-solving and/or modeling strategies.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus
G. SPECIAL INFORMATION

None noted