

# Bemidji State University

## CS 2321: Computer Science I

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Introduction to the basic principles of software development using a modern high-level language, including using selection, looping, function calls, and recursion, along with simple data structures such as arrays and objects, to solve problems. Includes an introduction to software engineering techniques such as interactive debugging, software testing, and methods of software validation. Includes a two-hour lab.

Prerequisite: CS 1107 and CS 1108, or CS 1309; MATH 1170 or MATH 1470 or higher.

**B. COURSE EFFECTIVE DATES:** 08/20/1997 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. The Study of Computer Science
2. Beginnings
3. Control
4. Algorithms and Program Development
5. Working with Strings
6. Functions -- Quickstart
7. Lists and Tuples
8. More on Functions
9. Dictionaries and Sets
10. Files
11. More Program Development
12. Introduction to Classes
13. More on Classes
14. Program Development with Classes
15. Exceptions and Exception Handling
16. Testing
17. Recursion: Another Control Mechanism

### D. LEARNING OUTCOMES (General)

1. learn problem solving within the context of CS1 to both majors and nonmajors using python
2. be provided examples of developing programs focusing on the kinds of data analysis problems students might ultimately face
3. be given a practical foundation in programming, enabling them to produce useful, meaningful results in their respective fields of study.

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

None

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted