BERGEN COMMUNITY COLLEGE
Computer Science, Engineering, and Information Technologies Department
CIS-158 Course Syllabus

Instructor: _____ Phone: _____

Email: _____ Office hours: _____

Office: _____

Prerequisites: MAT-040 or MAT-048 or equivalent by testing

Credits/Hours: 3 Credits 4 Hours

Gen. Ed. Elective: Yes

Course Description: Introduction to Computer Systems is intended for students who are interested an algorithmic approach to computers and their applications. Topics include terminology used in the computer field, introduction to computer systems and their applications. Students will work with various software packages on the microcomputer (aka: PC).

Student Learning Outcomes Upon satisfactory completion of the course, the student will:

1. Become proficient in basic computer terminology
2. Be able to name the major components of a computer system and explain what each does.
3. Identify various ways in which the computer has impacted on or changed our society.
4. Know the criteria to use in evaluating a software package
5. Be able to perform tasks utilizing current problem solving software packages
6. Know the fundamental steps necessary for creating a computer program
7. Be able to explain fundamental networking concepts

Course Grade Evaluation:

The student will be evaluated using a variety of methods which may include, but are not limited to, some of the following: Quizzes, exams, written assignments, programming assignments, and projects.

Textbook:

An Invitation to Computer Science, Sixth Edition, ISBN 13: 978-1-133-19082-0,
ISBN 10: 1-133-19082-0 Author: Schneider and Gersting, Cengage Learning.

Course Content:

1. What is Computer Science?
   - Misconceptions
   - Definitions
   - Major subfields of Computer Science

Using the Microcomputer
Creating a Text Document

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2. Introduction to Hardware
   History of Computing
   Hardware components of computers
   Categories of computers

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3. Algorithms
   Representation
   Operations
   Creating an algorithm

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4. Interaction with the Computer System
   Formatting a disk
   Sign-on & sign-off procedures
   Creating, saving, and printing a source code file

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5. Information Literacy
   Use of Library Information
   Use of Web Information

Exam I: topic 1 through 5

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6. Data Representation
   External
   Internal
   Binary, Decimal and Hexadecimal
   Reliability of Internal Representation
   Boolean Logic
   Logic Gates
   Circuits

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7. Computer Memory
   Types of memory
   Usage of memory

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8. Software
   System Software
   Programming languages
   Software development process
   Creating a program
   Compilation
   Execution

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9. File Management

File types
Storage
File Organization
Accessing a file

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10. Packaged Software — Exam II: topic 6 through 10
    Spreadsheet
    Presentation Tools

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11. Networking Concepts
    Terminology
    Purpose of a Network
    Local Area Networks
    Wide Area Networks
    Internet Overview

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12. Computation Modeling
    What is a model?
    Simulation

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13. Artificial Intelligence
    Definition
    Terminology

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14. Computers and Society
    Benefits of computing
    Security
    Legal and ethical issues — Final

Special Features of the Course:

The use of learning technologies: the internet and PowerPoint
The inclusion of technology literacy
The inclusion of information literacy