



Broward Community College

Course Outline

STATUS: A

COMMON COURSE NUMBER: CGS 1000

COURSE TITLE: Introduction to Computers

CREDIT HOURS: 3

CONTACT HOURS BREAKDOWN:

Lecture/Discussion 48

Lab

Other

Contact Hours/Week 3

CATALOG COURSE DESCRIPTION:

Prerequisite: None

Corequisite: None

This course provides an introduction to electronic data processing. Topics include basic computer theory, file storage media, input/output devices and number systems. In addition, students will be exposed to the use of applications software. Various lab activities are conducted throughout the course.

General Education Requirements - Associate of Arts Degree, meets Area(s):
 General Education Requirements - Associate in Science Degree, meets Area(s):

UNIT TITLES:

1. Introduction and History of Data Processing
2. Computer System Components
3. Number Systems
4. Introduction to Programming and Programming Languages
5. Operating Systems
6. Data Communications
7. Management Information Systems
8. DOS
9. Word Processing Software
10. Spreadsheet Software
11. Database Management Systems

I. Course Overview:

Upon successful completion of this course, the students should be able to define fundamental computer technology, describe concepts of data processing, describe the use of computers in business, and utilize applications software.

II. Units:

Unit 1. Introduction and History of Data Processing

General Outcome:

- 1.0 The students should be able to describe the concept of data processing, its place in society, its limitations, and relate its history.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Discuss uses and limitations of computers today.
- 1.2 Criticize the impact of computers on society.
- 1.3 Relate the history of data processing spanning a period from the abacus to today's advanced computer technologies.
- 1.4 Report how the data processing industry began.
- 1.5 Discuss the characteristics of computer generations.
- 1.6 Describe the future of data processing.

Unit 2. Computer System Components

General Outcome:

2.0 The students should be able to list and describe the devices that input data and output results from the computer, discuss the operation of CPU, and discuss the operation of secondary storage devices.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 2.1 Describe the I/O devices in a computer.
- 2.2 Identify the parts of the CPU.
- 2.3 Describe how the memory operates and its purpose.
- 2.4 Describe the use of an arithmetic logical unit (ALU).
- 2.5 List and describe parts of the control unit.
- 2.6 Identify and describe the CPU's instruction cycle, execution cycle, and machine cycle.
- 2.7 Describe the stored program concept.
- 2.8 Describe the difference between stored instructions and stored data.
- 2.9 Discuss magnetic tape devices.
- 2.10 Identify and discuss magnetic disk systems.
- 2.11 Differentiate between secondary storage and primary storage.
- 2.12 Discuss emerging concepts in secondary storage.
- 2.13 Identify and describe the advantages and disadvantages of common file system organizations and access methods.

Unit 3. Number Systems

General Outcome:

3.0 The students should be able to describe alternative number systems and the relevance of binary and hexadecimal number systems to computer science.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

3.1 Describe the binary, decimal, and hexadecimal number systems.

3.2 Calculate equivalent quantities in binary, decimal, and hexadecimal number systems.

Unit 4. Introduction to Programming and Programming Languages

General Outcome:

- 4.0 The students should be able to discuss the concept of computer programming, demonstrate steps that must be followed to write a program, and discuss the features of different programming languages.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 4.1 List and describe individual elements of the programming cycle.
- 4.2 Identify flowchart symbols.
- 4.3 Describe the purpose of a flowchart.
- 4.4 Follow flowcharts for increasingly complex problems.
- 4.5 Prepare a flowchart.
- 4.6 Describe other alternative logic planning tools.
- 4.7 Discuss the features of COBOL, FORTRAN, RPG, BASIC, Pascal, Assembly, and "C".
- 4.8 Select the appropriate language for a given problem situation.

Unit 5. Operating Systems

General Outcome:

5.0 The students should be able discuss functions of the operating system.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

5.1 Discuss the purpose of an operating system.

5.2 Discuss Virtual Memory.

5.3 Identify and list certain fundamental functions of a popular microcomputer operating system.

5.4 Describe the following concepts:

5.4.1 Timesharing

5.4.2 Multiprogramming

5.4.3 Multiprocessing

Unit 6. Data Communications

General Outcome:

6.0 The students should be able to identify various data communication configurations.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 6.1 Discuss centralized versus decentralized computer systems.
- 6.2 Discuss the elements of data communications.
- 6.3 Discuss distributed data processing.
- 6.4 Discuss communication channels.
- 6.5 Discuss modems and serial communications adaptors.
- 6.6 Discuss asynchronous vs. synchronous half-duplex transmissions.
- 6.7 Discuss transmission modes.

Unit 7. Management Information Systems

General Outcome:

7.0 The students should be able to relate management decision-making and computer systems.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 7.1 Discuss steps in implementing an MIS.
- 7.2 Discuss a specific example of an MIS including data gathering, programs, and output reports.
- 7.3 Discuss the functions of:
 - 7.3.1 Data Entry Operators
 - 7.3.2 Computer Operators
 - 7.3.3 Librarians
 - 7.3.4 Application Programmers
 - 7.3.5 System Analyst
- 7.4 Discuss database management.

Unit 8. DOS

General Outcome:

8.0 The students should be able to use DOS operating system.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 8.1 Discuss and apply the booting process.
- 8.2 Discuss and apply the internal commands.
- 8.3 Discuss and apply the external commands.

Unit 9. Word Processing Software

General Outcome:

9.0 The students should be able to use word processing software at an elementary level.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 9.1 Discuss and apply the concept of word processing.
- 9.2 Use the Function keys.
- 9.3 Enter and edit text.
- 9.4 Print documents.

Unit 10. Spreadsheet Software

General Outcome:

10.0 The students should be able to describe the concept of a spreadsheet and to generate a simple spreadsheet.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 10.1 Discuss and apply the Main Menu.
- 10.2 Move around the spreadsheet.
- 10.3 Develop formulas and use Function keys.
- 10.4 Print worksheets.
- 10.5 Create graphs.

Unit 11. Database Management Systems

General Outcome:

11.0 The students should be able to describe the concept of a database as well as create and modify a database.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

11.1 Discuss and apply the concept of a database.

11.2 Create file structures.

11.3 Enter the data.

11.4 Perform data modifications.

11.5 Develop and print reports.

Special Student Projects:

The students will execute four to eight (4-8) software applications programs during the term.