CSIT 1300 – INTRODUCTION TO PROBLEM SOLVING

CREDIT HOURS: 3
PREREQUISITES: Eligibility for enrollment in a 1000-level college mathematics course.
GRADE REMINDER: Must have a grade of C or better in each prerequisite course.

CATALOG DESCRIPTION

Introduction to operating systems and file management. Use of spreadsheets and programming languages for solving problems.

PURPOSE OF COURSE

To provide experience using a computer as a problem solving and productivity tool. To provide practice using an operating system and managing files in a networked environment. To develop competencies in utilizing software to organize, analyze and store data. To provide experience using digital resources to locate information. To explore problem solving through programming.

EDUCATIONAL OBJECTIVES

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

1. Demonstrate a knowledge of fundamental computing terminology.
2. Demonstrate basic file management and operating systems skills.
3. Solve problems using application software.
4. Solve problems using a programming language.

COURSE CALENDAR

This course meets for a minimum of 37.5 lecture contact hours during the semester. Students have significant weekly extracurricular assignments which may involve reading, watching videos, or engaging in other forms of preparation. Students will have weekly homework assignments and quizzes, two exams and a final exam. Homework assignments include programming, file management and operating system functions, spreadsheet manipulation and creation, and problem solving activities. Students are expected to prepare for any class assignments or quizzes over the material covered in class or the extracurricular activities. Successful completion of these activities requires at a minimum six additional hours of outside of classroom work each week.

CONTENT **HOURS**

General Computer Units 5
- Course introduction
- Computer history highlights
- System components
- Storage and data representation
- Computers in society (privacy, security, ethics, professions)

Network Environments 2

Data communication principles and equipment
Using local and wide area networks
Accessing digital resources
Downloading and using information from the Internet

Operating Systems 2
Boot process
Launching application software
Utility programs

File management 3
File types, names, directories, and path information
File compression/extraction
Searching for file

Organizing, analyzing and storing data using electronic spreadsheets.....15
Designing and organizing a spreadsheet
Formatting
Generalizing solutions using formulas and functions
Cell addressing (relative, absolute, mixed)
Problem Solving
Data Analysis
Communicating with visualization

Analysis and program design in a block based programming language.....15
The need for programming languages
The need for and creativity in algorithms
Using simple commands
Creating functions
Top down design
APIs
Selection
Iteration
Problem Solving
Data Analysis

Exams (plus a comprehensive final) 3

TOTAL 45

REFERENCES

Schneider and Gersting, Invitation to Computer Science, 7th edition, National Geographic/Cengage Learning.

Parsons, New Perspectives on Computer Science 2016: Comprehensive, 2018, National Geographic/Cengage Learning.

Shelly Cashman Series, Microsoft Office 365 & Excel 2016: Comprehensive,1st Edition.

Introduction to Block Based Programming with Snap: 2017 Edition, HobbyPRESS

Introduction to Block Based Programming with Scratch: 2017 Edition, HobbyPRESS