Lecture Contact Hours: 16-18; Homework Hours: 32-36; Total Student Learning Hours: 48-54
Laboratory Contact Hours: 24-27; Homework Hours: 0; Total Student Learning Hours: 24-27

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

COMPUTER AND INFORMATION SCIENCE 101 – FUNDAMENTALS OF INFORMATION TECHNOLOGY

1 hour lecture, 1.5 hours laboratory, 1.5 units

Catalog Description
Designed for beginners, no previous computer experience is required. This class introduces students to the various careers that IT has to offer. Students will explore PC Hardware, Operating Systems, Networking, Web design, Programming, Security through highly interactive laboratory exercises:
- Build a personal web page
- Build and secure a home or office network
- Identify computer components assemble a PC, and install an operating system
- Program lights, motors, and devices

When completed, students will have the ability to make informed decisions regarding their educational pathway toward a career in Information Technology.

Prerequisite
None

Entrance Skills
Without the following skills, competencies and/or knowledge, students entering this course will be highly unlikely to succeed:
1) Ability to read and follow instructions

Course Content
1) Computer Hardware and Software
2) Networks
3) Cyber Security
4) Web Design
5) Programming
6) Physical Computing

Course Objectives
Students will be able to:
1) Identify the main components of a PC
2) Take apart and reassemble a PC
3) Describe an Operating system
4) Install an Operating system on a PC
5) Describe how computer networks function
6) Design and build a home or small office network
7) Describe common Cybersecurity threats and how to protect a computer and network against these threats.
8) Create a personal Web page
9) Program a Raspberry Pi to control LED's and motors.

Method of Evaluation
A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in the subject matter determined by multiple measurements for

evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system. The following tools will be utilized to assess the student's proficiency:
1) Assignments
2) Quizzes
3) Final Project
4) Exams.

Special Materials Required of Student
Flash Drive

Minimum Instructional Facilities
Classroom equipped with computers and access to the Internet

Method of Instruction
Lecture, Demonstration, Labs, and Out-of-Class Assignments

Out-of-Class Assignments
Using Cisco Netacad and Cisco Packet Tracer, and Raspberry Pi's to complete labs designed to reinforce concepts learned in the curriculum

Texts and References
1) Required (representative example): Information Technology Essentials: An Introduction to Information Technology; Eric Frick, Frick Industries LLC, 2019; ISBN: 1733009426, 9781733009423 May 2019.
2) Supplemental: None

Exit Skills
Students having successfully completed this course exit with the following skills, competencies and/or knowledge:
1) Ability to integrate computer hardware components to create a functioning PC
2) Ability to install and operate a computer operating system
3) Ability to build an operating home or small office network
4) Awareness of computer Cybersecurity issues
5) Create a simple web page
6) Ability to perform basic functions by programming a Raspberry Pi

Student Learning Outcomes
Upon successful completion of this course, students will be able to:
1) Identify and understand the function of PC components and install an Operating system on a PC
2) Build, manage, and secure their home or small office network.
3) Understand current Cybersecurity risks and understand the importance of implementing and maintaining computer security.
4) Describe IT careers and pathways to employment