BAKER COLLEGE
STUDENT LEARNING OUTCOMES

CIS3010 Computer Architecture
3 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Demonstrate an understanding of what systems architecture is, and what the basic piece of systems architecture are.
   a. Explain what systems architecture is.
   b. Describe automated computation and computer capabilities.
   c. Describe computer hardware.
   d. Describe computer types and classes.
   e. Describe networks, the Internet and the World Wide Web.
   f. Describe the role of software.

2. Demonstrate an understanding of data representation and data storage.
   a. Describe data representation and processing.
   b. Describe the goals of computer data representation.
   c. Describe CPU data types and data structures
   d. Describe storage device characteristics.
   e. Demonstrate an understanding of primary storage devices.
   f. Demonstrate an understanding of magnetic, solid state and optical storage.

3. Demonstrate an understanding of processor technology and system integration.
   a. Demonstrate an understanding of CPU instructions and instruction sets.
   b. Demonstrate an understanding of CPU registers and word size.
   c. Describe enhanced processor performance and the physical CPU.
   d. Describe the purpose of the system busses.
   e. Describe interrupt processing.
   f. Describe buffers and caches.

4. Demonstrate an understanding of input/output.
   a. Demonstrate an understanding of print and display output devices.
   b. Demonstrate an understanding of manual input devices.
   c. Demonstrate an understanding of optical and audio input devices.

5. Demonstrate an understanding of computer networks technology.
   a. Demonstrate an understanding of coding and transmitting information.
   b. Describe transmission media.

c. Describe channel organization and communication coordination.
d. Describe network hardware.
e. Describe the OSI network layers.
f. Demonstrate an understanding of network architecture.

6. Demonstrate an understanding of application development and operating systems.
   a. Demonstrate an understanding of programming languages.
   b. Describe compilation and linking.
   c. Describe interpreters.
   d. Demonstrate an understanding of application development tools.
   e. Demonstrate an understanding of resource allocations and process management.
   f. Describe CPU and memory allocation.

7. Demonstrate an understanding of secondary storage management
   a. Describe file management systems.
   b. Describe folder content, structure, and storage allocation.
   c. Demonstrate an understanding of file manipulation and access control.

8. Demonstrate an understanding of Internet services
   a. Describe distributed software architecture.
   b. Demonstrate an understanding of network resource access.
   c. Describe directory services.

9. Demonstrate an understanding of system administration.
   a. Demonstrate an understanding of the basics of system administration.
   b. Describe the acquisition process
   c. Determine the system requirements and performance evaluation.
   d. Demonstrate an understanding of security and the physical environment.

Big Ideas and Essential Questions

Big Ideas

1. Embedded Software
2. Role of the Operating System
3. System Architecture
4. Binary and hexadecimal number conversion
5. Digital Circuits

These SLOs are approved for experiential credit.

Effective: Summer 2018