

## ITM 301 SYLLABUS

### ITM 301 Introduction to Contemporary Operating Systems and Hardware I

**Hours:** 3 credit hours / 60 contact hours; 30 hours lecture, 30 hours lab

**Instructor:** Vasilios "Billy" Pappademetriou

**Textbook, title, author, and year:**

*The Official CompTIA A+ Core 1 Student Guide*, Pam Taylor and James Pengelly, 2019

**Specific course information**

- a. **Catalog description:** Students study the basics of computer architecture and learn to use a contemporary operating system. Hardware requirements, hardware components, software compatibility, and system installation topics are covered along with post-installation, storage, security and system diagnosis, and repair. Topics also include discussion of current and future technology industry trends.
- b. **Prerequisites:** None
- c. **Required.**

**Specific goals for the course**

- a. **Program Educational Objectives**
  1. Problem solve and create innovative answers to provide technology solutions for the problems of business, industry, government, non-profit organizations, and individuals.
- b. **Course Outcomes:**  
ITM301 is a foundation course in the basics of PC functioning from a hardware level to the upper level operating system. The intent is to serve as a basis for practical studies in other topics in IT. Upon completion, a student should be able to understand how a PC functions be able to troubleshoot and repair a PC and understand its workings in a networked environment from a hardware level to OS level. As well, as be comfortable understanding concepts of Linux, virtualization, servers, and tools for managing IT.
- c. **Course student outcomes:**  
Upon completion of this course the student should be able to do the following
  - Recall and discuss the history of modern computing and the Internet
  - Describe fundamental concepts of electricity
    - Explain the operation and employment of power supplies
  - Recall and describe the components of a computer
    - Explain the functioning of processors
    - Describe the purpose and operation of motherboards, buses, architecture, and memory

- Explain the role and operation of storage, monitors, and other peripherals
- Assemble a computer from a set of components
- Demonstrate methods for troubleshooting hardware
- Describe fundamental concepts of networking including physical media, devices, protocols, standards
- Explain and demonstrate the installation and basic configuration of an operating system
- Explain and use operating system utilities
- Describe cloud computing concepts
- Recall and describe laws, regulations, and compliance frameworks that affect IT professionals
- Discuss current events in computing, especially related to security.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline **(ABET Computing Criterion 3.2)**
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles **(ABET Computing Criterion 3.4)**

1. Topics to be covered
  - a. Introduction. IIT Banner, Class basics
  - b. Lab: Virtual Machine Lab
  - c. Installing and Configuring PC Components
  - d. Installing, Configuring, and Troubleshooting Display and Multimedia Devices
  - e. Installing, Configuring, and Troubleshooting Storage Devices
  - f. Installing, Configuring, and Troubleshooting Internal System Components
  - g. Midterm Presentations
  - h. Implementing Client Virtualization and Cloud Computing
  - i. Desktop Teardown & Reassemble (Full Lab Planned)
  - j. Network Infrastructure Concepts
  - k. Supporting and Troubleshooting Laptops
  - l. Supporting and Troubleshooting Mobile Devices
  - m. Installing, Configuring, and Troubleshooting Print Devices
  - n. Configuring and Troubleshooting Networks