ITMO 454 SYLLABUS

ITMO 454 Operating System Virtualization

Hours: 3 credit hours / 45 contact hours

Instructor: Philip Matuszak

Textbook, title, author, and year: *Virtualization Essentials, Second Edition,* Matthew Portnoy, 2016

Specific course information

a. **Catalog description:** Each successful student in this course will be become familiar with hypervisors, virtualization terms, infrastructure considerations, and appropriate use cases. While designed to give an overview of today's Virtualization technologies and methods, students in the course will gain enough practical knowledge to begin deploying various hypervisors and virtual machine environments using current industry standard platforms.
b. **Prerequisites:** None.

Specific goals for the course

a. **Course Outcomes:** This course exposes students to virtualization in an enterprise setting as a tool for the deployment, configuration, and management of server and desktop resources. Students will experience a variety of virtualization environment and products. Students will work with technical implementations of virtualization and learn to design and manage physical to virtual migration.
b. **Course Student Outcomes:**
Students completing this course will be able to:
- Describe and discuss current trends in Operating System Virtualization by experiencing a variety of applications and software packages.
- Explain what a hypervisor is, what it does, and the various types involved and when each is used.
- Demonstrate technical knowledge and limited proficiency in designing and deploying virtualized environments
- Identify and describe various Virtualization platforms and software such as VMware, XenServer, Hyper-V, Virtual box, and VMware workstation, and open source hypervisors.
- Create a proposal and design for migrating an existing physical environment to a virtual environment.

Topics to be covered

a. Introduction to Virtualization & Hypervisors
b. Type 2 Hypervisors and VMs
c. Hardware, Infrastructure, & Type 1 HV
d. VM Creation and Management
e. CPU, Memory, and Consumables
f. Storage
g. Networking
h. Management
i. Availability
j. Virtual Applications
k. VDI
l. Security
m. Backup and Recovery
n. Open Source / Apple Virtualization