MASTER SYLLABUS

CITA 175 – COMPUTER CONCEPTS AND OPERATING SYSTEMS LAB

Created by: Minhua Wang
Updated by: Minhua Wang
A. **TITLE**: Computer Concepts and Operating Systems Lab

B. **COURSE NUMBER**: CITA 175

C. **CREDIT HOURS**: (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

   # Credit Hours: 1
   # Lecture Hours: 2 per week
   # Lab Hours: Other: per week

   Course Length: 15 Weeks

D. **WRITING INTENSIVE COURSE**: No

E. **GER CATEGORY**: None

F. **SEMESTER(S) OFFERED**: Fall/Spring

G. **COURSE DESCRIPTION**: This laboratory course is to accompany the lectures of CITA 170 Computer Concepts and Operating Systems course. Students will disassemble and reassemble PCs, become familiar with hardware components, learn to collect information about the computer system, install and configure system software, and test and troubleshoot the system to apply the various concepts covered in the course.

H. **PRE-REQUISITES/CO-REQUISITES**: 
   a. Pre-requisite(s): none
   b. Co-requisite(s): CITA 170 Computer Concepts and Operating Systems
   c. Pre- or co-requisite(s): none

I. **STUDENT LEARNING OUTCOMES**: 

   By the end of this course and CITA 175 Computer Concepts and Operating Systems Lab course, the student will be able to:

<table>
<thead>
<tr>
<th>Course Student Learning Outcome [SLO]</th>
<th>PSLO</th>
<th>ISLO</th>
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<tbody>
<tr>
<td>a. Describe basic computer hardware architecture and hardware components</td>
<td>3. Demonstrate a solid understanding of the methodologies and foundations of IT</td>
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<tr>
<td>b. Install and configure computer operating systems</td>
<td>3. Demonstrate a solid understanding of the methodologies and foundations of IT</td>
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<tr>
<td>c. Manage basic computer system assembly</td>
<td>3. Demonstrate a solid understanding of the methodologies and foundations of IT</td>
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<tr>
<td>d. Describe the function of typical computer peripherals</td>
<td>3. Demonstrate a solid understanding of the methodologies and foundations of IT</td>
<td>5</td>
</tr>
<tr>
<td>e. Install typical computer peripherals</td>
<td>3. Demonstrate a solid understanding of the methodologies and foundations of IT</td>
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f. Use basic troubleshooting techniques to isolate faults in hardware/software

4. Apply problem solving and troubleshooting skills

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<th>g. Work in teams to troubleshoot and repair computer equipment</th>
<th>2. Identify issues and collaborate on solutions concerning IT in an effective and professional manner</th>
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J. **APPLIED LEARNING COMPONENT:** Yes [X] No [ ]
   - Classroom/Lab

K. **TEXTS:**

L. **REFERENCES:** Internet resources selected by the instructor

M. **EQUIPMENT:** Set of computers connected to the network, set of computers not connected to the network for assembly/disassembly, various peripherals, and some tools and measurement devices.

N. **GRADING METHOD:** A-F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**
   - Lab reports

P. **DETAILED COURSE OUTLINE:** N/A

Q. **LABORATORY OUTLINE:**

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<tr>
<th>LABORATORY</th>
<th>TOPIC</th>
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<tbody>
<tr>
<td>1</td>
<td>Identification of PC parts and gathering of system information with OS tools</td>
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<tr>
<td>2</td>
<td>Assembly and disassembly of a computer system</td>
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<tr>
<td>3</td>
<td>Study of the boot process; reading system resource allocation</td>
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</table>
Form factors and using multimeters
Motherboards – components identification methods
Flash BIOS/Motherboard upgrades
Using third party software to gather system info
Computer Diagnostic/Management Tools – system & third party
Using research tools to find information for a chosen part, such as Kingston website for RAM
Installing and configuring an OS – Windows
Installing and configuring an OS – Linux
Installing application software
Troubleshooting Windows
Troubleshooting common computer system problems