

IT102 Industrial Computer Concepts and Applications (3units)
COURSE SYLLABUS
Spring 2005

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California State University, Fresno <http://www.csufresno.edu>
Industrial Technology Department <http://www.csufresno.edu/indtech>
Cisco Academy Connection <http://cisco.netacad.net>
CSUF Blackboard <http://blackboard.csufresno.edu>

Introduction and Course Description

Basic Computer Systems Maintenance, Support, and Applications .

This course focuses on computer hardware and software and their applications to engineering and manufacturing. Students will learn how to support, maintain, upgrade, and do basic hardware and software troubleshooting.

Students also learn how to use the computer for problem solving, presentation and documentation using presentation software, spreadsheets, database software, word processors, and applications packages. Additional areas addressed in this course include software licensing requirements, use of the Internet and manufacturer's website to download drivers, software updates and technical specifications. This course helps students prepare for CompTIA's A+ certification.

Upon successful completion of this course, the student will receive a **Certificate of Completion** from the **Cisco Academy**

Subject to Change

This syllabus and schedules are subject to change in the event of extenuating circumstances, including currently unscheduled Field Trips or Guest Speakers. If you are absent from class, it is your responsibility to check on announcements made while you were absent.

Student Materials

Internet access (home, work, non-class hours)

IT Essentials I: PC Hardware and Software, 2nd. Edition, Cisco Press On-line

Course Program ISBN: 1587131366

IT Essentials I: PC Hardware and Software Lab companion ISBN: 1587131382

HP IT Essentials I: PC Hardware and Software Engineering Journal and Workbook 2nd Edition ISBN: 1587131374

5 @ 3 ½" Floppy Disks

Examinations and Major Assignments

- Using the Cisco Academy Internet on-line course, IT Essentials I, version 3.0, for learning computer hardware, there will be Chapter Tests (approx. weekly) and a Final Exam on this material.
- A practical computer troubleshooting Skill-based Exam is required.
- A presentation using the PowerPoint skills taught in class together with a written report on a topic related to computers as an integral part of Industrial Technology.
- Late Work is not accepted. Early submission is encouraged.
- Make-up tests must be arranged prior to the original test being given.
- Attendance is mandatory.

Method of Instruction

Cisco, IT Essentials I: PC Hardware and Software, v3.0, on-line course materials

Lecture

Lab Teams

Demonstrations

Student presentations and reports

Grading

The grading system will be uniformly applied to all students. Grades will be based on demonstrated proficiency in subject matter determined by multiple measurements for evaluation: chapter tests, labs, skills demonstration, presentation and report, and a final exam.

Chapter Tests (Cisco, <u>IT Essentials I</u> , on-line tests)	20%
Labs and Worksheets Completed	20%
Team Project Presentation & Report	20%
Computer Troubleshooting Skills-based exam	10%
Mid Term Exam	10%
Final Exam	10%
Participation and Attendance	10%

A= 100-90

B= 89-80

C= 79-70

D= 69-60

F= below 60

Attendance during both the Lecture and Lab is expected and required. Attending an individual Lecture but leaving during the Lab is counted as a “missed class.”

There is no grade penalty if you miss two classes or parts of two classes. A reduction in your course grade over two will be implemented when final grades are assigned.

Primary Learning Outcomes

Acquired competencies include:

- Build, configure, upgrade, and maintain a personal computer system.
- Diagnose and resolve problems of a personal computer system.
- Setup, configure, and maintain a local area network
- Resolve network connectivity problems on a local area network using a systematic troubleshooting approach.
- Install, configure, upgrade, and maintain Microsoft Windows operating systems.
- Utilize appropriate safety and environmental standards.
- Effectively utilize a team-oriented approach to resolve problems.
- Ergonomic needs and considerations
- Demonstrate knowledge of spreadsheet, database, presentation and word processing
- Understand the role of computers in various Industrial Technologies
- Demonstrate competent presentation and report writing skills.

Required Facilities

Computers with access to Internet and LAN

Operating system floppy disks and CDs and utility software

Course Policies & Safety Issues

Appropriate, professional and courteous adult behavior between all people in the classroom is expected at all times. This includes interactions between and among students themselves, the instructor, and any guests or visitors.

Generally, the following activities are considered inappropriate in an educational environment: talking in class, cell phones, chewing gum, tobacco, wearing baseball caps, reading newspapers in class or other behavior distracting to your fellow students or instructor. Tape-recording the lecture is okay. Bringing one-time visitors or guests is allowed if approved by the instructor prior to the class meeting.

Study Groups and Teams have been shown to be a great learning tool for students to grasp complex technical concepts and information, and are thus encouraged. But laboratory accomplishments and final answers MUST reflect the knowledge of the individual, NOT the combined knowledge of the team or group.

University Policies

Students with Disabilities:

Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in Madden Library 1049 (278-2811).

Cheating and Plagiarism:

Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means.

CHEATING IS NOT ACCEPTABLE AT ANY TIME. DO YOUR OWN WORK ALWAYS – whether in class or at home. Study Groups and Teams have been shown to be a great learning tool for students to grasp complex technical concepts and information, and are thus encouraged. But laboratory accomplishments and final answers MUST reflect the knowledge of the individual, NOT the combined knowledge of the team or group.

Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work.

Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the university.

For more information on the University's policy regarding cheating and plagiarism, refer to the Schedule of Courses (Legal Notices on Cheating and Plagiarism) or the University Catalog (Policies and Regulations)

Computers:

At California State University, Fresno, computers and communications links to remote resources are recognized as being integral to the education and research experience.

Every student is required to have his/her own computer or have other personal access to a workstation (including a modem and a printer) with all the recommended software. The minimum and recommended standards for the workstations and software, which may vary by academic major, are updated periodically and are available from Information Technology Services (<http://www.csufresno.edu/ITS/>) or the University Bookstore.

In the curriculum and class assignments, students are presumed to have 24-hour access to a computer workstation and the

necessary communication links to the University's information resources.

Disruptive Classroom Behavior:

The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained.

Differences of viewpoint or concerns should be expressed in terms which are supportive of the learning process, creating an environment in which students and faculty may learn to reason with clarity and compassion, to share of themselves without losing their identities, and to develop and understanding of the community in which they live

Student conduct which disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class.

Course Schedule

WEEK

ASSIGNMENTS

1/25	Read Module 1 and sign the computer-use Information agreement Technology Basics Worksheets 1.3.8 Windows Navigation and Settings 1.5.9 Number Systems Exercises 1.6.6 Lab Safety Checklist Labs 1.3.8 Getting to Know Windows 1.5.3 Boolean Operations 1.5.9 Converting Numbers Overview Complete Module 1 Test
2/1	Read Module 2 How Computers Work Worksheets 2.3.2 PC Power Supply 2.3.8 BIOS/ROM 2.3.9 Expansion Slots 2.4.2 RAM and RAM Sockets 2.5.2 Video Cards

- 2.7.1 Floppy Disk Drive
- 2.7.2 Hard Drive Identification
- 2.7.3 CD-ROM Identification

Labs

- 2.3.6 Motherboard Identification
 - 2.3.8 Identify ROM and BIOS Chips
 - 2.3.9 Identifying Computer Expansion Slots
 - 2.4.2 Identifying RAM and RAM Sockets
 - 2.5.2 Video Card Identification
- Complete Module 2 Test

2/8

Read Module 3 Assembling a Computer

Worksheets

- 3.3.4 Power Supply
- 3.9.1 What is BIOS?

Labs

- 3.3.4 The computer case and power supply
- 3.5.3 Motherboard Installation
- 3.6.4 Floppy Drive, hard drive, DVD, and CD ROM installation
- 3.7.1 Video Card Installation and system booting

Complete Module 3 Test

2/15

Read Module 4

Worksheets

- 4.1.3 Operating System Fundamentals
- 4.2.3 DOS Commands
- 4.2.7 DOS

Labs

- 4.2.3 Basic DOS Commands
- 4.2.4 Creating a DOS Boot Disk

Complete Module 4 Test

2/22

Read Module 5

Worksheets

- 5.1.10 Windows Files and Folders
- 5.2.2 Managing Printers
- 5.4.2 Preparing the Hard Drive
- 5.6.6 Troubleshooting Windows Installation

Labs

- 5.1.6 Changing File Views in Windows

Complete Module 5 Test

3/1

Read Module 7

Labs

- 7.3.2 Installation Demonstration of Windows XP
- 7.5.2 Using Simple File Sharing to Share Files

7.5.3a Remote Desktop Connection
7.5.3b Internet Connection Firewall
7.5.5 Using Windows XP Start Menu and Windows Explorer

Complete Module 7 Test

3/8

Read Module 6

Labs

6.2.1 a Creating Users Accounts
6.2.1.b Assigning Permissions

Complete Module 6 Test

3/15

Read Module 8

Worksheets

8.1.6 Multimedia Devices
8.2.5 Video Accelerators
8.3.3 Sound Cards
8.4.7 CD and DVD Terminology

Labs

8.2.3 Upgrading the Video Accelerator
8.3.4 Sound Card Installation

Complete Module 8 Test

3/22
Spring Recess

No Class

3/29

Read Module 9

Worksheets

9.1.4 RAID
9.4.3 Adding Processors

Labs

9.1.2 Basic Disk-to-Dynamic Disk Conversion

Complete Module 9 Test

Midterm Exam

Midterm Exam Module 1-8

4/5

Read Module 10

Worksheets

10.2.5 Types of Networks
10.4.2 Network Topology
10.6.5 OSI Model, TCP/IP, Protocols
10.8.7 Connecting to the Internet

Labs

10.3.1 NIC Installation
10.3.3 Configuring the NIC to Work with a DHCP Server
10.7.2 Troubleshooting a NIC Using the Ping Command

Complete Module 10 Test

4/12	<p>Read Module 11</p> <p>Worksheets 11.6.1 Paper Jams</p> <p>Labs 11.3.7 Adding an Inkjet Printer to your Computer 11.4.4 Setting Up Print Sharing Capabilities 11.5.4 Managing Files in a Printer Queue</p> <p>Complete Module 11 Test</p>
4/19	<p>Read Module 12</p> <p>Worksheet 12.1.4 Environmental Considerations 12.2.1 Electrostatic Discharge (ESD) 12.3.5 Preventive Maintenance for Components</p> <p>Labs 12.1.2 Using a Digital Multimeter 12.3.5 Cleaning Computer Components 12.4.1 Using the ScanDisk and Defrag Utilities</p> <p>Complete Module 12 Test</p>
4/26	<p>Read Module 13</p> <p>Worksheets 13.1.2 Troubleshooting Basics 13.3.2 Troubleshooting Printers 13.3.4 Troubleshooting Hardware</p> <p>Labs 13.1.7 The Steps of the Troubleshooting Process 13.2.2 Identifying POST Errors</p> <p>Complete Module 13 Test</p>
4/26	<p>Read Module 14</p> <p>Worksheets 14.4.5 Troubleshooting Software</p> <p>Labs 14.7.4 Booting into Safe Mode 14.7.5 Using the Windows 2000 Recovery Console 14.10.3 Windows Registry Backup and Recovery</p> <p>Complete Module 14 Test</p>
5/3	Skill Based Exam
5/5	Skill Based Exam
	Team Project Presentation
5/10	Team Project Presentation
5/17	Final Exam

1:15P-3:15P