ELEC 88.82 Course Outline as of Summer 2003

CATALOG INFORMATION

Dept and Nbr: ELEC 88.82 Title: ADV COMPUTER HDR/A+
Full Title: Advanced Computer Hardware/A+
Last Reviewed: 9/19/2011

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.50	Lecture Scheduled	3.00	8	Lecture Scheduled	24.00
Minimum	1.50	Lab Scheduled	0	3	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	24.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 48.00 Total Student Learning Hours: 72.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	ELEC 299.8

Catalog Description:
The theory and operation of individual peripheral devices. Configuration and upgrading of components and memory. Basic electrical tests. Cable construction and soldering. Fundamentals of networking. Basic diagnostic tests. (IBM compatible standards will be used).

Prerequisites/Corequisites:
Course Completion or Current Enrollment in ELEC 88.81 (or ELEC 299.7)

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: The theory and operation of individual peripheral devices. Configuration and upgrading of components and memory. Basic electrical tests. Cable construction and soldering. Fundamentals of networking. Basic diagnostic tests. (IBM compatible standards will be used). (Grade or P/NP)
Prerequisites/Corequisites: Course Completion or Current Enrollment in ELEC 88.81 (or ELEC 299.7)

Recommended:
Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Summer 2003	Inactive:	Fall 2017
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course the student will be able to:
1. Inspect and evaluate the input, processing, and output functions of a PC.
2. Assess networking systems and devices.
3. Identify and reconcile interrupt requests (IRQ's).
4. Demonstrate elementary soldering techniques.
5. Perform basic electrical measurements.
6. Construct a null-modem connect cable.
7. Evaluate the operation of the computer, utilizing diagnostic tests.
8. Perform A+ Certification practice tests.

Topics and Scope:

1. Functions and components of a PC
 a. Input circuits and data
 b. Processing of data
 c. Output circuits
 d. Data collecting circuitry
2. Network structure
 a. Between systems
 b. Between devices
3. IRQs
 a. Identification and classification of IRQs and protocols
 b. Reconciling different interrupt status
4. Soldering and soldering repair skills
 a. Component identification
 b. Soldering techniques

c. Component removal techniques
d. Repair of damaged circuit boards
5. Electrical units and measurement
a. Volt, OHM, Ampere, Watt
b. Ohm's law, Watt's law
c. Engineering prefix notation
d. Three significant figures and data collection
e. Typical diagnostic equipment
f. Correct use of test equipment to measure current
g. Correct use of test equipment to measure voltage
6. Diagnostic test
a. Software systems and troubleshooting
b. Classification of tests
7. A+ Certification
a. Testing preparation and general review of questions
b. Process for earning certification

Assignment:

1. Promote correct PC operation by appropriately connecting mother boards, peripherals, and other various output devices.
2. Examine and install internal drives and their connections to the motherboard.
3. Manage system configuration to accommodate peripheral equipment.
4. Identify and classify cable and connector types and uses.
5. Solder, remove, and resolder electronic components and cables.
6. Design, construct, and troubleshoot (using voltage and current measurements) a null-modem cable.
7. Successfully complete the A+ Certification Core Domain (hardware) review assessments.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

None	Problem solving 0 - 0%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Class performances	Skill Demonstrations 30 - 70%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion	Exams 30 - 70%

Other: Includes any assessment tools that do not logically fit into the above categories.

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Upgrading and Repairing PC's, 7th ed. 1999, Scott Mueller. QUE
A+ Certification Training Kit, 3rd ed., 2001, Microsoft.
How Computers Work, Millennium Edition, 2000 QUE