ELECTRONICS (ELEC)

ELEC 10A
MICROCOMPUTER REPAIR AND SERVICE
2 UNITS

Pass/No Pass or Grade is Allowed
Fee: $10
Recommended Preparation: RDG 56 or equivalent or through the
Southwestern College multiple measures placement processes.
Lecture 1.50 hour, laboratory 1.50 hour
Offered: ALL
Provides instruction on microcomputer maintenance and service.
Includes training in safety, hardware, software, computer assembly,
customer relations, testing, troubleshooting, and replacing computer
components. Includes operating system, applications, command line for
technicians, and software diagnostics. [D] (Same as: CIS 10A)

ELEC 10B
MICROCOMPUTER HARDWARE AND SOFTWARE UPGRADE
2 UNITS

Pass/No Pass or Grade is Allowed
Fee: $10
Recommended Preparation: CIS 10A or ELEC 10A or equivalent; RDG 56
or equivalent or through the Southwestern College multiple measures
placement processes.
Lecture 1.50 hour, laboratory 1.50 hour
Offered: ALL
Covers microcomputer hardware and software installation, upgrades,
maintenance, and troubleshooting. Includes monitors, hard disk, internal
and external tape backup, printers, memory, Compact Disk Read-Only
Memory (CD-ROM), and sound cards. Covers Disk Operating System
(DOS) and Windows. [D] (Same as: CIS 10B)

ELEC 100
INTRODUCTION TO ELECTRONICS
3 UNITS

Grade Only
Fee: $3
Lecture 3 hours
Offered: ALL
Survey course covering the basic electrical and electronic concepts
and the modern electronic systems in daily use. Includes DC circuits,
magnetics, AC circuits, audio and radio, digital electronics and
computers, small appliances, and introduction to automotive electronics.
Designed to supply essential knowledge in this area in a basic
mathematical manner and can be taken by both electronics and non-
electronics majors. [D; CSU]

ELEC 109
OFFICE SUPPORT AND NETWORK TECHNICIAN
6 UNITS

Pass/No Pass or Grade is Allowed
Recommended Preparation: RDG 56 or equivalent or through the
Southwestern College multiple measures placement processes.
Lecture 5 hours, laboratory 5 hours
Offered: ALL
Introduces students to entry-level and upgrade training in computer
maintenance and support; hardware upgrade and expansion; office
equipment maintenance and service; data, voice, and video cabling
installation; and customer relations. [D; CSU] (Same as: CIS 119)

ELEC 142
**NETWORKING ACADEMY FUNDAMENTALS (CISCO CERTIFICATION
PREPARATION)**
3 UNITS

Pass/No Pass or Grade is Allowed
Fee: $1
Recommended Preparation: CIS 130 or CIS 139 or equivalent.
Lecture 2 hours, laboratory 3 hours
Offered: ALL
Introduces network terminology, standards and protocols, Local
Area Networks (LANs), Wide Area Networks (WANs), Open System
Interconnection (OSI) models, cabling, routers, router programming,
topologies, and Internet Protocol (IP). Emphasizes the use of
decision-making and problem-solving techniques in applying science,
mathematics, communication, and social studies concepts to solve
networking problems. [D; CSU] (Same as: CIS 142)

ELEC 260
MICROCOMPUTER SYSTEMS AND A+ CERTIFICATION
4 UNITS

Grade Only
Fee: $11
Recommended Preparation: ELEC 10A and ELEC 10B, or equivalent.
Lecture 4 hours, laboratory 2 hours
Offered: FALL, SPRING
Covers the main hardware and software (operating system) aspects of
IBM comparable personal computers to prepare students for occupations
in this field and to pass the National A+ Certification Examination of
Proficiency. [D; CSU]

ELEC 265
COMPUTER NETWORKING FOR N+ CERTIFICATION
4 UNITS

Grade Only
Fee: $2
Recommended Preparation: ELEC 260 or equivalent.
Lecture 3 hours, laboratory 3 hours
Offered: ALL
Includes the main hardware and software aspects of setting up and
maintaining a computer network to prepare students for occupations in
this field and to pass the National Network Certification Examination of
Proficiency. [D; CSU]

ELEC 276
INTRODUCTION TO SECURITY +
4 UNITS

Grade Only
Recommended Preparation: ELEC 260 and ELEC 265, or equivalent.
Lecture 3 hours, laboratory 3 hours
Offered: ALL
Surveys important foundational principles for securing a network and
managing risk in preparation for the Security+ Exam. Covers topics
such as access control, identity management, SCADA, cloud computing,
cryptography, mitigation, and deterrent techniques. [D; CSU]

ELEC 290
ELECTRONICS COOPERATIVE WORK EXPERIENCE I
2-4 UNITS

Grade Only
Recommended Concurrent Enrollment: BUS 136.
Limitation on Enrollment: Declared Electronics major.
Laboratory 12 hours
Offered: ALL
Introduces principles and skills acquired in the Electronics majors to on-the-job assignments. One unit of credit is granted for every 54 hours of work experience. Credit may be accrued at the rate of 2 to 4 units per semester for a maximum of fourteen units. The job supervisor and instructor will evaluate each student's job performance. [D; CSU]

ELEC 291
ELECTRONICS COOPERATIVE WORK EXPERIENCE II
2-4 UNITS

Grade Only
Recommended Concurrent Enrollment: Enrollment in one other class directly related to the Electronics major in order to apply learned theory in a practical hands-on- setting through an internship class.
Prerequisite: ELEC 290 or equivalent.
Limitation on Enrollment: Declared Electronics major.
Laboratory 12 hours
Offered: ALL
Applies beginning-level principles and skills acquired in the Electronics majors to on-the-job assignments. One unit of credit is granted for every 54 hours of work experience. Credit may be accrued at the rate of 2 to 4 units per semester for a maximum of fourteen units. The job supervisor and instructor will evaluate each student's job performance. [D; CSU]

ELEC 292
ELECTRONICS COOPERATIVE WORK EXPERIENCE III
2-4 UNITS

Grade Only
Recommended Concurrent Enrollment: Enrollment in one other class directly related to the Electronics major in order to apply learned theory in a practical hands-on setting through an internship class.
Prerequisite: ELEC 291 or equivalent.
Limitation on Enrollment: Declared Electronics major.
Laboratory 12 hours
Offered: ALL
Provides intermediate-level principles and skills acquired in the Electronics majors to on-the-job assignments. One unit of credit is granted for every 54 hours of work experience. Credit may be accrued at the rate of 2 to 4 units per semester for a maximum of fourteen units. The job supervisor and instructor will evaluate each student's job performance. [D; CSU]

ELEC 293
ELECTRONICS COOPERATIVE WORK EXPERIENCE IV
2-4 UNITS

Grade Only
Recommended Concurrent Enrollment: Enrollment in one other class directly related to the Electronics major in order to apply learned theory in a practical hands-on setting through an internship class.
Prerequisite: ELEC 292 or equivalent.
Limitation on Enrollment: Declared Electronics major.
Laboratory 12 hours
Offered: ALL
Covers advanced-level principles and skills acquired in the Electronics majors to on-the-job assignments. One unit of credit is granted for every 54 hours of work experience. Credit may be accrued at the rate of 2 to 4 units per semester for a maximum of fourteen units. The job supervisor and instructor will evaluate each student's job performance. [D; CSU]

ELEC 299
INDEPENDENT STUDY
1-3 UNITS

Pass/No Pass or Grade is Allowed
Limitation on Enrollment: Eligibility for independent study.
Lecture 3 hours
Offered: ALL
Individual study or research in some area of electronics of particular interest to the student and not included in regular courses of the college. (May be taken twice for credit.) [D; CSU]