Engineering Technology – Bench Technician

ASSOCIATE OF APPLIED SCIENCE DEGREE (AAS) REQUIRED CREDITS: **65** DEGREE CODE: **ETBT-AAS**

DESCRIPTION

The Associate of Applied Science Degree in Engineering Technology with Electronics emphasis prepares students to assist in providing support for engineering functions or to function as an Electronics Technician. Instruction includes analog and digital circuit design, implementation and testing, fabrication techniques, telecommunications, microprocessor programming, and interface. Specialize concentration instruction includes topics such as in-depth analysis of analog and digital circuits, electrical and power supply troubleshooting, systems such as radar and microwaves, computer and network fundamentals, medical terminology, healthcare organizational dynamics, and fluid dynamics. Accredited by the Engineering Technology Accreditation Commission of ABET, **www.abet.org**.

This two-year program provides students with the methods and procedures used in engineering organizations and by electronics technicians in a bench repair, defense contractor, and biomedical equipment repair functions. Instruction takes place in a hands-on, state-of-the-art environment.

Educational Objectives - Within a few years of graduation: Graduates from CSN's Engineering Technology with Electronics emphasis program will demonstrate the ability to apply circuit analysis and design, computer programming, analog and digital electronics, and microprocessor/microcontroller principles to install, test, troubleshoot and maintain electrical and electronic systems as bench, defense contractor, and biomedical equipment technicians. Graduates will have effective technical communication skills necessary to function on professional teams as technicians or managers. Graduates are prepared to enter the work force with professional work ethics and with the commitment to lifelong learning, quality, and continuous improvement through the clear ability to assume increasing levels of responsibility in both industry and community.

STUDENT LEARNING OUTCOMES

- Demonstrate knowledge of safety procedures and proper electronics fabrication techniques.
- Identify components, design, construct, and test various circuits to include filters and construct a Bode Plot of an amplifier's frequency response.
- Construct, analyze and test various types of digital circuits and microprocessor/microcontroller circuits. Demonstrate a working knowledge writing programs to control other devices.
- Demonstrate commitment to quality, timeliness, continuous improvement, while showing an understanding of the need for and an ability to engage in continuing professional development.
- Demonstrate a working knowledge of common modulation/transmission methods to include such as AM, FM and Pulse modulation. The Bench concentration will also focus upon more advanced analog/digital circuits.

PLEASE NOTE - The courses listed below may require a prerequisite or corequisite. Read course descriptions before registering for classes. All MATH and ENG courses numbered 01-99 must be completed before reaching 30 total college-level credits. No course under 100-level counts toward degree completion.

GENERAL EDUCATION REQUIREMENTS (27 CREDITS)

MATHEMATICS (3 credits)
Recommended: ET 111B Mathematics for Electronics Applications

ENGLISH COMPOSITION (3-5 credits)
ENG 100 or 101 or 113

COMMUNICATIONS (3 credits)
Recommended: COM 115 Applied Communication

HUMAN RELATIONS (3 credits)
Recommended: HIST 106 European Civilization Since 1648

NATURAL SCIENCE (8 credits)
Required: EGG 131 **and** 131L **and** 132

FINE ARTS/HUMANITIES/SOCIAL SCIENCE (3 credits)
Recommended: MUS 231 Recording Techniques I

U.S. AND NEVADA CONSTITUTIONS (4-6 credits)
Recommended: PSC 101 Introduction to American Politics

SPECIAL PROGRAM REQUIREMENTS (38 CREDITS)

CORE REQUIREMENTS (38 credits)

ET 104B	Fabrication and Soldering Techniques	2
ET 106B	Test Equipment Operation	3
ET 131B	DC for Electronics	4
ET 132B	AC for Electronics	4
ET 212B	Digital Logic I	4
ET 213B	Digital Logic II	4
ET 220B	Solid State Devices and Circuits I	4
ET 222B	Solid State Devices and Circuits II	4
ET 228B	Data Acquisition	3
ET 282B	Microprocessors I	3
ET 293B	Telecommunication Transmission Methods	3

Choose one from the following (0-3 credits)

IS 100B	Core Computing Competency	0
IS 101	Introduction to Information Systems	3

See Degree Plan on next page.

NOTE
- Course numbers with the "B" suffix may be non-transferable for a NSHE baccalaureate degree.
- Course numbers with the "H" suffix are designated Honors-level courses and can be used to fulfill equivalent general education requirements. For more information visit www.csn.edu/honors.
- In no case, may one course be used to meet more than one requirement except for the Values and Diversity general education requirement (only AA, AS, and AB degrees) which may be used to fulfill the corresponding general education or emphasis requirement.
- Students may elect to graduate using the degree requirements in effect at the time of matriculation, or when they declared or changed major or the current catalog. If a program is official after a student has matriculated, the student may choose the degree requirements of the new program. In no case may a student use a catalog which is more than six years old at the time of graduation.

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FULL-TIME STUDENT DEGREE PLAN

Plan can be modified to fit the needs of part-time students by adding more semesters.

FIRST SEMESTER	**Credits**
ET 111B Mathematics for Electronics Applications	3
ENG 100 or 101 or 113	3-5
HIST 106 European Civilization Since 1648	3
ET 104B Fabrication and Soldering Techniques	2
ET 131B DC for Electronics	4
TOTAL CREDITS	***15-17***

SECOND SEMESTER	**Credits**
COM 115 Applied Communication	3
ET 132B AC for Electronics	4
ET 212B Digital Logic I	4
ET 106B Test Equipment Operation	3
IS 100B or IS 101	0-3
TOTAL CREDITS	***14-17***

THIRD SEMESTER	**Credits**
ET 220B Solid State Devices and Circuits I	4
ET 228 Data Acquisition	3
TOTAL CREDITS	***7***

FOURTH SEMESTER	**Credits**
EGG 131 and 131L	4
PSC 101 Introduction to American Politics	4
ET 213B Digital Logic II	4
ET 282B Microprocessors I	3
TOTAL CREDITS	***15***

FIFTH SEMESTER	**Credits**
EGG 132 Technical Physics II	4
MUS 231 Recording Techniques I	3
ET 222B Solid State Devices and Circuits II	4
ET 293B Telecommunications Transmission Methods	3
TOTAL CREDITS	***14***

DEGREE PLAN TOTAL CREDITS **65-70**