

Engineering Technology – Electronics – Biomedical Equipment Technician

ASSOCIATE OF APPLIED SCIENCE DEGREE (AAS)

REQUIRED CREDITS: 72

DEGREE CODE: ETBET-AAS

DESCRIPTION

The Associate of Applied Science Degree in Engineering Technology with Electronics – Biomedical Equipment Technician 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, microprocessor programming and interface, medical terminology, healthcare organizational dynamics, and fluid dynamics. Accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

This two-year program provides students with the methods and procedures used in engineering organizations and by electronics technicians in 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 – Biomedical Equipment Technician 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, professional ethics, and respect for diversity while showing an understanding of the need for and an ability to engage in continuing professional development.
- Characterize the computers/networks used in the healthcare industry, demonstrate an ability to explain fluid dynamics, common medical terminology, health-care dynamics, and the fundamentals functional characteristics of the human body.

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)**

Choices: ET 111B or MATH 127 or above

Recommended: ET 111B Mathematics for Electronics Applications

ENGLISH COMPOSITION (3-5 credits)

Choices: ENG 100 or 101 or 113

COMMUNICATIONS (3 credits)

Choices: COM 115 or ENG 107

Recommended: COM 115 Applied Communication

HUMAN RELATIONS (3 credits)

Choices: See AAS policy p. 51 for courses

Recommended: ALS 101 College Success

NATURAL SCIENCE (8 credits)

Required: EGG 131 and 131L and 132

FINE ARTS/HUMANITIES/SOCIAL SCIENCE (3 credits)

Choices: See AAS policy p. 51 for courses

U.S. AND NEVADA CONSTITUTIONS (4-6 credits)

Choices: See AAS policy p. 51 for courses

Recommended: PSC 101 Introduction to American Politics

SPECIAL PROGRAM REQUIREMENTS (45 CREDITS)**CORE REQUIREMENTS (42 credits)**

| | | |
|----------|---|---|
| CIT 112B | Network+ | 3 |
| CIT 114B | IT Essentials | 4 |
| ET 104B | Fabrication and Soldering Techniques | 2 |
| ET 131B | DC for Electronics | 4 |
| ET 132B | AC for Electronics | 4 |
| ET 212B | Digital Logic I | 4 |
| ET 220B | Solid State Devices and Circuits I | 4 |
| ET 228B | Data Acquisition | 3 |
| ET 282B | Microprocessors I | 3 |
| HHP 123B | Introduction to the Human Body | 4 |
| HIT 105B | Healthcare Delivery Systems | 3 |
| HIT 118B | Language of Medicine | 3 |
| MT 108B | Fluid Power (Pneumatics, Hydraulics, Instrumentation) | 4 |

Digital Literacy Requirement (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*Add more semesters to modify this plan to fit part-time student needs.*

| FIRST SEMESTER | Credits |
|---|----------------|
| ET 111B Mathematics for Electronics Applications | 3 |
| ENG 100 or 101 or 113 | 3-5 |
| ALS 101 College Success | 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 |
| CIT 114B IT Essentials | 4 |
| IS 100B or IS 101 | 0-3 |
| TOTAL CREDITS | 15-18 |
| THIRD SEMESTER | Credits |
| ET 220B Solid State Devices and Circuits I | 4 |
| ET 228 Data Acquisition | 3 |
| Complete AAS Fine Arts/Humanities/Social Science p.51 | 3 |
| TOTAL CREDITS | 10 |
| FOURTH SEMESTER | Credits |
| EKG 131 and 131L | 4 |
| PSC 101 Introduction to American Politics | 4 |
| CIT 112B Network+ | 3 |
| HHP 123B Introduction to the Human Body | 4 |
| TOTAL CREDITS | 15 |
| FIFTH SEMESTER | Credits |
| EKG 132 Technical Physics II | 4 |
| ET 282B Microprocessors I | 3 |
| MUS 231 Recording Techniques I | 3 |
| HIT 105B Healthcare Delivery Systems | 3 |
| HIT 118B Language of Medicine | 3 |
| MT 108B Fluid Power (Pneumatics, Hydraulics, Instrumentation) | 4 |
| TOTAL CREDITS | 17 |
| DEGREE PLAN TOTAL CREDITS | 72-77 |

