

Electronics

Electronic Systems Technology

Associate of Applied Science Degree
Sioux City Campus

Program Overview and Opportunities:

Rapid advancement in the electronics field over the last three decades has fueled tremendous changes in all technically-oriented fields of our modern society. Virtually every industry uses electronic systems to some degree, including aviation, automotive, banking, communication, computing, drafting, entertainment, farming, global positioning, transportation, etc. Applications to design, analyze, measure, visualize, simulate, and control electronic systems will be studied.

Students will explore numerous electronic systems, including communication systems, consumer (Smart Home) systems, and industrial systems. Manufacturing, servicing, operations, design and development are a few of the technical fields in which Electronic Systems Technology graduates will find meaningful employment.

According to the Bureau of Labor Statistics, employment of electrical and electronics technicians is expected to grow by 7 percent. Electronic equipment will become more sophisticated and will be used more frequently as businesses strive to lower costs. Companies increasingly will rely on repairers because malfunctions that idle commercial and industrial equipment will continue to be costly. (Occupational Outlook Handbook. Bureau of Labor Statistics 2006-2007.)

Program Advisors

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Electronic Systems Technology Curriculum

Course #	Title	Credits
EGT 400	PLTW-Intro to Engineering Design	3
EGT 410	PLTW-Principles of Engineering	3
EGT 420	PLTW-Digital Electronics	3
CSC 110	Introduction to Computers	3
MAT 772	Applied Math	3
ELT 382	Electronic Circuit Analysis I	3
ELT 560	Electronic Circuit Analysis II	4
NET 123	Computer Hardware Basics	4
NET 143	Networking Essentials	3
ELT 118	Programmable Controllers	2
PEA, PEC or PHE	Healthful Living/Leisure Elective	2
COM 723	Workplace Communications	3
PSY 102	Human and Work Relations	3
ELT 154	Industrial Electronics	3
ELT 402	Introduction to Communication Systems	3
ELT 431	Telephone/Data Circuits	3
ELT 690	Technology Integration I	3
ELT 691	Technology Integration II	3
ELT 490	Microwave/Lightwave Systems	4
ELT 545	Computer-Aided Circuit Analysis	3
ELT 856	Communication Projects	3
ELT 404	Advanced Communications	4
Program Total		68

* Denotes courses commonly articulated with area high schools.

+ College transfer courses may be substituted for these courses. See advisor.

See course descriptions in the back of the catalog for more detailed information about course prerequisites and co-requisites.

The courses listed above are grouped in the order that they should be taken each semester. Please see an Electronics Systems Technology program advisor to ensure correct course sequence.

Electronics

Biomedical Electronics

Certificate
Sioux City Campus

Program Overview and Opportunities:

The ever-increasing reliance on electronics to test and monitor patients in health care facilities has created a need for biomedical electronics technicians, both in the health care industry and the electronic equipment industry. Biomedical electronic technicians must be competent in interpretation of schematics and wiring diagrams of electronic equipment used in hospitals. In addition to these skills, students in the Biomedical Electronics program are also trained in logical troubleshooting techniques and in the electronic principles needed to properly understand and analyze highly sophisticated equipment.

Program graduates are hired by hospitals and clinics, manufacturers, contract service firms, and equipment distributors.

Students must have completed Electronics Systems Technology A.A.S. degree to enroll in these courses.

Are You a Part-time Student?

See a program advisor for a list of available courses for part-time students and to develop an individualized plan of study.

Biomedical Electronics Curriculum

Course #	Title	Credits
BIO 163	Essentials of Anatomy and Physiology	4
ELT 117	Electronics in Medicine	3
Program Total		7

See course descriptions in the back of the catalog for more detailed information about course prerequisites and co-requisites.

Please see an Electronic Maintenance Technology program advisor to ensure correct course sequence.

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Electronic Musical Instrument Repair

Certificate
Sioux City Campus

Program Overview and Opportunities:

This certificate program was developed to provide training to students interested in repairing electronic instruments used in live performances in the entertainment industry. Courses will consist of both theory and hands-on instruction.

According to the Bureau of Labor Career Advice section, the demand for people trained to repair musical instruments has increased due to the number of people employed as musicians and to the slight increase of students of all ages playing musical instruments. Because instruments are quite expensive to purchase, growing numbers of instrument repairers will be needed to work on rental equipment leased to students, schools and other organizations. (Occupational Outlook Handbook. Bureau of Labor Statistics 2006-2007.)

Electronic Musical Instrument Repair Curriculum

Course #	Title	Credits
ELT 680	Guitar and Amplifier Electronics	3
ELE 112	Basic Electrical Theory (3) OR	
ELT 110	Electronics	2
Total Credits		5 or 6

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Electronics

Smart Home Technology Specialist

Certificate
Sioux City Campus

Program Overview and Opportunities:

This certificate program was developed to provide training in Home Technology Integration (Smart Home Technologies).

Students will master the core competencies needed for the installation, integration, and troubleshooting of the following automated home sub-systems: Home Security, Audio/Video, Computer Networks, Electrical Wiring, HVAC (Heating/Air Conditioning Systems), Cable/Satellite, Broadband, Telecommunications, and Structured Wiring.

This certification prepares students for the national certification exams which can be taken at the Western Iowa Tech Testing Center. Students must register and pay for the tests online via the VUE Testing Center website at www.vue.com.

Employment opportunities continue to grow. As home electronic equipment costs decrease more consumers are investing in home electronics equipment and systems. Certified technicians and sales professionals are needed to meet this demand.



Are You a Part-time Student?

See a program advisor for a list of available courses for part-time students and to develop an individualized plan of study.

Smart Home Technician Curriculum

Course #	Title	Credits
ELE 112	Basic Electronic Theory	3
NET 123	Computer Hardware Basics	4
NET 132	Operating Systems Software Basics	3
ELT 690	Technology Integration I	3
ELT 691	Technology Integration II	3
NET 143	Essentials of Networking	3
Program Total		19

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Please see an Electronics Systems Technology program advisor to ensure correct course sequence.