

Electronics Technology, AAS

Electronics technology influences almost every aspect of modern life. Skilled electronics technicians are needed to support growth in this industry. These technicians fabricate, test, install, operate, troubleshoot, and maintain highly technical systems such as communications systems, computers and computer networks, industrial process control systems, avionics, biomedical electronics, and photonics systems.

The program focuses on the underlying principles of electronic devices, circuit analysis, and digital electronics and will provide a broad systems view of electronics. Students in the electronics program work with excellent facilities that include some of the latest laboratory equipment.

Graduates of the program will have the opportunity for employment in one of today's most challenging and exciting career fields.

(Major Code 2690; CIP Code 47.0101)

Electronics Technology Program web page (<http://www.jccc.edu/academics/credit/electronics-technology/>)

Program Learning Outcomes

Johnson County Community College (JCCC) is committed to offering high-quality affordable programs that focus on developing knowledge and skills conducive to life-long learning. Both the General Education Student Learning Outcomes (<https://www.jccc.edu/about/leadership-governance/administration/institutional-effectiveness-branch/outcomes-assessment/learning-outcomes.html>) and Institutional Learning Outcomes (<https://www.jccc.edu/about/leadership-governance/administration/institutional-effectiveness-branch/outcomes-assessment/institutional-learning-outcomes.html>) convey JCCC's approach to programmatic outcomes. Additionally, students who successfully complete the Electronics Technology program from JCCC will be able to:

- Gather, evaluate, and communicate technical information efficiently.
- Utilize basic test equipment (multimeters, power supplies, and oscilloscopes) to characterize circuit operation and diagnose fault conditions.
- Analyze, troubleshoot, and repair electronic circuits including analog / communication, digital / microprocessor / microcontroller.
- Apply effective soldering techniques in construction and repair of electronic equipment.
- Use appropriate development tools to input, configure, and document software for microprocessor and microcontroller-based systems; construct, document, and troubleshoot complete microprocessor/microcontroller systems.
- Configure, maintain, and troubleshoot personal computer systems.
- Utilize specialized equipment such as spectrum analyzers and vector network analyzers to measure the performance of radio frequency (RF) communication systems.

Associate of Applied Science Degree

First Semester

Code	Title	Hours
COMS 155	Workplace Skills	1
ELEC 120	Introduction to Electronics	3
ELEC 125	Digital Electronics I	4
ELEC 134	DC Circuits*	4
MATH 130	Technical Mathematics I*	3
Total Hours		15

Second Semester

Code	Title	Hours
CS 134	Programming Fundamentals	4
ELEC 160	Semiconductor Devices I*	3
ELEC 227	Digital Electronics II*	4
ELEC 234	AC Circuits*	4
MATH 131	Technical Mathematics II*	3
Total Hours		18

Third Semester

Code	Title	Hours
Program Elective (see below)		3
ELEC 235	Digital Systems and Applications*	4
ELEC 260	Semiconductor Devices II*	4
ENGL 121	Composition I* (SGE 010)	3
or ENGL 119	College Composition I with Review*	
Social and Behavioral and Sciences Elective ^		3
Total Hours		17

Fourth Semester

Code	Title	Hours
Program Elective (see below)		6
ELEC 240	Electronic Communication Systems*	4
HPER 200	First Aid and CPR	2
Arts and Humanities Elective^		3
Total Hours		15

Total Program Hours: 65

Program Electives

Code	Title	Hours
AET 140	Actuator and Sensor Systems*	3
AET 160	Programmable Logic Controllers I*	3
AET 185	LAN Cabling and Installation	3
AET 240	Industrial Robotics*	3
BIOL 144	Human Anatomy and Physiology*	5
COLL 150	Job Search Skills	1
CS 200	Concepts of Programming Algorithms Using C++*	4
CS 201	Concepts of Programming Algorithms using C#*	4
CS 205	Concepts of Programming Algorithms using Java*	4
ELEC 212	Fundamentals of Light and Lasers*	3
ELEC 251	Laser Systems and Applications*	3
ELEC 252	Specialized Lasers and System Integration*	3
ELEC 271	Electronics Internship*	1
ENGL 123	Technical Writing I*	3
HC 130	Medical Terminology for Healthcare Professions	3
IT 119	CompTIA A+ Core 1	3
IT 120	CompTIA A+ Core 2	3
IT 141	Introduction to Networks	3

* This course has registration requirements.

^ See all AAS general education electives (<https://catalog.jccc.edu/archives/2025-26/degree requirements/associate-applied-science/>).

Kansas Systemwide General Education (SGE) Key

- English SGE ⁰¹⁰
- Communications SGE ⁰²⁰
- Mathematics and Statistics SGE ⁰³⁰
- Natural and Physical Sciences SGE ⁰⁴⁰
- Social and Behavioral Sciences SGE ⁰⁵⁰

- Arts and Humanities SGE ⁰⁶⁰
- Cavalier Credits SGE ⁰⁷⁰

JCCC General Education Requirements

English and Communications, Associate of Applied Science (3 hrs.)

Code	Title	Hours
ENGL 121 or ENGL 119	Composition I* (SGE 010) College Composition I with Review*	3
If your specific degree program requires a communications elective, select one from the following:		3
COMS 120	Interpersonal Communication (SGE 020) (SGE 070)	
COMS 121	Public Speaking (SGE 020) (SGE 070)	
COMS 125	Personal Communication (SGE 020) (SGE 070)	
ENGL 122	Composition II* (SGE 010) (SGE 070)	
ENGL 123	Technical Writing I* (SGE 060) (SGE 070)	
ENGL 140	Writing for Interactive Media* (SGE 060) (SGE 070)	

Arts and Humanities, Associate of Applied Science (3 hrs.)

Code	Title	Hours
Art History		
ARTH 180	Art History: Ancient to Medieval (SGE 060) (SGE 070)	3
ARTH 182	Art History: Renaissance to Modern (SGE 060) (SGE 070)	3
ARTH 184	Art History: Twentieth Century (SGE 060) (SGE 070)	3
ARTH 188	History of Photography (SGE 060) (SGE 070)	3
ARTH 200	Women, Art, and Society (SGE 060) (SGE 070)	3
Communications		
COMS 180	Intercultural Communication (SGE 070)	3
English		
English (Literature)		
ENGL 130	Introduction to Literature* (SGE 060) (SGE 070)	3
ENGL 214	Environmental Literature* (SGE 060) (SGE 070)	3
ENGL 215	U.S. Latino and Latina Literature* (SGE 060) (SGE 070)	3
ENGL 216	African-American Literature* (SGE 060) (SGE 070)	3
ENGL 217	Literature by Women* (SGE 060) (SGE 070)	3
ENGL 227	Introduction to Poetry* (SGE 060) (SGE 070)	3
ENGL 230	Introduction to Fiction* (SGE 060) (SGE 070)	3
ENGL 232	Children's Literature* (SGE 060) (SGE 070)	3
ENGL 235	Drama as Literature* (SGE 060) (SGE 070)	3
ENGL 236	British Literature to 1800* (SGE 060) (SGE 070)	3
ENGL 237	British Literature after 1800* (SGE 060) (SGE 070)	3
ENGL 246	American Literature I* (SGE 060) (SGE 070)	3
ENGL 247	American Literature II* (SGE 060) (SGE 070)	3
ENGL 254	Masterpieces of the Cinema* (SGE 060) (SGE 070)	3
English (Writing)		
ENGL 222	Advanced Composition: The Art of the Essay* (SGE 060) (SGE 070)	3
ENGL 223	Introduction to Creative Writing* (SGE 060) (SGE 070)	3
ENGL 257	Generative AI and The Future of Writing* (SGE 060) (SGE 070)	3
Film and Media Studies		
FMS 100	Intro to Film (SGE 060) (SGE 070)	3
FMS 200	Intro to Filmmaking and Media Aesthetics (SGE 060) (SGE 070)	3

Foreign Languages

FL 120	Elementary German I (SGE 060) (SGE 070)	5
FL 121	Elementary German II* (SGE 060) (SGE 070)	5
FL 130	Elementary Spanish I (SGE 060) (SGE 070)	5
FL 131	Elementary Spanish II* (SGE 060) (SGE 070)	5
FL 140	Elementary French I (SGE 060) (SGE 070)	5
FL 141	Elementary French II* (SGE 060) (SGE 070)	5
FL 165	Elementary Chinese I (SGE 060) (SGE 070)	5
FL 166	Elementary Chinese II* (SGE 060) (SGE 070)	5
FL 170	Elementary Japanese I (SGE 060) (SGE 070)	5
FL 171	Elementary Japanese II* (SGE 060) (SGE 070)	5
FL 182	Intermediate Japanese I* (SGE 060) (SGE 070)	5
FL 183	Intermediate Japanese II* (SGE 060) (SGE 070)	5
FL 220	Intermediate German I* (SGE 060) (SGE 070)	3
FL 221	Intermediate German II* (SGE 060) (SGE 070)	3
FL 230	Intermediate Spanish I* (SGE 060) (SGE 070)	3
FL 231	Intermediate Spanish II* (SGE 060) (SGE 070)	3
FL 240	Intermediate French I* (SGE 060) (SGE 070)	3
FL 241	Intermediate French II* (SGE 060) (SGE 070)	3
FL 265	Intermediate Chinese I* (SGE 060) (SGE 070)	3
FL 266	Intermediate Chinese II* (SGE 060) (SGE 070)	3

History

HIST 120	Local and Kansas History (SGE 060) (SGE 070)	3
HIST 125	Western Civilization: Ancient World to the Renaissance (SGE 060) (SGE 070)	3
HIST 126	Western Civilization: Scientific Revolution to the Modern Age (SGE 060) (SGE 070)	3
HIST 128	Medieval History (SGE 060) (SGE 070)	3
HIST 129	Early Modern Europe 1500-1789 (SGE 060) (SGE 070)	3
HIST 130	European History Since 1789 (SGE 060) (SGE 070)	3
HIST 132	History of Africa (SGE 060) (SGE 070)	3
HIST 135	Eastern Civilization (SGE 060) (SGE 070)	3
HIST 137	African American History (SGE 060) (SGE 070)	3
HIST 140	U.S. History to 1877 (SGE 060) (SGE 070)	3
HIST 141	U.S. History Since 1877 (SGE 060) (SGE 070)	3
HIST 143	Ancient Greece, the Near East and Egypt (SGE 060) (SGE 070)	3
HIST 145	History of Ancient Rome (SGE 060) (SGE 070)	3
HIST 149	History of India (SGE 060) (SGE 070)	3
HIST 150	Islam: Religion and Civilization (SGE 060) (SGE 070)	3
HIST 151	World History: Traditional (SGE 060) (SGE 070)	3
HIST 152	World History: Modern World (SGE 060) (SGE 070)	3
HIST 160	Modern Russian History (SGE 060) (SGE 070)	3
HIST 162	Modern Latin America (SGE 060) (SGE 070)	3
HIST 165	History of China (SGE 060) (SGE 070)	3
HIST 167	Introduction to History: Japan (SGE 060) (SGE 070)	3
HIST 180	North American Indian History (SGE 060) (SGE 070)	3
HIST 195	History of the Middle East (SGE 060) (SGE 070)	3
HIST 200	Empires of the Silk Road (SGE 060) (SGE 070)	3
HIST 210	Environmental History of North America (SGE 060) (SGE 070)	3
HIST 250	American West (SGE 060) (SGE 070)	3
HIST 260	Women in U.S. History (SGE 060) (SGE 070)	3

Humanities

HUM 122	Introduction to Humanities (SGE 060) (SGE 070)	3
HUM 145	World Humanities: Ancient to Medieval (SGE 060) (SGE 070)	3
HUM 146	World Humanities: Renaissance to Modern (SGE 060) (SGE 070)	3
HUM 150	Islam: Religion and Civilization (SGE 060) (SGE 070)	3
HUM 155	Classical Mythology (SGE 060) (SGE 070)	3
HUM 156	Contemporary Approaches to World Mythology (SGE 060) (SGE 070)	3
HUM 165	Introduction to Chinese Culture (SGE 060) (SGE 070)	3
HUM 167	Introduction to Japanese Culture (SGE 060) (SGE 070)	3

Journalism

JOUR 120	Mass Media and Society (SGE 060) (SGE 070)	3
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Music

MUS 121	Introduction to Music Listening (SGE 060) (SGE 070)	3
MUS 125	Introduction to Jazz Listening (SGE 060) (SGE 070)	3
MUS 126	Introduction to World Music (SGE 060) (SGE 070)	3
MUS 128	History of Rock and Roll Music (SGE 060) (SGE 070)	3

Religion

REL 120	Exploring World Religions (SGE 060) (SGE 070)	3
REL 125	Asian Religions (SGE 060) (SGE 070)	3
REL 126	Religions of the West (SGE 060) (SGE 070)	3
REL 150	Islam: Religion and Civilization (SGE 060) (SGE 070)	3

Philosophy

PHIL 121	Introduction to Philosophy (SGE 060) (SGE 070)	3
PHIL 124	Logic and Critical Thinking (SGE 060) (SGE 070)	3
PHIL 128	Environmental Ethics (SGE 060) (SGE 070)	3
PHIL 130	Food Ethics (SGE 060) (SGE 070)	3
PHIL 143	Ethics (SGE 060) (SGE 070)	3
PHIL 154	History of Ancient Philosophy (SGE 060) (SGE 070)	3
PHIL 176	Philosophy of Religion (SGE 060) (SGE 070)	3

Photography

PHOT 200	Foundations in Photography (SGE 060) (SGE 070)	3
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Theater

THEA 120	Introduction to Theater (SGE 060) (SGE 070)	3
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Social and Behavioral Sciences, Associate of Applied Science (3 hrs.)

Code	Title	Hours
Anthropology		
ANTH 125	Cultural Anthropology (SGE 050) (SGE 070)	3
ANTH 126	Physical Anthropology (SGE 050) (SGE 070)	3
ANTH 130	World Cultures (SGE 050) (SGE 070)	3
ANTH 142	World Prehistory (SGE 050) (SGE 070)	3
ANTH 165	Linguistic Anthropology (SGE 050) (SGE 070)	3
Criminal Justice		
CJ 121	Introduction to Criminal Justice System (SGE 050) (SGE 070)	3
CJ 141	Criminal Law (SGE 050) (SGE 070)	3
CJ 223	International Criminal Justice Systems (SGE 050) (SGE 070)	3
Economics		
ECON 132	Survey of Economics (SGE 050) (SGE 070)	3
ECON 230	Principles of Macroeconomics (SGE 050) (SGE 070)	3
ECON 231	Principles of Microeconomics (SGE 050) (SGE 070)	3

Geoscience

GEOS 145	World Regional Geography (SGE 050) (SGE 070)	3
GEOS 155	Human Geography (SGE 050) (SGE 070)	3

Legal Studies

LAW 120	Introduction to Paralegal Studies (SGE 050) (SGE 070)	3
LAW 121	Introduction to Law (SGE 050) (SGE 070)	3

Political Science

POLS 122	Political Science (SGE 050) (SGE 070)	3
POLS 124	American National Government (SGE 050) (SGE 070)	3
POLS 126	State and Local Government (SGE 050) (SGE 070)	3
POLS 132	Introduction to Comparative Government (SGE 050) (SGE 070)	3
POLS 135	International Relations (SGE 050) (SGE 070)	3
POLS 175	Environmental Policy and Law (SGE 050) (SGE 070)	3
POLS 192	Political Theory (SGE 050) (SGE 070)	3
POLS 200	Model United Nations (SGE 050) (SGE 070)	3
POLS 220	Introduction to Public Policy (SGE 050) (SGE 070)	3
POLS 245	Introduction to Public Administration (SGE 050) (SGE 070)	3

Psychology

PSYC 121	Applied Psychology (SGE 050) (SGE 070)	3
PSYC 130	Introduction to Psychology (SGE 050) (SGE 070)	3
PSYC 215	Child Development* (SGE 050) (SGE 070)	3
PSYC 218	Human Development* (SGE 050) (SGE 070)	3

Sociology

SOC 122	Introduction to Sociology (SGE 050) (SGE 070)	3
SOC 125	Social Problems (SGE 050) (SGE 070)	3
SOC 131	Sociology of Families (SGE 050) (SGE 070)	3
SOC 146	Introduction to Social Work and Social Welfare (SGE 050) (SGE 070)	3

Gender and Ethnic Studies

WGS 201	Global Women's Studies (SGE 050) (SGE 070)	3
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Mathematics and Sciences, Associate of Applied Science (3 hrs.)

Code	Title	Hours
Mathematics		
MATH 120	Business Mathematics*	3
MATH 130	Technical Mathematics I*	3
MATH 131	Technical Mathematics II*	3
MATH 151	Contemporary Mathematics* (SGE 030) (SGE 070)	3
MATH 161	Elementary Statistics* (SGE 030) (SGE 070)	3
MATH 171	College Algebra* (SGE 030) (SGE 070)	3
MATH 172	Trigonometry* (SGE 030) (SGE 070)	3
MATH 173	Precalculus* (SGE 030) (SGE 070)	5
MATH 175	Discrete Mathematics and its Applications* (SGE 030) (SGE 070)	3
MATH 201	Statistics* (SGE 030) (SGE 070)	3
MATH 231	Business and Applied Calculus I* (SGE 030) (SGE 070)	3
MATH 232	Business and Applied Calculus II* (SGE 030) (SGE 070)	3
MATH 241	Calculus I* (SGE 030) (SGE 070)	5
MATH 242	Calculus II* (SGE 030) (SGE 070)	5
MATH 243	Calculus III* (SGE 030) (SGE 070)	5
MATH 254	Differential Equations* (SGE 030) (SGE 070)	4
MATH 285	Statistics for Business* (SGE 030) (SGE 070)	4

Life Science

BIOL 121	Introductory Biology for Non-Majors (SGE 040) (SGE 070)	4
BIOL 125	General Botany (SGE 040) (SGE 070)	5
BIOL 127	General Zoology (SGE 040) (SGE 070)	5
BIOL 135	Principles of Cell and Molecular Biology (SGE 040) (SGE 070)	4
BIOL 140	Human Anatomy (SGE 040) (SGE 070)	4
BIOL 144	Human Anatomy and Physiology* (SGE 040) (SGE 070)	5
BIOL 150	Biology of Organisms* (SGE 040) (SGE 070)	5
BIOL 161	Introduction to Biotechnology (SGE 040) (SGE 070)	4
BIOL 225	Human Physiology* (SGE 040) (SGE 070)	4
BIOL 230	Microbiology* (SGE 040) (SGE 070)	3
BIOL 231	Microbiology Lab* (SGE 040) (SGE 070)	2
EVRN 124	Oceanus: Essentials of Oceanography (SGE 040) (SGE 070)	3
EVRN 130	Environmental Science (SGE 040) (SGE 070)	3
EVRN 132	Environmental Science Laboratory* (SGE 040) (SGE 070)	2
EVRN 134	Principles of Sustainability	3
EVRN 250	Bioethics in Science and Research*	3
EVRN 275	Nature, Law, and Environmental Protection*	3

Physical Science

ASTR 120	Fundamentals of Astronomy	3
ASTR 122	Astronomy (SGE 040) (SGE 070)	4
CHEM 120	Chemistry in Society* (SGE 040) (SGE 070)	4
CHEM 122	Principles of Chemistry* (SGE 040) (SGE 070)	5
CHEM 124	General Chemistry I Lecture* (SGE 040) (SGE 070)	4
CHEM 125	General Chemistry I Lab* (SGE 040) (SGE 070)	1
CHEM 131	General Chemistry II Lecture* (SGE 040) (SGE 070)	4
CHEM 132	General Chemistry II Lab* (SGE 040) (SGE 070)	1
CHEM 140	Principles of Organic & Biological Chemistry* (SGE 040) (SGE 070)	5
ENGR 121	Engineering Orientation	2
GEOS 130	General Geology (SGE 040) (SGE 070)	5
GEOS 140	Physical Geography (SGE 040) (SGE 070)	3
GEOS 141	Physical Geography Lab* (SGE 040) (SGE 070)	2
GEOS 160	Introduction to Meteorology (SGE 040) (SGE 070)	5
PHYS 130	College Physics I* (SGE 040) (SGE 070)	5
PHYS 131	College Physics II* (SGE 040) (SGE 070)	5
PHYS 220	Engineering Physics I* (SGE 040) (SGE 070)	5
PHYS 221	Engineering Physics II* (SGE 040) (SGE 070)	5
PSCI 120	Physical Science (SGE 040) (SGE 070)	4

Cavalier Credits (3 hrs.)

Code	Title	Hours
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Requires the completion of 3 additional credit hours to be selected from one of the above general education categories.

General Education Hours: 15