Although every effort has been made to ensure the information contained on this program sheet is accurate, the SVC Catalog is the official reference for graduation requirements.

Mount Vernon Campus
Admissions ------------------------ (360) 416-7600
Counseling and Career Services ------ 416-7654
Ted Rodriquez, Department Chair ------- 416-7757

Whidbey Campus
Admissions & Student Services ....... (360) 679-5319

Electronics Technology (ET)

See Electronics Engineering Technology (EET) or Computer-Based Instrumentation and Control Technology (CICT)
or Telecommunication Networks
Technology (TNT) for information on related programs.

Program Description
The Electronics Technology (ET) program offers majors in Electronics Technology/RF Communication Systems, Electronics Technology/Instrumentation and Control emphasis, Electronics Engineering Technology, and Telecommunications. These majors offer similar first-year core courses with specialization occurring in the second year sequence of study. Job options in this field include computer network design, industrial instrumentation and control, home and business security system maintenance and design, as well as opportunities in avionics and marine electronics.

Sample schedules for Electronics Technology/RF, Instrumentation and Control emphasis and Telecommunications are shown under each individual program heading.

Computer systems are used extensively throughout this program. Courses in advanced circuit analysis will use the computer in circuit simulation and data acquisition and control. C++ programming is emphasized in computer interface systems and control applications. Students may expect to spend approximately fifty percent of their time in lab work.

All students are required to provide a basic set of hand tools for use in their first-year courses, including a graphing calculator, digital multi-meter with interface port and computer simulation software for use in their first-year courses. When advancing to the second-year application courses, the tool and equipment compliment will be augmented to meet the requirements of the major study area. Each course syllabus will provide the specifics of the required tools, equipment, and software.

Entry into the Program
Please apply to the Admissions Office. Students entering the program should complete one year of high school algebra before starting the sequence. Students lacking this preparation should consult an advisor for appropriate course work. Students with prior experience or training in electronics may apply for advanced standing.

For further information, contact the Department Chair or the Admissions Office.

Tech Prep
Skagit Valley College will grant credits toward a Professional/Technical degree based on competencies gained in high school. The competencies must be agreed upon by the appropriate teachers from the high school and the college. Credit will be transcripted after verification of successful completion of the agreed upon competencies. If you are interested in taking steps to begin work in the professional/technical workplace of the future, please contact your high school counselor.

Work-Based Learning
Students will integrate classroom learning with work-based learning experience in Cooperative Education (ET 199) at a supervised work site. Department Chair approval is required. Credits and grades are based on job-hours worked, work performance and completion of the learning objectives specified in the learning contract. Concurrent enrollment in a Cooperative Education Seminar or equivalent is required.

Associate in Technical Arts Degree
An Associate in Technical Arts degree (ATA) is awarded upon completion of a minimum of 90 credits of specified technical and related education coursework above 100 level with both an overall 2.0 grade point average and a 2.0 grade point average in the technical major.
SAMPLE SCHEDULE

ATA Electronics Technology

First Year

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<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>ET 111</td>
<td>ET 112</td>
<td>ET 113</td>
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<tr>
<td>ET 135</td>
<td>ET 142</td>
<td>ET 145</td>
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<tr>
<td>PE 200</td>
<td>SOSC 125</td>
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<td>Fall</td>
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<td>ET 267</td>
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<td>ET 274</td>
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<td>ET 281</td>
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<td>SOSC 113</td>
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* Learning Community (5-10 credits) or 5 credits of General Education (culture, natural world or arts). Must be outside of technical area, approved by Department Chair. Electronics students must take CS 101. Please see INDEX regarding Learning Communities.

‡ Students who do not receive an appropriate test score will require additional coursework to develop necessary skills for entry into class.

† ET 199 may be taken at any time during the two-year program with Department Chair approval.

Program Certificates

Computer Repair Certificate
A certificate in Computer Repair may be awarded upon completion of the courses listed in the first four quarters of the sample schedule (with the exception that ET 199 will be taken in place of the LC/GE course) and Department Chair approval.

Individual Technical Certificate
A certificate in electronics, electronic instrumentation, or other specialized areas may be tailored and customized in conjunction with other programs to meet specific goals and objectives of the prospective graduate with Department Chair approval.

Course Descriptions

ET 111  Electronic Fundamentals I (5)
Introductory resistive circuit analysis course. Topics include Ohm’s Law, Kirchoff’s laws, series circuits, parallel circuits, series-parallel circuits, network theorems, magnetics, and active devices.

ET 112  Electronic Fundamentals II (5)
Introduction to AC measurement, resonant circuits, filters, and reactive components.

ET 113  Active Electronic Circuits (5)
Amplifiers, oscillators, switching, power supply and regulator circuits.

ET 121  A+ Certification Preparation (6)
Introduction to computer components, concepts, hardware and software. Provides the opportunity to identify, assemble, configure, upgrade and troubleshoot a typical personal computer system. Covers fundamentals, requirements, and specifications of typical network systems. Successful completion of this course will help prepare for the CompTIA A+ certification examination.

ET 135  Introduction to Semiconductor Devices (5)
Basic semiconductor theory and operation, including diodes, LEDs, bipolar transistors, FETs and operational amplifiers.

ET 136  Advanced Semiconductor Devices (5)
Advanced solid state. Includes theory and operation of FETs, UJT, SCR, DIAC, TRIAC, and other similar devices. Prerequisite: ET/TC 135.

ET 137  Advanced Semiconductor Devices II (5)
Laboratory experience with integrated circuits. Prerequisite: ET 112 and ET 136.

ET 141  Algebra for Electronics (5)
Application of algebra to electronics.

ET 142  Trigonometry for Electronics (5)
Application of algebra and trigonometry to alternating current problems. Prerequisite: ET 141.

ET 143  Calculus for Electronics (5)
Study of advanced mathematics including calculus.

ET 145  Advanced Mathematics for Electronics (5)
Related electronic mathematics including logarithms, numbering systems for computers, Boolean algebra, and logic diagrams.

ET 199  Cooperative Work Experience (1-15)
Supervised work experience in the field. Includes a weekly seminar. Instructor permission required.

ET 212  Network Analysis (3)
Study of advanced AC/DC circuit analysis using network theorems and complex numbers. Included will be the study of logarithms and their applications to electronics. Boolean algebra and digital logic will be discussed.
ET 222 Introduction to Microprocessors (4)
Study of microprocessor fundamentals. Analysis of architecture and bus structure.

ET 223 Designing with Microprocessors (4)
Using the microprocessor as the integral part of digital control systems.

ET 224 Microprocessor Interfacing (4)
Using the microprocessor to control external operations and processes.

ET 244 Calculus for Electronics II (5)
Integrals, trigonometric functions, log arithmetic and exponential functions.

ET 260 Technician License Preparation (3)
Preparation and study for technician FCC license examinations. For students experienced in electronics.

ET 261 Associate CET Review (3)
Review of fundamental electronic principles essential to passing the Associate Certified Electronics Technician Examination.

ET 262 Journeyman CET Review (3)
Review of troubleshooting techniques, equipment usage and waveform analysis to pass the ISCET Journeyman Level examination.

ET 263 Industrial Electronics (5)
Electronic principles, programming examples and applications related to the industrial and instrumentation fields. Covers variables such as environmental changes, temperature and component aging. Prerequisite: ET 111, 113, 137, 142, and 145.

ET 264 Industrial Measurements (5)
Transducers, flow measurement, temperature measurement in a computer controlled industrial and instrumentation environment. Application of sensor technology to industrial applications. Flow, temperature, proximity, pressure and toxic gas sensors are used to identify, monitor and control a hostile environment. Prerequisite: ET 111, 113, 137, 142, 145, 263.

ET 265 Process Control Systems (5)
Overview of microprocessor and computer based instrumentation and process control. Microprocessor and computer programming applications for instrumentation and process control. Assembly and C++ programming languages are used to develop real-time control applications. Prerequisite: ET 111, 113, 137, 142, 145, and 264.

ET 267 Analysis of Op-Amp Circuits (5)
Fundamentals of operational amplifiers and linear ICs.

ET 268 Linear Circuits for Microprocessor Systems (5)
Laboratory experiences in design, analysis and construction of integrators, comparators, oscillators, and regulated power supplies. Prerequisite: ET 267.

ET 269 Designing with Linear Circuits (5)
Techniques of interfacing linear devices to a microcomputer.

ET 274 Wireless Communications I (5)
Introduction to wireless communications. Covers wireless cellular service, global third generation (3G) wireless cellular network standards, electronic fundamentals and types of modulation, transmitters and receivers. Lab intensive using both discrete components and system simulation software. Prerequisite: ET 113 and ET 145.

ET 275 Wireless Communications II (5)
Study of cellular radio, paging and messaging networks, Bluetooth, the 802.11 Wireless LAN Standards, security and installation of wireless computer networks. Applications include wireless broadband networks, multichannel multipoint distribution service, local multipoint distribution service, the 39 GHz Band plan, wireless local loop, and Broadband Free-Space optical systems. Prerequisite: ET 274.

ET 276 Wireless Communications III (5)
Advanced wireless systems in the convergence to Third Generation (3G) systems and technologies. Explores the basics of satellite navigation systems for determining position location. Studies Global Positioning Satellite (GPS) integration with third generation digital cellular phone systems for aiding 911 calls for mobile users. Prerequisite: TC 275.

ET 281 Digital Circuits for Microprocessors (5)
Theory and laboratory experiences involving the use of digital integrated circuits. Prerequisite: ET 113.

ET 283 Microprocessor Support Circuits (5)
Theory and operation of microprocessors.

ET 285 Computer Interfacing (5)
Advanced computing and control systems involving microcomputers and microprocessors.