Listed below are the classes that you should register for in fall semester. Unless denoted “optional” all classes listed for fall semester are required in order to advance to spring semester in the program.

If you see a class listed, and believe that you’ve taken the class at a different institution, please review your DARS report in eServices to ensure that the class transferred to SCTCC to fulfill the program requirement. If it did not transfer, please register for the class as instructed. Instructions for how to access and interpret a DARS report can be found at the link provided in your welcome letter.

Please refer to the registration access code provided in your welcome letter when registering for classes. Contact the Academic Advising Center at advising@sctcc.edu with your questions about the class schedule or for assistance with registration.

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Subject</th>
<th>Course Title</th>
<th>Section</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>000087</td>
<td>DC Electronics (1st half of semester)</td>
<td>ETEC1511</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>000088</td>
<td>AC Electronics (2nd half of semester)</td>
<td>ETEC1512</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>000079</td>
<td>Industrial Safety (1st half of semester)</td>
<td>ETEC1515</td>
<td>2</td>
<td>2</td>
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<tr>
<td>000085</td>
<td>Maintenance Process and Control (2nd half of semester)</td>
<td>ETEC1517</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Choose from many options</td>
<td>College Algebra</td>
<td>MATH1300</td>
<td>Choose from many options</td>
<td>3</td>
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<tr>
<td>000090</td>
<td>Welding for Work and Leisure (1st half of semester)</td>
<td>WELD1502</td>
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Total Credits: 15
<table>
<thead>
<tr>
<th>Hour</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 a.m.</td>
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</tr>
<tr>
<td>9 a.m.</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10 a.m.</td>
<td>1511/1512</td>
<td>1511/1512</td>
<td>1511/1512</td>
<td>1511/1512</td>
<td>1511/1512</td>
</tr>
<tr>
<td>11 a.m.</td>
<td>1511/1512</td>
<td>1511/1512</td>
<td>1511/1512</td>
<td>1511/1512</td>
<td>1511/1512</td>
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<tr>
<td>12 p.m.</td>
<td></td>
<td></td>
<td></td>
<td>1502</td>
<td></td>
</tr>
<tr>
<td>1 p.m.</td>
<td></td>
<td></td>
<td></td>
<td>1502</td>
<td></td>
</tr>
<tr>
<td>2 p.m.</td>
<td></td>
<td></td>
<td></td>
<td>1502</td>
<td></td>
</tr>
<tr>
<td>3 p.m.</td>
<td>1517</td>
<td></td>
<td>1517</td>
<td></td>
<td>1502</td>
</tr>
<tr>
<td>4 p.m.</td>
<td>1517</td>
<td></td>
<td>1517</td>
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</tbody>
</table>
Students will be able to use their electronic engineering and technical skills in the fields of instrumentation and industrial control systems, digital and analog circuits, automated manufacturing and robotics, manufacturing and facilities maintenance, embedded micro-controller, and telecommunications systems.

Graduates from this program find exciting opportunities as electro-mechanical technicians who install, maintain, and repair electronic equipment and automated systems used in a variety of industries.

AAS: 60 credits

**TECHNICAL STUDIES SEMESTER I**
- **ETEC1511 - 3 cr** DC Electronics
- **ETEC1515 - 2 cr** Industrial Safety
- **ETEC1517 - 2 cr** Maintenance Process and Production
- **TECH1552 - 2 cr** Basic Metal Joining and Fabrication

**TECHNICAL STUDIES SEMESTER II**
- **ETEC1507 - 3 cr** Digital Electronics
- **ETEC1526 - 2 cr** Quality Practice
- **ETEC1528 - 2 cr** Maintenance Awareness
- **ETEC1535 - 2 cr** Networking Systems

**TECHNICAL STUDIES SEMESTER III**
- **ETEC2521 - 3 cr** Mechanical Systems
- **ETEC2525 - 2 cr** FANUC Robotics Certification
- **ETEC2541 - 3 cr** Electrical Motors and Control System
- **ETEC2543 - 3 cr** Programmable Logic Control

**TECHNICAL STUDIES SEMESTER IV**
- **ETEC2542 - 3 cr** Electric Motor Control II
- **ETEC2570 - 3 cr** Advanced Mechanical Systems

**GENERAL EDUCATION**
- **ENGL1303 - 3 cr** Technical Writing
- **MATH1300 - 3 cr** College Algebra
- **CRTK1300 - 3 cr** Critical Thinking
- **PHYS1305 - 4 cr** Conceptual Physics
- **PHYS2300 - 4 cr** General Physics
- **MNTC Goal Area 5 3 cr - Social Sciences**

**96% Placement Rate**

**$33 Central MN Average Hourly Wage**

**CONTACT US**
SCTCC Admissions
enroll@sctcc.edu
320-308-5089
sctcc.edu/energy-electronics

Curriculum is subject to change.
2019-2020 Academic Year

MTR1
Students may also use this certificate to transfer to other programs in electronics, such as biomedical technician, instrumentation and process control technician, and electronics technician programs.

Graduates from this program coupled with prior experience or other education experiences find exciting opportunities in a variety of fields, such as, selling electronic equipment, alarm and security system installers, and electronic assembly.

Certificate: 30 credits

### TECHNICAL STUDIES SEMESTER I

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit Hours</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETEC1511</td>
<td>3 cr</td>
<td>DC Electronics</td>
</tr>
<tr>
<td>ETEC1512</td>
<td>3 cr</td>
<td>AC Electronics</td>
</tr>
<tr>
<td>ETEC1515</td>
<td>2 cr</td>
<td>Industrial Safety</td>
</tr>
<tr>
<td>ETEC1517</td>
<td>2 cr</td>
<td>Maintenance Process and Production</td>
</tr>
<tr>
<td>MATH1300</td>
<td>3 cr</td>
<td>College Algebra</td>
</tr>
<tr>
<td>TECH1530</td>
<td>2 cr</td>
<td>Computer Applications</td>
</tr>
</tbody>
</table>

### TECHNICAL STUDIES SEMESTER II

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit Hours</th>
<th>Course Name</th>
</tr>
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<tbody>
<tr>
<td>ETEC1507</td>
<td>3 cr</td>
<td>Digital Electronics</td>
</tr>
<tr>
<td>ETEC1524</td>
<td>2 cr</td>
<td>Print Reading and Design</td>
</tr>
<tr>
<td>ETEC1526</td>
<td>2 cr</td>
<td>Quality Practice</td>
</tr>
<tr>
<td>ETEC1528</td>
<td>2 cr</td>
<td>Maintenance Awareness</td>
</tr>
<tr>
<td>PHYS1305</td>
<td>4 cr</td>
<td>Conceptual Physics</td>
</tr>
<tr>
<td>PHYS2300</td>
<td>4 cr</td>
<td>General Physics</td>
</tr>
<tr>
<td>MATH1300</td>
<td>3 cr</td>
<td>College Algebra</td>
</tr>
<tr>
<td>TECH1530</td>
<td>2 cr</td>
<td>Computer Applications</td>
</tr>
<tr>
<td>ETEC1535</td>
<td>2 cr</td>
<td>Networking Systems</td>
</tr>
</tbody>
</table>

96% Placement Rate

$33 Central MN Average Hourly Wage
New students: Instrumentation and Process Control, Mechatronics, Energy Technical Specialist, Energy Technical Specialist- -Nuclear, Robotics and Automation, and Biomedical Technician

Welcome! We are pleased you have chosen to attend St. Cloud Technical and Community College to further your education. One of the objectives of the program you have selected is keeping up with technology in industry. In order to accomplish this goal, your program has determined its students should have laptop computers at their disposal on a twenty-four hour basis.

Therefore, all students in your chosen major will be required to purchase a laptop computer. The laptop that we are recommending meets the needs of the software your program uses and includes 3-year damage protection plan and technical support.

Special pricing is offered on the laptop for SCTCC students. To take advantage of this reduced pricing, you must order your laptop through the SCTCC laptop web site from Now Micro. You will have the opportunity to speak with an IT representative during Student Virtual Registration Day on June 8-9, 2020. Laptop orders can be placed immediately after you create your Now Micro account. Directions are listed below. To place an order:

Instructions for Purchasing SCTCC Standard Laptop Bundles (If you need assistance with ordering please contact: Now Micro: 800-641-3210 or sales@nowmicro.com)

Instructions for Purchasing SCTCC Standard Laptop Bundles

1. Go to the vendor website where you will find laptop pricing and specifications.
   Vendor site:https://www.nowmicro.com
2. Click on the shopping cart button at the top right-hand side of the page.
   Select Register:
3. Register as individual and follow the prompts to set-up online profile.
4. Once you submitted registration please check your email for password.
5. Once logged into the store site, enter keyword “SCTCC CFG1” under the product search to access school-approved laptop bundle options.
6. Select the laptop for Energy/Electronics/Biomedical.
7. Add products to cart (including selectable accessory options if needed) and proceed through checkout process.

Your laptop is required to have the following components:

- **Autodesk Software** (Downloaded for free from the AutoDesk site during class.)
- **Microsoft Office 365 Pro Plus** Students at SCTCC are eligible for a free copy of Microsoft Office 365 Pro Plus. This software can be installed by clicking a link inside of your student email. Instructions are linked on this page: http://www.sctcc.edu/student-help-desk
- **Multisim and Labview** - This is available in the SCTCC Bookstore
- **Circuits Challenge** – This will be installed in class during the first week of class.
- **Robot C** – This will be installed in class. Do not install until instructed to do so, we are using the 30day trial.
- **Fanuc Simulation Software** – Robotics students only – available in the SCTCC Book Store
- **Siemens Portal** – Will be installed in class.

If can choose not to purchase the recommended laptop computer, please follow the specifications for the recommended laptop as closely as possible to ensure that your device with run the software necessary for your program. If you would like the specifications of the laptop emailed to you send a request to vbergquist@sctcc.edu. Please be sure to say which program you are entering.

Financial aid can be used to cover the purchase of your laptop. Because financial aid and loan checks arrive approximately three to four weeks after classes start, you will need some form of financing until the financial aid comes through. Credit card is the preferred method of payment.

Students must make arrangements to have their computers well before the start of school fall semester as they are needed on the first day of classes. If you need assistance with your laptop, please bring it to the SCTCC Technology Department located in Room 1-215.

Vi Bergquist, CIO 320-308-5177 vbergquist@sctcc.edu

Tool day is the first Wednesday of the fall semester. We will have all three tool vendors there so you can order tools from them that day. You can mix and match from the tool vendors or purchase all tools from one. Approximately: $1,300

**Required**

- Weller 25W/ Soldering Iron
- 30' Locking Tape Measure
- 8-16 Gauge Wire Stripper
- 6” Long Nose Pliers with cutter
- 8” Diagonal Cut Pliers with angle HD sm-grip
- #2 x 4” Phillips Screwdriver
- 7pc - Electronic Screwdrivers – These must be purchased from one of the three vendors listed below. No cheap ones allowed as they damage the terminal strips.
- 4” Cabinet Tip Screwdriver – this is also a unique tool and needs to be purchased from one of the tool vendors below.
- 10” Tongue and Groove Pliers
- Multi Crimp Tool
- 8” Adjustable Wrench
- 33Pc Quick Change Bits & Driver
- Metric and Standard Hex Keyset
- RJ11/45 Crimp Tool
- Punch Down Tool
- 10pc Combo Metric Wrench
- 10pc Combo Standard Wrench
- 1) 18” Black Tool Backpack or
- 2) 16” Large Mouth Tool Bag or equivalent

**Optional**

- Cable Tie Tool
- 1/4" & 3/8" Socket Set
- Panduit Cutting Tool
Recommended Tool vendors with student pricing
Border States Electric
Fastenal
Viking Electric Supply

You can purchase tools from other areas; however, tool quality is important. It is recommended you purchase these tools from one of our approved vendors who will have the tools that we have approved.

Additional equipment required.

- **Digital Multi Meter** – Available in Bookstore.
- **Uniform shirt** – These shirts are in the Bookstore.
- **Safety glasses** – All students must have safety glasses/ or side shields on their glasses.
- **Hard toed shoes** – composite or steel toed shoes are required. Nuclear student should get the composite due to the metal detectors at the plant.
- **Laptop** – Do not purchase an Apple – They are not compatible with our equipment. Running windows on an Apple does not work either. You can purchase your laptop anywhere, but must meet minimum requirements as listed on [https://www.sctcc.edu/laptop-program](https://www.sctcc.edu/laptop-program). You can purchase from the link as well.

Should you have any question on anything, please feel free to contact me.

Thank you,
Aaron Barker
Energy and Electronics Instructor
320-308-6518
abarker@sctcc.edu