Electronics Engineering Technology  
– Telecommunications

Cooperative Education | Three-Year Diploma Program

Co-op Format

<table>
<thead>
<tr>
<th>Sept - Dec</th>
<th>Jan - Apr</th>
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<tbody>
<tr>
<td>Semester 1</td>
<td>Semester 2</td>
<td>Vacation</td>
<td>Semester 3</td>
<td>Semester 4</td>
<td>Work Term 1</td>
<td>Semester 5</td>
<td>Work Term 2</td>
<td>Work Term 3</td>
<td>Work Term 4</td>
<td>Semester 6</td>
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Program of Studies

SEMMESTER 1
- Communications
- Computer H/W and S/W
- Electricity 1
- Engineering Skills 1
- Engineering Mathematics 1

SEMMESTER 2
- Electricity 2
- Digital Principles
- Network Fundamentals
- Electronic Devices
- Engineering Mathematics 2

VACATION

SEMMESTER 3
- Industrial Automation
- Digital Systems
- Electronic Circuits
- Engineering Mathematics 3
- Project Management
- Active Citizenship

SEMMESTER 4
- Internet Technologies
- Network Design and Troubleshooting
- Server Administration
- Electronic Communications
- Engineering Applications

SEMMESTER 5
- Engineering Project 1
- Robotics and Digital Control
- Advanced Network Technologies
- Wireless and Optical Communications
- Embedded Systems

SEMMESTER 6
- Engineering Project 2
- Electronic Energy Conversion
- Biomedical Instrumentation
- Digital Signal Processing
- Electronic Design Automation
- General Education Elective – Engineering Ethics and Law

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Work Term Capabilities
(which do not reflect individual experiences and exposures)

Work Term 1
• Design, construction, testing, installation and preventative maintenance of computer and electronic equipments
• Use instrumentation equipments such as signal generators, oscilloscopes, digital measuring equipments
• Installation, troubleshooting and repair of computer hardware and software
• Prototype development for microcontroller applications
• Microcontroller interfacing and programming using C and Assembly languages
• Digital and analogue circuits design and troubleshooting
• Experience with industrial logic and sensors, and 3-phase motor and control
• PLC programming and implementation, industrial electronics
• Printed circuit board layout and construction
• Technical support, field service, component sourcing and purchasing
• Technical writing

Work Term 2, 3 and 4
• Network design, installation, maintenance and management
• Network H/W - Cisco routers and switches, hubs
• Network S/W - TCP/IP, routing protocols, network inspector, protocol analyzer
• UTP and Co-ax cable making and testing using Fluke Cable Testers
• Cisco IOS commands
• Server installation, configuration and scripting - Windows 2000 and LINUX/UNIX
• System administration and support - Windows 98/2000/XP and LINUX
• Test, repair, and design passive and active filters, oscillators, amplifiers, AM, FM, and SSB modulators and demodulators
• Testing and prototyping of basic RF (radio frequency) circuits
• Understanding of transmission lines, antennas and mobile communications
• LAN design using VLANs
• WAN design, installation and management using - PPP, ISDN, Frame Relay Protocols
• Security using ACLs (firewall design)
• Embedded systems, embedded C and RTOS
• Use of spectrum analyzer
• Testing and modification of digital communication circuits
• Design of simple digital communication circuits
• Design and troubleshoot feedback and control circuits and transducers
• Knowledge of components for robotic systems

Salary Range

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<tr>
<th>Range</th>
<th>Work Term 1</th>
<th>Work Term 2</th>
<th>Work Term 3 and 4</th>
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<tbody>
<tr>
<td>Average</td>
<td>$10.70-15.65</td>
<td>$10.25-17.00</td>
<td>$10.25-15.00</td>
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<tr>
<td>Average</td>
<td>$14.38</td>
<td>$15.24</td>
<td>$15.24</td>
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