

COMPUTER CONTROL ENGINEERING (663)

663-100. Embedded Systems. (3 Credits)

Students will integrate their knowledge of digital logic, programming, and system design to produce a real system. Designing systems containing both hardware and software components will be introduced. Laboratory assignments will require students to successfully design, implement, debug, and document computer solutions requiring a mix of hardware and software.

Prerequisites: 605-118 with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=100>)

663-101. Internship - Electronics. (1 Credit)

Gain meaningful occupational experience in the field of electronics while building interpersonal relationships, improving technical competencies and completing the pre-developed goals. To complete an internship, WCTC must first verify that students have met the prerequisites.

Please contact the Career Connections Department at 262.695.7848 or internshipdepartment@wctc.edu for assistance.

Prerequisites: Approval of Co-op Ed Office

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=101>)

663-102. DC/AC Electronics. (5 Credits)

Study the principles and applications of Ohm's and Kirchhoff's laws, series and parallel circuits, voltage and current dividers and magnetism while building a foundation in electronics technology. Explore the principles, concepts and basic applications of capacitance, inductance, transformers, RLC circuits, resonance and filters. 3-phase circuits will be explored. Study troubleshooting practices, and use computer simulation software and lab exercises to reinforce theoretical concepts.

Prerequisites: (804-107 (may be taken concurrently) with a minimum grade of C or 804-115 (may be taken concurrently) with a minimum grade of C or 804-113 (may be taken concurrently) with a minimum grade of C or 804-114 (may be taken concurrently) with a minimum grade of C)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=102>)

663-103. Electronics for Industry. (4 Credits)

Explore the principles, concepts, and basic applications of semiconductors including: diodes, Bipolar Junction Transistors (BJTs), Field Effect Transistors (FETs), and Operational Amplifiers in a practical circuit-oriented context. Become familiar with troubleshooting practices and utilize computer simulation software.

Prerequisites: 663-102 with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=103>)

663-104. Programming for Electronics. (1 Credit)

This course provides fundamentals to the ANSI C language, emphasizing portability and processor design. Students are introduced to major language elements including fundamental data types, flow control, and standard function libraries. Focus is given to the topics of standard I/O, keywords, variable arguments functions, pointers and the C runtime library. This will allow students to program and embed microcontrollers. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency in the language.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=104>)

663-105. Electronics Troubleshooting. (2 Credits)

This course is designed to provide students with the procedural knowledge needed to troubleshoot and diagnose faults in electronic circuits and systems. This includes the development and implementation of diagnostic procedures along with the troubleshooting concepts used in circuit fault analysis. De-soldering and soldering techniques will be reviewed and reinforced.

Prerequisites: 663-103 with a minimum grade of C and 605-182 with a minimum grade of C and 605-118 with a minimum grade of C and 663-107 with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=105>)

663-106. Electronic Fabrication I. (1 Credit)

This course develops skills and knowledge within electronic fabrication and repair. Instruction will be provided in the areas of wire preparation and termination; soldering/desoldering; wire routing; and the inspection, cleaning, and repair of printed circuit boards. Both through-hole and surface-mount technologies will be explored. Use of basic hand tools and measuring equipment will be addressed. Safety is emphasized throughout the course.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=106>)

663-107. Electronic Fabrication II. (1 Credit)

This course is a continuation of Electronic Fabrication I and is designed to enhance fabrication and repair knowledge and skills through the completion of projects. Both through-hole and SMT technology will be incorporated. Troubleshooting techniques will be introduced.

Prerequisites: 663-106 (may be taken concurrently) with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=107>)

663-400. Soldering. (1 Credit)

Learn plated through-hole soldering and surface mount soldering. Explore theory and methodologies in both the hands-on soldering process and the final inspection process.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=400>)

663-401. Soldering. (0.8 Credits)

Learn plated through-hole soldering and surface mount soldering. Explore theory and methodologies in both the hands-on soldering process and the final inspection process.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=401>)

663-402. Soldering 4hr. (0.4 Credits)

Learn plated through-hole soldering and surface mount soldering. Explore theory and methodologies in both the hands-on soldering process and the final inspection process.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=663&num=402>)