AUTOMATION SYSTEMS TECHNOLOGY (664)

664-160. Robotics and Servo Control. (3 Credits)
Explore the topics of safety, robotic terminology, types of robots, a robot¿s parts, axis and rotation, end effectors, and applicable sensors. Practice using robots while studying their operation, basic programming, and applications.
See sections of this course (http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=664&num=160)

664-161. Automation Systems. (3 Credits)
Use competencies learned throughout the program to operate and interface mechanical, digital, PLC, fluid power, servomechanism, and robotic systems. Discuss the start up and shut down of automated systems, as well as concepts related to current technology in the field of electro-mechanical systems. Explore the principles of safety, lock-out tag-out, documentation, and communication with systems stakeholders.
Prerequisites: (605-139 (may be taken concurrently) with a minimum grade of C and 605-196 with a minimum grade of C and 605-197 with a minimum grade of C and 664-160 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=664&num=161)

664-162. Robotics Applications. (3 Credits)
Explore topics including I/O bus networks (Ethernet I/P) for robotics, vision applications for robotic guidance, advanced programming functions (Collision Guard, Collision Skip, Remote TCP option and others), remote PLC control for robotics and HMI integration into robotic controllers (via PLC). These advanced programming concepts can be applied to Fanuc robots used in the lab, although the processes and techniques may be applied to many different types of six-axis industrial robots. By the end of the course, students should have created a completely integrated robotic vision solution which is driven by the operator through an Allen Bradley PanelView+ HMI and Compact Logix PLC.
Prerequisites: 664-160 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=664&num=162)

664-163. Industrial Internet of Things. (2 Credits)
Learn how connected systems are transforming manufacturing operations, enabling greater productivity, improved responsiveness to customers, and higher quality. Topics covered include operational equipment connectivity, enterprise software, database systems, cloud services, and data analytics.
See sections of this course (http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=664&num=163)

664-165. Fabrication-Automation Systems. (2 Credits)
Students will learn and apply safe applications for soldering, wire preparation/termination, and wire bundling and routing. AUTOCAD software will be used to layout and build an electrical panel.
See sections of this course (http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=664&num=165)

664-401. Handling Tool App Programming. (3 Credits)
Gain a fundamental understanding of operating an automation robot, including safety, powering up, creating and copying motion programs, branching, and position registers.
See sections of this course (http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=664&num=401)

664-518. Automation for Apprentices. (2 Credits)
Examine industrial automation and applications to various trades. Automation terminology, concepts and applications will be examined. Automated systems, components and devices will be reviewed. Robotics used in modern manufacturing plants will be compared and analyzed. Job duties and tasks associated with safety, inspection, testing, maintenance, repair and servicing will be the primary emphasis.
See sections of this course (http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=664&num=518)

664-519. Automation Setup Apprentices. (1 Credit)
Examine automation and applications for the injection molding industry. Automation utilized in modern injection molding plants will be compared and analyzed. Job duties and tasks associated with safety, setup and operation will be the primary emphasis.
See sections of this course (http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=664&num=519)

664-520. Troubleshooting Drives. (1 Credit)
This course will provide apprentices with an introduction to AC drives. Apprentices will learn AC drive language, programming, and troubleshooting.
See sections of this course (http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=664&num=520)

664-521. PLC Troubleshooting. (1 Credit)
This course will provide apprentices with an introduction to PLC's. Apprentices will learn PLC language, programming, and troubleshooting.
See sections of this course (http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=664&num=521)