



Robotic Fundamentals RBTC 1305

“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”

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Office Hours	Monday	Tuesday	Wednesday	Thursday
	12-3 PM	12-3 PM	12-3 PM	12-3 PM

Course Description: Introduction to flexible automation. Topic include installation, repair, maintenance, and development of flexible robotic manufacturing systems.

Prerequisite(s): None

Student Learning Outcomes: Describe the history of robotics and its impact on production and the labor force, define the term “robot” and describe general characteristics: explain the physics of robot motion and use different teaching pendants; and describe the characteristics of different types of robot control systems, applications of robots, and end-of-arm tooling.

Required Textbook(s): Online Subscription to Learnamator.com sold in 4, 6, and 12 month durations from the Northeast Texas Community College Bookstore.

Optional Instructional Materials: None

Minimum Technology Requirements: Internet and basic computer skills

Required Computer Literacy Skills: Internet, Email, Basic Word documents, and Blackboard.

Communications: NTCC email is the official form of communication for the college. Use your NTCC student email when requesting appointments, or need assistance, from your instructor. Emails and phone calls will be returned in a timely manner Monday-Thursday. Friday afternoon thru Sunday calls and emails may not be returned until Monday.

Student Responsibilities/Expectations:

1. Students are expected to demonstrate Safety in all classes and lab activities.
2. Students must complete ITTC Safety Orientation and OSHA Safety Course before starting their Skills assessment. Student must complete the online Safety Course WXSA105-XX00XEN-E1 - Lockout / Tagout Prior to starting Motor Controls Course.
3. Students will be taught in a competency-based, self-paced environment with the instructor and lab assistants serving as learning facilitators.
4. Students will complete both a Quiz covering the objectives contained in the LAPs, and Skills Assessments that demonstrate mastery of the skills taught in the LAPs.
5. In order to be successful, students will complete the courses their enrolled in within forty-two (42 weeks).
6. Student must complete quizzes on Learnamator.com and the skills assignments in Blackboard for the course.
7. Once all of the quizzes and assignments in Blackboard are complete then the student will request an appointment for Hands-On-Skills to be performed on the Training Equipment at the Industrial Technology Training Center.
8. Students must complete all quizzes and assignments in Blackboard then request an appointment for hands on skills to be performed at ITTC via their ntcc.edu email account.
9. Students receiving financial assistance must complete courses during the semester their enrolled. Failure to complete a course where financial assistance such as FASFA is used can result in losing your financial assistance. If you are on FASFA COMPLETE the course before the end of the semester.
10. We are limited on the number of people that may have appointments to perform hands on skills each day. Complete your quizzes and assignments in a timely manner. All appointments for hands on skills will be predetermined and course complete before the last week of the semester. If you are in multiple Industrial Technology courses and receiving FASFA then you will need to plan to complete every course this semester. PLAN ACCORDINGLY!
11. Face Masks are required at the Industrial Technology Training Center at all times. You are required to have your own mask.
12. Requirements for your Hands-On-Skills appointment will be sent to your NTCC student email account and you must confirm your appointment and acknowledge the guidelines. Appointments will be determined on a first to confirm basis.

Instructional Methods:

The primary method of instruction will be a self-paced facilitator model. The instructor will serve as a facilitator for the student's learning; thus, enabling the student to move at his/her own pace. Learning Activity Packets (LAP), multi-media computer-based learning modules, and practical hands-on activities will be incorporated throughout the course. Classroom presentations will be used infrequently at the instructor's discretion. Self-reviews, skill activities, Quiz assessments, (ONLINE) and Skills assessments (BY APPOINTMENT) will be used to evaluate the student's competency.

Instructor – Student Relationship:

Your instructor can be your greatest resource. Your instructor is here to assist you in learning the material and helping you earn the grade you wish to earn in the course. **This is a commitment by your instructor.** Please utilize this resource by contacting your instructor with any matter you feel they can assist you with, both within this class or your college success in general. It is your responsibility to learn the material, but this can often be best accomplished by initiating contact with the instructor on topics you need clarification or further assistance. Please do this!

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Evaluation and Grading Criteria:

Self-reviews and skill activities are a regular part of the Learning Activity Packets intended to enable the student to evaluate his/her own progress. Quiz assessments (ONLINE) 40% and Skills (ONLINE AND BY APPOINTMENT) 50% of your grade. Course Participation and Safety 10% is earned by displaying safety practices and making weekly progress needed to complete coursework.

Grades of A, B, C, D, and F will be determined by the student's achievement of a certain percentage of possible points based on the below listed categories.

<u>Assignments</u>	<u>Percentage</u>
Online Quiz	40%
Skills Assessment	50%
Course Participation and Safety	10%

The letter grade is based on the following Grading Scale:

89.5%-100% = A

79.5%-89.4% = B

69.5%-79.4% = C

59.5%-69.4% = D

0-59.4% = F

Quizzes and Assignments:

Students must complete Assignments Quizzes and Hands-on Skills in all of the following:

- Research paper on History of robotics and its impact on production and Labor Force
- Safety
- Introduction to Industrial Robotics
- Components of a Robot
- Classification of a Robots
- End-of-Arm Tooling
- Programming and File Management
- Automation Sensors
- Vision Systems
- Integration and Networking
- PLCs and HMIs
- Maintenance and Troubleshooting
- Justifying the Use of a Robot

Withdrawal Procedures:

Withdrawal requests MUST BE initiated by the student. Requests for withdrawal become official and effective the date they are received in the records office. Students who stop coming to class (that is, stop participating on the class website) but fail to drop the course will earn an “F” for the course.

NTCC Academic Honesty Statement:

“Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook.”

Academic Ethics

The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

ADA Statement:

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with John Coleman, Academic Advisor/Coordinator of Special Populations located in the College Connection. He can be reached at 903-434-8104. For more information and to obtain a copy of the Request for Accommodations, please refer to the NTCC website - Special Populations.

Family Educational Rights and Privacy Act (FERPA):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.