

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Industrial Manufacturing</u>
COURSE RUBRIC AND NUMBER	<u>RBTC 1305</u>
COURSE TITLE	<u>Robotic Fundamentals</u>
COURSE CREDIT HOURS	<u>3 2 : 2</u>
	Credits Lec Lab

I. **Catalog Description**

An introduction to flexible automation. Topics include installation, repair, maintenance, and development of flexible robotic manufacturing systems. **Prerequisite: CETT 1407. (2:2). Lab fee.**

II. **Course Objectives**

Upon satisfactory completion of this course, the student will be able to:

- A. Introduction to Robotics
 - 1. Describe general characteristics of flexible robotic manufacturing systems.
 - 2. Utilize different teaching pendants.
 - 3. Describe different control systems.
 - 4. Develop different applications of robots.

- B. Automation
 - 1. Identify types of automation.
 - 2. Discuss the impact of flexible automation on production and labor.
 - 3. Identify opportunities for automation.

- C. Equipment
 - 1. Calibrate automated equipment.
 - 2. Test automated equipment.
 - 3. Manipulate automated equipment.
 - 4. Update automated equipment.
 - 5. Fabricate parts of automated equipment.
 - 6. Maintain automated equipment.

- D. Quality Practices
 - 1. Participate in periodic or statistically based internal quality audit activities.
 - 2. Check and document calibration of gauges and other data collection equipment.
 - 3. Suggest continuous improvements.
 - 4. Inspect materials and product/process at all stages to ensure they meet specifications.
 - 5. Document the results of quality test.
 - 6. Communicate quality issues.
 - 7. Take corrective actions to restore or maintain quality.
 - 8. Record process outcomes and trends.

III. THECB Learning Outcomes (WECM)

1. Describe the history of robotics and its impact on production and the labor force.
2. Define the term "robot" and describe general characteristics.
3. Explain the physics of robot motion and use different teaching pendants.
4. Describe the characteristics of different types of robot control systems, applications of robots, and end-of-arm tooling.

IV. Evaluation

Students must demonstrate the knowledge and skills stated in the objectives in order to complete the course. Exams, quizzes, and lab assignments will be determined by the instructor.

The final grade report will be based on the percentage of the total points earned.

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Students should be able to compute their grade average anytime during the course. Missed assignments and make-up tests will be given at the discretion of the instructor.

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024)

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.

VII. Title IX and Sex Discrimination

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.