

# COURSE SYLLABUS

<b>LAST REVIEW</b>	Fall 2022
<b>COURSE TITLE</b>	Industrial Robotics
<b>COURSE NUMBER</b>	AMFT 0141
<b>DIVISION</b>	Career and Technical Education
<b>DEPARTMENT</b>	AMFT
<b>CIP CODE</b>	15.0406
<b>CREDIT HOURS</b>	3
<b>CONTACT HOURS/WEEK</b>	Class: 1                      Lab: 4
<b>PREREQUISITES</b>	None
<b>COREQUISITES</b>	None
<b>COURSE PLACEMENT</b>	None

## COURSE DESCRIPTION

This course examines types, applications and troubleshooting of industrial robots and subsystems. Included in this course is the programming of industrial robotic control software. (KBOR aligned)

## PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:

[https://kansasregents.org/workforce\\_development/program-alignment](https://kansasregents.org/workforce_development/program-alignment)

## Program Learning Outcomes

1. The student will be able to assess hazards, mitigate risk, and develop procedures and protocol to create a safe working environment.
2. Student will be able to collaborate with team members in developing a plan to maximize efficiency in a production facility.
3. The student will be able to evaluate implicit tasks and identify necessary resources to install and maintain industrial equipment.
4. Student will be able to troubleshoot and repair industrial equipment in the high stress environment of modern manufacturing.

## TEXTBOOKS

<http://kckccbookstore.com/>

## **METHODS OF INSTRUCTION**

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom.

Methodology will be selected to best meet student needs.

## **COURSE OUTLINE**

- I. Safety principles of robotics
- II. History of robotics
- III. Identifying hardware components of robot system
- IV. Various robotics application
- IV. Software programming principles and types
- V. Path Planning
- VI. Hardware wiring principles
- VII. Advantages of robotics in an automated manufacturing environment

## **COURSE LEARNING OUTCOMES**

Upon successful completion of this course, the student will:

- A. The student will be able to demonstrate the safety procedures when working with industrial robotic systems.
- B. The student will be able to describe the various types and applications of industrial robots.
- C. The student will be able to describe the various types and functions of robotic subsystems.
- D. The student will be able to select the proper wiring and terminations of robotic hardware.
- E. The student will be able to describe the various types of robotic software programs.
- F. The student will be able to demonstrate how to program a representative sample of robotic systems.
- G. The student will be able to demonstrate the process of industrial robotic system troubleshooting.

## **ASSESSMENT OF COURSE LEARNING OUTCOMES**

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

## **COLLEGE POLICIES AND PROCEDURES**

*Student Handbook*

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

*College Catalog*

<https://www.kckcc.edu/academics/catalog/index.html>

*College Policies and Statements*

<https://www.kckcc.edu/about/policies-statements/index.html>

*Accessibility and Accommodations*

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.