COURSE OUTCOME MATRIX
COURSE SYLLABUS
PART 2 of 3

Course Number and Title	MX 190 Industrial Robotics

Credit Hours	2

Course Description	This course presents a comprehensive introduction to industrial robotics based on the FANUC Robotics CERT platform. Students learn the principles and practices of programming industrial manipulators, using an actual robot and a high-fidelity simulation environment for demonstrations as well as hands-on assignments. Topics covered include system hardware components, coordinate systems, positional representation and control, teach pendant programming, and I/O interfacing.

Prerequisite(s) and/or Corequisite(s)	EG 103 and EG 107

Required Textbooks/References/Course Materials:

Basic Robotics	1st	Dinwiddie, Keith	Cengage Learning	1133950191

	General Education Outcomes
1	Utilize written and verbal language to discuss and comprehend information, incorporating a variety of technologies, such as text, data, and images (written language, verbal language, and information technology).
2	Identify and interpret relevant information in order to formulate an opinion or conclusion (critical thinking).
3	Demonstrate and communicate computational methods and mathematical reasoning in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate) (quantitative literacy and fluency).
4	Communicate in appropriate ways with those who are culturally diverse (intercultural competence).

	Program/Department Outcomes
1	Prepare students to become safe and competent electrical technicians
2	Provide opportunities to display critical thinking skills
3	Demonstrate responsible professional conduct and behavior.
4	Effectively communicate.
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	Course Outcomes (CO)	Bloom's Domain for CO (C, A, P), Category, and Level	Program/ Department Outcome(s)	Written Language	Verbal Language	Information Technology	Critical Thinking	Quantitative Literacy and Fluency	Intercultural Competence
1	Comprehend basic terms and components relative to "robots and manipulators".	C-Understanding (2)	1, 4	1	1	1	1	2	0
2	Compute basic calculations relative to electrical, mechanical, and fluid power systems as they apply to robots.	C-Applying (3)	1	1	1	1	1	1	0
3	Comprehend different classifications and types of robots/manipulators and their application.	C-Understanding (2)	4	1	1	1	1	2	0
4	Demonstrate the ability to program the FANUC robot to do "Pick and Place" operations.	C-Applying (3)	1	1	1	1	1	1	0
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6									
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10									

Bloom's Domain Legend
C = Cognitive
A = Affective
P = Psychomotor

General Education Outcome Legend
2 = Included and Measurable
1 = Introduced and/or Minimally Addressed and Not Measurable
0 = Not included

Approved: May 2021
Reviewed: November 11, 2021