

# ROBOTICS (ROB)

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## **ROB 101 Robotics I - I (2 Credits)**

15 lecture, 30 lab, 2 total contact hours

In this hands-on course, students will learn to operate an industrial robot and create entry-level robot programs. The primary emphasis of this course is to introduce students to industrial robotics and automated manufacturing. Student will learn to utilize different jog modes, tool center points and discrete inputs and outputs as well as how these factors affect a robot's motion path. Students with technology interests that enjoy working with their hands like gaming, manipulating code, robotics, and 3D printing are suited for this line of work. This is the first course of the robotics series. Level I Prerequisite: Academic Reading and Writing Levels of 6

## **ROB 110 Robotics I - II (2 Credits)**

15 lecture, 30 lab, 2 total contact hours

This is the second course of the robotics series. In this course, students will learn to create entry-level robot programs that utilize subroutines and offsets. The primary emphasis of this course is to introduce students to industrial robot programming practices. The course will instruct the student to utilize subroutines, variables, loops, offsets, position types, inputs and outputs, and field devices. Level I Prerequisite: Academic Reading and Writing Levels of 6; ROB 101 minimum grade "C", may enroll concurrently

## **ROB 174 ROB Co-op Education I (1-3 Credits)**

120 to 360 clinical/other, 1 to 3 total contact hours

In this course, students gain skills from a new experience in an approved, compensated industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two possible co-op experiences. Level I Prerequisite: Academic Reading and Writing Levels of 6; consent required

## **ROB 212 Robotics II (4 Credits)**

30 lecture, 60 lab, 4 total contact hours

In this course, students will learn to create advanced level robot programs. The primary emphasis of this course is to introduce students to advanced programming practices and entry-level integration. Students will learn to utilize fixture and part-based offsets, nested loops, shifting offsets, input and output configuration, and methods for robot integration. Level I Prerequisite: Academic Reading and Writing Levels of 6; ROB 101 and ROB 110, minimum grade "C"

## **ROB 221 Robotics III (4 Credits)**

30 lecture, 60 lab, 4 total contact hours

In this course, students will learn to work with peripheral devices in various robotic workcells, advanced robotic software options, and be introduced to robotic simulation software. Students will learn how to build computer simulated models of robotic workcells and load the resulting programs into industrial robots. This course was previously ROB 222 and ROB 223. Level I Prerequisite: Academic Reading and Writing Levels of 6; Academic Math Level 3; ROB 212 minimum grade "C" Level II Prerequisite: ELE 224

## **ROB 274 ROB Co-op Education II (1-3 Credits)**

120 to 360 clinical/other, 1 to 3 total contact hours

In this course, students gain skills from a new experience in an approved, compensated, industry-related position. Together with the instructor and employer, students set up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the second of two co-op courses. Level I Prerequisite: Academic Reading and Writing Levels of 6; ROB 174; consent required