

PROGRAM DESCRIPTION: The certificate program in robotics is designed to provide students the skills set to enter the job market or pursue further education in the areas of automation, computer science, electronics, and control systems. Students gain hands-on experience with industrial systems and machinery such as PLC’s and motors. Through programming classes students gain a fundamental understanding of the structure and nature of code and software which is a crucial part of modern industry and business. Finally students take robotics classes that will teach them to set up and integrate robotic systems for both small and large scale application. Through the Smart Automation Certification Alliance (SACA) students can earn industry certificates to validate their learning and provide further opportunities.

PROGRAM OUTCOMES AND CURRICULUM MAP.

Minimum Credit Hours Required for Certificate= 36

CERTIFICATE B

Semester 1		14-16 hours
Course No.	Course Title	Credit
INPR-114	OSHA 10.....	1
CSCI-102	Introduction to Programming	3
CSCI-140	Overview of Computer Science.....	3
ROBT-100	Basic Electronics	4
*	Math Requirement.....	3/5

Semester 2		8 hours
Course No.	Course Title	Credit
ROBT-12-	Physical Computing Applications	3
INPR-131	Shop Operations	2
CSCI-107	Advanced Programming.....	3

Semester 3		11 hours
Course No.	Course Title	Credit
INPR-160	Fluid Power 1.....	2
INPR-190	Industrial PLC’s.....	3
INPR-231	Fundamentals of Motor Control	3
ROBT-130	Industrial Robotics Fundamentals	3

Semester 4		3 hours
Course No.	Course Title	Credit
ROBT-200	Mobile Robots and Vision Systems.....	3



PROGRAM DESCRIPTION: The Associate in Applied Science degree in Robotics is a cross disciplinary program that focuses on automation and control of mechanical systems. The development of skills in the areas of electronics, mechanics, and computer science is emphasized. Students get a hands-on experience throughout the program. Students gain industrial machinery skills by working with motors, programmable logic controllers, and hydraulic, and pneumatic systems. Building, analyzing, and troubleshooting circuits will allow students to gain an understanding of AC and DC power. Computer science classes will give students the opportunity to develop skills for programming robotics systems, sensors, and microcontrollers. Finally, students will learn about robotics systems starting with the development of small-scale robots and progressing to industrial robots and computer vision technology. Working with local and state-wide industry partners, the robotics program seeks to develop high-demand skills that are marketable to employers. Through the Smart Automation Certification Alliance (SACA) students can earn industry certificates to validate their learning and provide further opportunities

PROGRAM OUTCOMES AND CURRICULUM MAP.

Minimum Credit Hours Required to Graduate = 62

Semester 1		15-17 hours
Course No.	Course Title	Credit
INPR-114	OSHA 10.....	1
CSCI-102	Introduction to Programming	3
CSCI-140	Overview of Computer Science.....	3
ROBT-100	Basic Electronics	4
*	Math Requirement	3/5
*	Student Success Requirement.....	1

Semester 2		16 hours
Course No.	Course Title	Credit
ROBT-120	Physical Computing Applications	3
ROBT-110	Creative Design	3
INPR-131	Shop Operations	2
CSCI-107	Advanced Programming	3
*	Personal Wellness Requirement.....	2
*	Communication Requirement.....	3

Catalog Communication Elective3

Semester 3		17 hours
Course No.	Course Title	Credit
INPR-160	Fluid Power I.....	2
INPR-190	Industrial PLC's.....	3
INPR-231	Fundamentals of Motor Control	3
ROBT-130	Industrial Robotics Fundamentals	3
	Communication Requirement	3
	Social Science Requirement	3

Semester 4		15 hours
Course No.	Course Title	Credit
INPR-185	Industrial Writing.....	3
INPR-233	Variable Speed Motors.....	3
ROBT-200	Mobile Robots and Vision Systems.....	3
CSCI-150	Networking Essentials	3
CSCI-230	Security+.....	3





ROBOTICS & MECHATRONICS

Program Code: ROBT.AS

PROGRAM DESCRIPTION: The Associate in Science (A.S.) degree program in Robotics and Mechatronics prepares students for transfer to a four-year university to continue more advanced studies. The A.S. degree program is designed to allow students the flexibility to take a wide range of elective classes based on their academic interests and goals. Students who choose the A.S. route will build a strong foundation in robotics and mechatronics using professional, industry grade equipment and labs.

A few examples of majors that students can transfer into include:

Mechatronics
Robotics and Automation
Machine Learning and Artificial Intelligence
Technology Leadership

PROGRAM OUTCOMES AND CURRICULUM MAP.

Minimum Credit Hours Required to Graduate = 60

Semester 1		13-15 hours
Course No.	Course Title	Credit
**	General Psychology or Introduction to Sociology	3
*ENGL-101	English I	3
*MATH-108	College Algebra or Higher.....	3/5
*	Humanities & Fine Arts Requirement	3
*	Student Success Requirement.....	1

Semester 2		14-18 hours
Course No.	Course Title	Credit
*ENGL-102	English II	3
*	Science Lab Requirement.....	4/5
*	Social Science Requirement	3
*	Personal Wellness Requirement.....	2/3
***	Program Elective Course	1/5

Semester 3		15-17 hours
Course No.	Course Title	Credit
COMM-101	Public Speaking	3
*	Humanities & Fine Arts Requirement	3
*	Mathematics & Natural Science Requirement	1/5
***	Program Elective Course	1/5
***	Program Elective Course	1/5

Semester 4		12 hours
Course No.	Course Title	Credit
***	Program Elective Course	1/5
***	Program Elective Course	1/5
***	Program Elective Course	1/5
****	Open Elective	3

Elective Course Options

Course No.	Course Title	Credit
ROBT-110	Creative Design	3
ROBT-100	Basic Electronics.....	4
ROBT-120	Physical Computing Applications	3
ROBT-130	Industrial Robotics Fundamentals	3
ROBT-200	Mobile Robots and Vision Systems.....	3
CSCI-102	Introduction to Programming	3
CSCI-107	Advanced Programming.....	3
CSCI-122	Web Animation	3
CSCI-130	Introduction to Cybersecurity	3
CSIC-140	Overview of Computer Science.....	3
CSIC-150	Microsoft Networking Essentials	3
CSIC-152	Computer Networks.....	3
CSIC-276	Web Design I	3
ECON-111	Macroeconomics	3
INPR-114	OSHA 10.....	1
INPR-131	Shop Operations	2
INPR-134	Mechanical Systems	3
INPR-160	Fluid Power I	2

