

# Robotics/Automated Systems Technology A.A.S. (A240) Program Course Requirements 2019-2020

Revised 2/20/2019

**Student Name** \_\_\_\_\_ **Student ID#** \_\_\_\_\_

## Required Core Courses

Course #			Title	Credits	Lec Hrs	Lab Hrs
	MTTS	1264	Introduction to Machining Processes	2	1	2
	RAST	1101*	Industrial Electronics I	3	3	0
	RAST	1102*	Industrial Electronics II	3	3	0
	RAST	1103*	Motors and Drives	3	3	0
	RAST	1104	Introduction to Automation	2	1	2
	RAST	1109	Computers in Industry	2	1	2
	RAST	1110	Introduction to Manufacturing	2	2	0
	RAST	1111	Industrial Electronics Lab I	2	0	4
	RAST	1113*	Motors and Drives Lab	3	0	6
	RAST	1120	Introduction to Engineering Graphics	2	1	2
	RAST	1206*	Programmable Logic Controllers I	3	1	4
	RAST	1212*	Industrial Electronics Lab II	2	0	4
	RAST	2101*	Application Planning & Layout	2	1	2
	RAST	2105*	Transducers	2	1	2
	RAST	2106*	Industrial Electronics III	2	2	0
	RAST	2116*	Industrial Electronics Lab III	2	0	4
	RAST	2132*	Robotic Programming	3	1	4
	RAST	2151*	Robotic Integration Lab	6	0	12
	RAST	2154*	Robot Controller Maintenance	2	1	2
	RAST	2165*	Fluid Power	2	1	2
	RAST	2355*	Programmable Logic Controllers II	2	1	2
	RAST	2395*	Advanced Robot Controller Programming	2	1	2
	RAST	2390*	Robotics Internship <b>OR</b>	1-3		
	RAST	2399*	Independent Study			

**Total Required Core Credits** **55**

## Required General Education Courses

An associate in applied science degree requires a minimum of 15 general education credits selected from **at least three of the ten goal areas** of the Minnesota Transfer Curriculum (MnTC).

Course #			Title	Credits	Lec Hrs	Lab Hrs
Students must include within the General Education component the following course:						
	MATH	1470	College Algebra (Goal 3)	3	3	0
			Additional MnTC courses	12		

**Total Required General Education Credits** **15**

## GRADUATION REQUIREMENT

**70**

*\*Denotes Prerequisite*

**In addition to the program requirements listed above, students must meet the following conditions in order to graduate:**

1. College Cumulative GPA Requirement: Cumulative grade point average (GPA) of credits attempted and completed at CLC must be at least 2.0;
2. College Technical Core GPA Requirement: Cumulative GPA of credits attempted and completed towards the technical core of the diploma or degree must be at least 2.0;
3. Residency Requirement: students must complete 25% of their credits at Central Lakes College.



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## Fall Semester – 1<sup>st</sup> Year

Course			Title	Credits	Lec Hrs	Lab Hrs
	MTTS	1264	Introduction to Machining Processes	2	1	2
	RAST	1101*	Industrial Electronics I	3	3	0
	RAST	1104	Introduction to Automation	2	1	2
	RAST	1109	Computers in Industry	2	1	2
	RAST	1110	Introduction to Manufacturing	2	2	0
	RAST	1111	Industrial Electronics Lab I	2	0	4
	RAST	1120	Introduction to Engineering Graphics	2	1	2
			General Education	3		
<b>Total Fall Semester – 1<sup>st</sup> Year</b>				<b>18</b>		

## Spring Semester – 1<sup>st</sup> Year

Course			Title	Credits	Lec Hrs	Lab Hrs
	RAST	1102*	Industrial Electronics II	3	3	0
	RAST	1103*	Motors and Drives	3	3	0
	RAST	1113*	Motors & Drives Lab	3	0	6
	RAST	1206*	Programmable Logic Controllers I	3	1	4
	RAST	1212*	Industrial Electronics Lab II	2	0	4
			General Education	3		
<b>Total Spring Semester – 1<sup>st</sup> Year</b>				<b>17</b>		

## Summer Session – 1<sup>st</sup> Year

Course			Title	Credits	Lec Hrs	Lab Hrs
	RAST	2101*	Application Planning & Layout	2	1	2
	RAST	2106*	Industrial Electronics III	2	2	0
	RAST	2116*	Industrial Electronics Lab III	2	0	4
<b>Total Summer Session – 1<sup>st</sup> Year</b>				<b>6</b>		

## Fall Semester – 2<sup>nd</sup> Year

Course			Title	Credits	Lec Hrs	Lab Hrs
	RAST	2105*	Transducers	2	1	2
	RAST	2132*	Robotic Programming	3	1	4
	RAST	2151*	Robotic Integration Lab	6	0	12
	RAST	2165*	Fluid Power	2	1	2
	RAST	2355*	Programmable Logic Controllers II	2	1	2
	MATH	1470	College Algebra (Goal 3)	3	3	0
<b>Total Fall Semester – 2<sup>nd</sup> Year</b>				<b>18</b>		

## Spring Semester – 2<sup>nd</sup> Year

Course			Title	Credits	Lec Hrs	Lab Hrs
	RAST	2154*	Robot Controller Maintenance	2	1	2
	RAST	2395*	Advanced Robot Controller Programming	2	1	2
	RAST	2390*	Robotics Internship <b>OR</b>	1-3		
	RAST	2399*	Independent Study			
			General Education	6		
<b>Total Spring Semester – 2<sup>nd</sup> Year</b>				<b>11</b>		

## GRADUATION REQUIREMENT

**70**

*\*Denotes Prerequisite*