

Below is the natural sequence of Artificial Intelligence and Robotics Engineering program courses designed for students to register per semester. Other degree requirements and comprehensive details are to be found in the AUJS Academic Catalog.

Course Code and Description	Credits	Prerequisite(s)	
1st Semester			
MTH 232 - Calculus I	3	None	
MTH 235 - Discreet Math	3	None	
ENGR 230 - Engineering Drawing	3	None	
CIV 101 - The Ancient World History	3	None	
ENG 101 - Argument	3	None	
Total Credits	15		
2nd Semester			
PHYS 232 + PHYSL 232 - Calculus Based Physics I + Calculus Based Physics Lab I	4	MTH 232	
MTH 233 - Calculus II	3	MTH 232	
MTH 340 - Linear Algebra	3	MTH 232	
ITE 202 - IT Systems	3	ENGR 230	
ENG 102 - Critical Reading	3	ENG 101	
Total Credits	16		
3rd Semester			
PHYS 233 + PHYSL 233 - Calculus-based Physics II + Calculus-based Physics Lab II	4	PHYS 232 + PHYSL 232	
ENGR 344 - Mechanics I: Statics	3	PHYS 232 + PHYSL 232	
MTH 331 - Calculus III	3	MTH 233	
ENGR 244 - Engineering Computing	3	MTH 340	
ITE 303 - Introduction to Programming	3	ITE 202	
Total Credits	16		
4th Semester			
ENGR 390 - Circuits	3	PHYS 233 + PHYSL 233	
MTH 332 - Differential Equations	3	MTH 331	
STT 342 - Engineering Statistics	3	ENGR 244	
ITS 350 - Introduction to Data Structures and Algorithms	3	ITE 303	
ENG 203 - Research & Project - Writing	3	ENG 102	
Total Credits	15		
5th Semester			
ENGR 348 - Mechanics II: Dynamics	3	ENGR 344 + Corequisite: MTH 332	
ENGR 231 - Fabrication Shop (Team-based Problem Solving)	3	ENGR 230	
ENGR 313 - Measurements Laboratory	3	PHYS 233 + PHYSL 233	
CIV 203 - Civilization III: The Ancient World (Humanities)	3	CIV 101	
ENGR 320 + ENGR 320L Introduction to Artificial Intelligence + Introduction to Artificial Intell	4	STT 342	
Total Credits	16		
6th Semester			
ENGR 444 - Engineering Project Management	3	ENGR 231	
ITS 310 - Computing and Robotics	3	ITE 303	
Engineering / IT / SE Elective	3	See course description	
ENGR 323 - Data Science and Analytics	3	STT 342	
ENGR 324 - Mechatronics	3	ENGR 390	
Total Credits	15		
7th Semester			
ENGR 491 - Design I	3	ENG 203 + 75 Credits	
ENGR 461 - System Dynamics and Control	3	ENGR 390 + MTH 332	
ENGR 426 - Digital Signal Processing	3	Corequisite: ENGR 461	
ENGR 422 - Computer Vision	3	ITS 350	
ENGR 366 - Applied Electronics	3	ENGR 390	
Total Credits	15		
8th Semester			
ENGR 492 - Design II	3	ENGR 491	
ENGR 423 - Large Language Models	3	ITS 350	

ENGR 424 - Machine Learning	3	ITS 350 + STT 342	
ENGR 483 - Robotics	3	ENGR 348 + Corequisite: ENGR 461	
Engineering / IT / SE Elective	3	See course description	
Total Credits	15		

9th Semester

Core Elective	3	See course description	
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Summer/Winter

ENGR 490 - Engineering Internship	1	Senior Standing (to be taken alone)	
Program Total Credits	127		

Program Credits

Core	44 Credits (14 Courses)
Major	74 Credits (25 Courses)
Engineering Electives	9 Credits (3 Courses)
Total	127 Credits (42 Courses)

General Tips and Recommendations

AI and Robotics Engineering electives are 200+ courses in either the Engineering or Computing and Informatics Department.

Varied Degree Paths:

Student degree paths may vary slightly from this form. If academic record differs from the courses listed in this form, please contact the Registration and Records Office during the advising week for clarification. Independent study, transfer credits or other unique circumstances are typically accounted for in the elective category.