Robotics Graduate Certificate Requirements

		Requirement	Course Number
Date completed		**(4) CORE COURSE REQUIREMENT**	
		Robot Mechanics Core Area (***Required***): ROBOT 6000/ CS 6310/ ECE 6650/ ME EN 6220	Robotics II: Mechanics
		Robot Control Core Area (***Required***): ROBOT 6100/ CS 6330/ ECE 6651/ ME EN 6230	Robotics II: Control
		Cognition Core Area (***Pick one***): ROBOT 6200/ CS 6370/ ME EN 6225	Motion Planning
		or CS 6300	Artificial Intelligence
		Perception Core Area (***Pick one***): CS 6640/ BME 6640/ ECE 6532	Image Processing
		or CS 6320	Computer Vision
	Categories	**(1) ELECTIVE COURSE REQUIREMENT**	**Course Title**
	Robot Mechanics	ROBOT 7000/ ME EN 7230/ CS 7310	Manipulation and Mobility
	Robot Mechanics	ROBOT 7010/ CS 7320/ ME EN 7220	System ID for Robotics
	Robot Control	ME EN 6200 or ECE 6615	Classical Control Systems
	Robot Control	ECE 6670	Control of Electric Motors
	Robot Control	ME EN 6210/ ECE 6652/ CH EN 6203	State Space Control
	Robot Control	ME EN 7200	Nonlinear Control
	Robot Control	ME EN 7210	Optimal Control
	Robot Control	ECE 6570	Adaptive Control
	Cognition	CS 6350	Machine Learning
	Cognition	CS 6958	Robot Learning
	Perception	CS 7640	Advanced Image Processing
	Perception	CS 6353	Deep Learning for Image Analysis
	Perception	ECE 6530	Digital Signal Processing
	Human-Robot Interaction	CS 6360	Virtual Reality
	Human-Robot Interaction	ROBOT 7400/ ME EN 7240	Haptics
	Human-Robot Interaction	ROBOT 6400/ BME 6440/ ECE 6654	Neuro-Robotics
	Robot Design	ROBOT 6500/ ME EN 6240	Advanced Mechatronics
	Robot Design	ROBOT 6510	Wearable Robotics
	Robot Design	ECE 6780/ CS 6780	Embedded System Design
	Robot Design	ECE 6960	Robotic Millisystems
	Robot Design	CS 6956	Medical Robotics
Date completed		**SEMINAR REQUIREMENT (1 cr)**	**Course Title**
		ROBOT 6800	Robotics Seminar
Date completed		**PROJECT REQUIREMENT (2 cr)**	**Course Title**
		ROBOT 6920	Project