Controls/Robotics/Mechatronics PhD Course Recommendations

Starting Even (E) Year	Autumn (E)	Winter (O)	Spring (O)	Autumn (O)	Winter (E)	Spring (E)
Required Courses						
Mechanical Eng. Analysis I	ME564					
Mechanical Eng. Analysis II		ME565				
Mechanical Eng. Seminar	ME520	ME520	ME520	ME520	ME520	ME520
Mathematical Foundations						
Math. Foundations of Sys.	ME510			ME510		
Manifold and Geometry					ME570 (E)	
Geometric Methods						ME580(E)
Applied Linear Algebra				Amath584		
Applied Prob. & Statistics						Amath506
Mechatronics, Controls and Robotics						
Linear Systems Theory	ME547					
Linear Multivariable Cont.		ME548				
Estimation and Sys. Id.			ME549			ME549
Digital Control		ME581			ME581	
Nonlinear Control Systems			ME583(O)			
Robust Control			ME594(O)			
Feedforward Control						ME593(E)
Nonlinear Optimal Control				ME550(O)		
Optimization in Systems		ME578			ME578	
Intro. Discrete Event Sys.						ME582(E)
Syst. ID & Adaptive Control						ME585(E)
Models of Robot Manipulation		ME543(O)				
Networked Dynamic Systems						ME597(E)
Dynamics						
Dynamics and Vibrations	ME588			ME588		
Vibrations					ME589(E)	
Principles of Dynamics	AA571			AA571		
Flight Controls						
Stability/Control: Flight Vehicles	AA516			AA516		
Aut. Control of Flight Vehicles			AA518(O)			
Spacecraft Dyn. & Control		AA528			AA528	
Undergraduate Courses						
Automatic Control	ME471			ME471		
Instrumentation	ME473			ME473		
Embedded Computing		ME477			ME477	
Dynamics	ME469			ME469		
Electric Circuits Laboratory I		Phys344			Phys 334	
Electric Circuits Laboratory II			Phys 335			Phys 335

(O) Stands for odd year offerings, (E) for even year.
A suggested sequence for first 2 years is highlighted. Discuss with Faculty Advisor about alternate sequences.
Consider taking research credits (as needed) early on and taking no more than 2 courses (+ seminar) each quarter.
If controls/dynamics background is not strong, take ME471/ME469 in first year to help with qualifying exam.

Controls/Robotics/Mechatronics PhD Course Recommendations

Starting Odd (O) Year	Autumn (O)	Winter (E)	Spring (E)	Autumn (E)	Winter (O)	Spring (O)
Required Courses						
Mechanical Eng. Analysis I	ME564					
Mechanical Eng. Analysis II		ME565				
Mechanical Eng. Seminar	ME520	ME520	ME520	ME520	ME520	ME520
Mathematical Foundations						
Math. Foundations of Sys.	ME510			ME510		
Manifold and Geometry		ME570(E)				
Geometric Methods			ME580(E)			
Applied Linear Algebra				Amath584		
Applied Prob. & Statistics						Amath506
Mechatronics, Controls and Robotics						
Linear Systems Theory	ME547					
Linear Multivariable Cont.		ME548				
Estimation and Sys. Id.			ME549			ME549
Digital Control		ME581			ME581	
Nonlinear Control Systems						ME583 (O)
Robust Control						ME594 (O)
Feedforward Control			ME593 (E)			
Nonlinear Optimal Control	ME550(O)					
Optimization in Systems		ME578			ME578	
Intro. Discrete Event Sys.			ME582 (E)			
Syst. ID & Adaptive Control			ME585 (E)			
Models of Robot Manipulation					ME543 (O)	
Networked Dynamic Systems			ME597(E)			
Dynamics						
Dynamics and Vibrations	ME588			ME588		
Vibrations		ME589 (E)				
Principles of Dynamics	AA571			AA571		
Flight Controls						
Stability/Control: Flight Vehicles	AA516			AA516		
Aut. Control of Flight Vehicles						AA518 (O)
Spacecraft Dyn. & Control		AA528			AA528	
Undergraduate Courses						
Automatic Control	ME471			ME471		
Instrumentation	ME473			ME473		
Embedded Computing		ME477			ME477	
Dynamics	ME469			ME469		
Electric Circuits Laboratory I		Phys 334			Phys 334	
Electric Circuits Laboratory II			Phys 335			Phys 335

(O) Stands for odd year offerings, (E) for even year.
A suggested sequence for first 2 years is highlighted. Discuss with Faculty Advisor about alternate sequences.
Consider taking research credits (as needed) early on and taking no more than 2 courses (+ seminar) each quarter.
If controls/dynamics background is not strong, take ME471/ME469 in first year to help with qualifying exam.