ENGINEERING: AUTONOMY AND ROBOTICS, MENG

for the degree of Master of Engineering in Engineering, Autonomy and Robotics Concentration

The Master of Engineering (MEng) in Engineering, Autonomy and Robotics Concentration is a professionally oriented degree program for students whose primary intent is a career in industry or government.

This degree differs from the Master of Science (MS) degree in that it is a professionally oriented master's degree that is not a pathway to a doctoral program. The Major in Engineering for the M.Eng. degree requires the selection of an interdisciplinary concentration, which must be identified at the time of application.

Available concentrations are:

- Aerospace Systems Engineering (http://catalog.illinois.edu/graduate/ engineering/engineering-meng/aerospace-systems/)
- · Autonomy and Robotics (p. 1)
- Digital Agriculture (http://catalog.illinois.edu/graduate/engineering/ engineering-meng/digital-agriculture/)
- Energy Systems (http://catalog.illinois.edu/graduate/engineering/ engineering-meng/energy-systems/)
- Instrumentation and Applied Physics (http://catalog.illinois.edu/ graduate/engineering/engineering-meng/instrumentation-appliedphysics/)
- Plasma Engineering (http://catalog.illinois.edu/graduate/ engineering/engineering-meng/plasma-engineering/)

for the degree of Master of Engineering in Engineering, Autonomy and Robotics Concentration

For additional details and requirements, refer to the department's website (https://autonomyandrobotics.grainger.illinois.edu/) and the Graduate College Handbook (https://grad.illinois.edu/gradhandbook/).

Code	Title	Hours
Core Coursework		12
ME 445	Introduction to Robotics	
ECE 484	Principles of Safe Autonomy	
CS 588	Autonomous Vehicle System Engineering	
Select one of the fol	lowing:	4
Control and Dyna	mics	
ECE 486	Control Systems	
SE 422	Robot Dynamics and Control	
Optimization		
AE 504	Optimal Aerospace Systems	
ECE 490	Introduction to Optimization	
Hardware System	IS	
ME 451	Computer-Aided Mfg Systems	
Artificial Intelliger	nce and Perception	
CS 440	Artificial Intelligence	

Total Hours		32
Optimization, Har	dware Systems, Artificial Intelligence and n and Applications.	
,	selected from the course list, with advisor includes courses in Control and Dynamics,	12
Additional Course	ework	
Other advisor-a	approved courses.	
ENG 572	Professional Practicum	
ENG 573	Capstone Project	
Professional Deve	elopment Course	4
CS 465	User Interface Design	
Design and Ap	plications	
ECE 544	Topics in Signal Processing	
CS 543	Computer Vision	

Other Requirements and Conditions (may overlap)

Requirement	Description
A minimum of 20 credit hours must be taken from the University of Illinois Urbana-Champaign campus.	
A minimum of 12 500-level credit hours. ENG 572 and ENG 573 may not be used to satisfy this requirement.	
No courses used to fulfill any degree requirement may be taken using the "Credit/No Credit" option.	
Minimum GPA: 3.0	

Elective Course List

Enrollment in these courses depends on course availability.

Code	Title	Hours	
ARTIFICIAL INTELLIGENCE & PERCEPTION			
CS 440/ECE 448	Artificial Intelligence	3 or 4	
CS 446/ECE 449	Machine Learning	3 or 4	
CS 447	Natural Language Processing	3 or 4	
CS 543	Computer Vision	4	
CS 546	Advanced Topics in Natural Language Processing	4	
ECE 534	Random Processes	4	
ECE 543	Statistical Learning Theory	4	
ECE 561	Statistical Inference for Engineers and Data Scientists	4	
ECE 566	Computational Inference and Learning	4	
IE 534/CS 547	Deep Learning	4	
SE 524	Data-Based Systems Modeling	4	
CONTROL & DYNAM	ICS		
AE 454	Systems Dynamics & Control	4	
AE 554/TAM 516	Dynamical Systems Theory	4	
AE 555/SE 521	Multivariable Control Design	4	
AE 556	Robust Control	4	
ECE 486	Control Systems	4	
ECE 515/ME 540	Control System Theory & Design	4	

Information listed in this catalog is current as of 04/2025

HARDWARE SYSTEMSHARDWARE SYSTEMSCS 431Embedded Systems3ECE 437Sensors and InstrumentationME 451Computer-Aided Mfg Systems3ME 452Num Control of Mfg Processes3ME 455Micromanufacturing Process & Automation0ME 451Computer Cntrl of Mech Systems0SE 420Digital Control Systems0SE 423Mechatronics0OPTIMIZATIONA E 504Optimal Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationIE 521Convex OptimizationS 424Real-Time Systems3CS 424Real-Time Systems3CS 424Real-Time Systems3CS 424Real-Time Systems3CS 424Real-Time Systems3CS 424Real-Time Systems3CS 424<					
SE 520 Optimum Control Systems ECE 553 Control of Stochastic Systems ECE 557 Geometric Control Theory ECE 557 Geometric Control Theory ECE 568 Model & Chtrl Electromech Syst ECE 573 Power System Control ME 460 Industrial Control Systems ME 561 Convex Methods in Control ME 562 Robust Adaptive Control SE 422/ECE 489/ Robot Dynamics and Control ME 446 State Space Design for Control SE 525 Control of Complex Systems TAM 412 Intermediate Dynamics DESIGN & APPLICATIONS CS CS 455 User Interface Design CS 455 User Interface Design CS 455 User Interface Design SE 400 Engineering Law SE 400 Engineering Law SE 423 Num Control of Mfg Processes ME 455 Micromanufacturing Process & Automation ME 455 Micromanufacturing Process & Automation ME 455 Micromanufacturing Process & Automation ME 450 Optimal Aerospace Systems SE 420 Dig	ECE 517	Nonlinear & Adaptive Control	4		
BCE 555 Control of Stochastic Systems ECE 555 Control of Stochastic Systems ECE 557 Geometric Control Theory ECE 557 Geometric Control Theory ECE 557 Power System Control ME 460 Industrial Control Systems ME 561 Convex Methods in Control ME 562 Robust Adaptive Control SE 422/ECE 489/ Robot Dynamics and Control ME 446 State Space Design for Control SE 422 Control of Complex Systems TAM 412 Intermediate Dynamics DESIGN & APPLICATIONS CS 465 CS 465 User Interface Design CS 405 User Interface Design CS 431 Embedded Systems SE 420 Domputer-Aided Mfg Systems SE 420 Digital Control of Mfg Processes ME 455 Micromanufacturing Process & Automation ME 450 Doptimiz Noruer Orth of Mech Systems SE 420 Dig		Analysis of Nonlinear Systems	4		
ECE 557 Geometric Control Theory ECE 557 Geometric Control Theory ECE 557 Power System Control ME 460 Industrial Control Systems ME 561 Convex Methods in Control ME 562 Robust Adaptive Control SE 422/ECE 489/ Robot Dynamics and Control ME 446 State Space Design for Control SE 424 State Space Design for Control SE 525 Control of Complex Systems TAM 412 Intermediate Dynamics DESIGN & APPLICATIONS Consplex Systems CS 465 User Interface Design CS 440 Engineering Law SE 420 Doptimal Aerospace Systems	CE 553	Optimum Control Systems	4		
BCE 568 Model & Chrl Electromech Syst ECE 568 Model & Chrl Electromech Syst ECE 573 Power System Control ME 460 Industrial Control Systems ME 561 Convex Methods in Control ME 562 Robust Adaptive Control SE 422/ECE 489/ Robot Dynamics and Control ME 446	ECE 555	Control of Stochastic Systems	4		
ECE 573 Power System Control ME 460 Industrial Control Systems ME 561 Convex Methods in Control ME 562 Robust Adaptive Control SE 422/ECE 489/ Robot Dynamics and Control ME 446	CE 557	Geometric Control Theory	4		
ME 460 Industrial Control Systems ME 561 Convex Methods in Control ME 562 Robust Adaptive Control SE 422/ECE 489/ Robot Dynamics and Control ME 446 State Space Design for Control SE 525 Control of Complex Systems TAM 412 Intermediate Dynamics DESIGN & APPLICATIONS C CS 465 User Interface Design CS 465 User Interface Design CS 465 User Interface Design CS 465 Human-Computer Interaction SE 400 Engineering Law SE 400 Engineering Law SE 431 Embedded Systems ME 451 Computer-Aided Mfg Systems ME 452 Num Control of Mfg Processes Automation ME 451 Computer Chtrl of Mech Systems SE 420 Digital Control Systems SE 423 Mechatronics POTIMIZATION Introduction to Optimization AE 504 Optimiz by Vector Space Methds SE 420 Introduction to Optimization SE 421 Comonex Optimization	CE 568	Model & Cntrl Electromech Syst	4		
ME 561Convex Methods in ControlME 562Robust Adaptive ControlSE 422/ECE 489/Robot Dynamics and ControlME 446State Space Design for ControlSE 424State Space Design for ControlSE 525Control of Complex SystemsTAM 412Intermediate DynamicsDESIGN & APPLICATIONSCS 465User Interface DesignCS 465User Interface DesignCS 465Human-Computer InteractionSE 400Engineering LawSE 400Engineering LawSE 400Sensors and InstrumentationME 451Computer-Aided Mfg SystemsME 452Num Control of Mfg Processes AutomationME 455Micromanufacturing Process & AutomationME 450Digital Control SystemsSE 423MechatronicsOPTIMIZATIONVector Space MethdsECE 430Optimal Aerospace SystemsS 544Optimiz in Computer VisionECE 430Optimiz in Computer VisionECE 580Optimiz by Vector Space MethdsE 519/CS 586Combinatorial OptimizationE 519/CS 586Combinatorial OptimizationE 521Convex OptimizationE 521Software Engineering ISG 422/ECE 428Distributed SystemsSG 422/ECE 428Software Engineering ISG 544Communication NetworksSG 5425/ECE 428Software Engineering ISG 4227/CSE 426Software Engineering ISG 4237/CSE 427Software Engineering ISG 4247/CSE 428So	ECE 573	Power System Control	4		
ME 562 Robust Adaptive Control SE 422/ECE 439/ ME 446 Robust Adaptive Control SE 424 State Space Design for Control SE 525 Control of Complex Systems TAM 412 Intermediate Dynamics DESIGN & APPLICATION Intermediate Dynamics CS 465 User Interface Design CS 565 Human-Computer Interaction SE 400 Engineering Law SE 400 Engineering Law SE 437 Sensors and Instrumentation ME 451 Computer-Aided Mfg Systems ME 452 Num Control of Mfg Processes Automation ME 453 Micromanufacturing Process & Automation ME 454 Computer Chtrl of Mech Systems SE 420 Digital Control Systems SE 423 Mechatronics OPTIMIZATION Introduction to Optimization SE 544 Optimal Aerospace Systems SE 423 Optimiz by Vector Space Methds IE 519/CS 586 Optimiz by Vector Space Methds IE 519/CS 586 Combustorial Optimization IE 521 Contex Optimization	/IE 460	Industrial Control Systems	4		
RestantRobot Dynamics and ControlME 446State Space Design for ControlSE 424State Space Design for ControlSE 525Control of Complex SystemsTAM 412Intermediate DynamicsDESIGN & APPLICATIONSCS 465User Interface DesignCS 565Human-Computer InteractionSE 400Engineering Law3HARDWARE SYSTEMSCS 431Embedded Systems3ECE 437Sensors and Instrumentation3ME 451Computer-Aided Mfg Systems3ME 452Num Control of Mfg Processes & Automation4ME 451Computer Cntrl of Mech Systems3ME 452Micromanufacturing Process & Automation6SE 420Digital Control Systems6SE 423Mechatronics7OPTIMIZATIONAE 504Optimiz in Computer Vision7ECE 490Introduction to Optimization7ECE 580Optimiz by Vector Space Methds7ES 519/CS 586Combinatorial Optimization7ES 424Real-Time Systems3IE 519/CS 586Software Engineering I3CS 425/ECE 428Distributed Systems3CS 424/CSE 429Software Engineering I3CS 425/ECE 428Software Engineering I3CS 426/FECE 422Computer Security I3CS 426/FECE 423Software Engineering I3CS 426/FECE 424Forgara Verification3<	/IE 561	Convex Methods in Control	4		
ME 446 State Space Design for Control SE 525 Control of Complex Systems TAM 412 Intermediate Dynamics DESIGN & APPLICAT/NS Isser Interface Design CS 465 User Interface Design CS 565 Human-Computer Interaction SE 400 Engineering Law SE 400 Engineering Law SE 400 Sensors and Instrumentation ME 451 Computer-Aided Mfg Systems ME 452 Num Control of Mfg Processes Automation ME 455 Micromanufacturing Process & Automation ME 450 Digital Control Systems SE 420 Digital Control Systems SE 420 Digital Control Systems SE 423 Mechatronics OPTIMIZATION Itroduction to Optimization AE 504 Optimiz by Vector Space Methds IE 411 Optimization of Large Systems SI 422 Software Engineering I IE 519/CS 586 Combinatorial Optimization IE 521 Convex Optimization IE 521 Convex Optimization SI 4242 Softwar	/IE 562	Robust Adaptive Control	4		
SE 525Control of Complex SystemsTAM 412Intermediate DynamicsDESIGN & APPLICATIONSCS 465User Interface DesignCS 465Human-Computer InteractionSE 400Engineering LawSE 400Engineering LawAHARDWARE SYSTEMSCS 431Embedded SystemsCS 431Computer-Aided Mfg SystemsME 451Computer-Aided Mfg SystemsME 452Num Control of Mfg ProcessesME 455Micromanufacturing Process & AutomationME 461Computer Cntrl of Mech SystemsSE 420Digital Control SystemsSE 423MechatronicsOPTIMIZATIONVAE 504Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationIE 521Convex OptimizationSG 424Real-Time SystemsSG 425/ECE 428Distributed SystemsSC 425/ECE 428Software Engineering ISC 5426Software Engineering ISC 5427/CSE 426Software Engineering ISC 5426Software Engineering ISC 5427/CSE 428Communication NetworksSC 5426Software Engineering ISC 5427/CSE 429Software Engineering ISC 5426Software Engineering ISC 5427/CSE 428Formal Software Development MethodsSC 5426Formal Software Development MethodsSC 5427/CSE 427Formal Software		Robot Dynamics and Control	4		
TAM 412Intermediate DynamicsDESIGN & APPLICATIONSCS 465User Interface DesignCS 565Human-Computer InteractionSE 400Engineering LawBE 400Embedded SystemsS 431Embedded SystemsSensors and InstrumentationME 451Computer-Aided Mfg SystemsME 452Num Control of Mfg ProcessesME 455Micromanufacturing Process & AutomationME 461Computer Cntrl of Mech SystemsSE 420Digital Control SystemsSE 423MechatronicsOPTIMIZATIONAE 504Optimiz in Computer VisionEE 543Optimiz by Vector Space MethdsIE 519/CS 586Combinatorial OptimizationIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationIS 422SoftWARE SYSTEMSSICS 424Real-Time Systems3CS 422Software Engineering I3CS 422Computer Security ICS 424Real-Time Systems3CS 424Real-Time Systems3CS 422 <td <="" colspan="2" td=""><td>SE 424</td><td>State Space Design for Control</td><td>3</td></td>	<td>SE 424</td> <td>State Space Design for Control</td> <td>3</td>		SE 424	State Space Design for Control	3
DESIGN & APPLICATIONSCS 465User Interface DesignCS 465Human-Computer InteractionSE 400Engineering LawSE 400Embedded SystemsCS 431Embedded SystemsCS 431Embedded SystemsSE 400Sensors and InstrumentationME 451Computer-Aided Mfg SystemsME 452Num Control of Mfg ProcessesME 455Micromanufacturing Process & AutomationME 461Computer Cntrl of Mech SystemsOB 420Digital Control SystemsSE 423MechatronicsOPTIMIZATIONVAE 504Optimiz in Computer VisionECE 490Introduction to OptimizationECE 490Introduction of Large SystemsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMS3CS 424Real-Time SystemsSQ 422/CSE 428Distributed SystemsSOFTWARE SYSTEMS3CS 424Computer SystemsCS 424Software Engineering ISQ 5427/CSE 426Software Engineering ISQ 5461/ECE 422Computer Security ICS 476Program VerificationSQ 5407/FECE 478/Formal Software Development MethodsSQ 5408Formal Software Development Methods	SE 525	Control of Complex Systems	4		
CS 465User Interface DesignCS 565Human-Computer InteractionSE 400Engineering LawAHARDWARE SYSTEMSCS 431Embedded SystemsCS 431Embedded SystemsBE 451Computer-Aided Mfg SystemsME 451Computer-Aided Mfg SystemsME 452Num Control of Mfg ProcessesME 455Micromanufacturing Process & AutomationME 461Computer Cntrl of Mech SystemsSE 420Digital Control SystemsSE 423MechatronicsOPTIMIZATIONVAE 504Optimiz Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large SystemsSI 5424Real-Time SystemsSOFTWARE SYSTEMS3CS 424Real-Time SystemsSC 425/ECE 428Distributed SystemsSC 424/CSE 429Software Engineering ISC 427/CSE 426Software Engineering ISC 428/CSE 429Software Engineering ISC 428/CSE 429Software Engineering ISC 4261/ECE 478Computer Security ICS 476Program VerificationSC 477/ECE 478/Formal Software Development MethodsSC 400Startore Security I	AM 412	Intermediate Dynamics	4		
CS 565Human-Computer InteractionSE 400Engineering Law3HARDWARE SYSTEMS3CS 431Embedded Systems3ECE 437Sensors and Instrumentation3ME 451Computer-Aided Mfg Systems3ME 452Num Control of Mfg Processes3ME 455Micromanufacturing Process & Automation0SE 420Digital Control Systems0SE 423Mechatronics0OPTIMIZATIONVAE 504Optimal Aerospace Systems1ECE 490Introduction to Optimization1ECE 580Optimiz by Vector Space Methds3IE 519/CS 586Combinatorial Optimization3IE 519/CS 586Combinatorial Optimization3IE 519/CS 586Software Engineering I3CS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 426/CSE 429Software Engineering I3CS 427/CSE 426Software Engineering II3CS 426/LECE 428Communication Networks3CS 426/LECE 428Computer Security I3CS 476Program Verification3CS 477/LECE 478/Formal Software Development Methods3CS 477/LECE 478/Formal Software Development Methods3CS 428/CSE 429Software Development Methods3CS 477/LECE 478/Formal Software Development Methods3CS 477/LECE 478/Formal Software Development Methods3CS	ESIGN & APPLICAT	FIONS			
SE 400Engineering Law3HARDWARE SYSTEMS3CS 431Embedded Systems3ECE 437Sensors and Instrumentation3ME 451Computer-Aided Mfg Systems3ME 452Num Control of Mfg Processes3ME 455Micromanufacturing Process & Automation0SE 420Digital Control Systems0SE 420Digital Control Systems0SE 423Mechatronics0OPTIMIZATION4AE 504Optimal Aerospace Systems1CS 544Optimiz in Computer Vision1ECE 490Introduction to Optimization1ECE 580Optimiz by Vector Space Methds3IE 519/CS 586Combinatorial Optimization1IE 521Convex Optimization1SOFTWARE SYSTEMS3CS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 426/CSE 429Software Engineering I3CS 427/CSE 426Software Engineering I3CS 4261/ECE 422Computer Security I3CS 476Program Verification3CS 477/ECE 478/Formal Software Development Methods3CS 408Formal Software Development Methods3	CS 465	User Interface Design	4		
HARDWARE SYSTEMSHARDWARE SYSTEMSCS 431Embedded Systems3ECE 437Sensors and InstrumentationME 451Computer-Aided Mfg Systems3ME 452Num Control of Mfg Processes3ME 455Micromanufacturing Process & Automation0ME 455Micromanufacturing Process & Automation0ME 461Computer Cntrl of Mech Systems0SE 420Digital Control Systems0SE 423MechatronicsOPTIMIZATIONAE 504Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationIE 521Convex OptimizationIE 524Real-Time Systems3CS 424Real-Time Systems3CS 424Real-Time Systems3CS 424Real-Time Systems3CS 424Real-Time Systems3CS 424Real-Time Systems3 <t< td=""><td>CS 565</td><td>Human-Computer Interaction</td><td>4</td></t<>	CS 565	Human-Computer Interaction	4		
CS 431Embedded Systems3ECE 437Sensors and InstrumentationME 451Computer-Aided Mfg Systems3ME 452Num Control of Mfg Processes3ME 452Num Control of Mfg Processes & Automation0ME 455Micromanufacturing Process & Automation0SE 420Digital Control Systems0SE 423Mechatronics0OPTIMIZATIONAE 504Optimal Aerospace SystemsCS 544Optimiz in Computer Vision1ECE 490Introduction to Optimization1ECE 580Optimiz by Vector Space Methds3IE 519/CS 586Combinatorial Optimization3IE 519/CS 586Combinatorial Optimization3CS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 426/CSE 429Software Engineering I3CS 428/CSE 429Software Engineering I3CS 426/CSE 429Software Engineering II3CS 426/CEE 428Computer Security I3CS 476Program Verification3CS 477/ECE 478/Formal Software Development Methods3CS 477/ECE 478/Formal Software Development Methods3	SE 400	Engineering Law	3 or 4		
ECE 437Sensors and InstrumentationME 451Computer-Aided Mfg Systems3ME 452Num Control of Mfg Processes3ME 452Micromanufacturing Process & AutomationME 455ME 455Micromanufacturing Process & Automation0SE 420Digital Control Systems0SE 423Mechatronics0OPTIMIZATIONAE 504Optimal Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large SystemsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMS3CS 424Real-Time SystemsCS 425/ECE 428Distributed SystemsSC 428/CSE 429Software Engineering I3CS 428/CSE 429Software Engineering I3CS 461/ECE 422Computer Security ICS 476Program VerificationSC 408Formal Software Development MethodsSC 408Software Development Methods	ARDWARE SYSTEM	MS			
ME 451Computer-Aided Mfg Systems3ME 452Num Control of Mfg Processes3ME 452Nicromanufacturing Process & Automation1ME 455Micromanufacturing Process & Automation0SE 420Digital Control Systems0SE 423Mechatronics0OPTIMIZATIONAE 504Optimal Aerospace SystemsCS 544Optimiz in Computer Vision1ECE 490Introduction to Optimization1ECE 580Optimiz by Vector Space Methds3IE 519/CS 586Combinatorial Optimization1IE 521Convex Optimization1SOFTWARE SYSTEMS3CS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 428/CSE 429Software Engineering I3CS 428/CSE 429Software Engineering II3CS 4261/ECE 422Computer Security I3CS 4776Program Verification3CS 4777/ECE 478/Formal Software Development Methods3CS 4777/ECE 478/Formal Software Development Methods3CS 4777/ECE 478/Formal Software Development Methods3	CS 431	Embedded Systems	3 or 4		
ME 452Num Control of Mfg Processes3ME 452Num Control of Mfg Processes3ME 455Micromanufacturing Process & Automation0ME 461Computer Cntrl of Mech Systems0SE 420Digital Control Systems0SE 423Mechatronics0OPTIMIZATIONAE 504Optimal Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large SystemsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMS3CS 424Real-Time SystemsSG 425/ECE 428Distributed SystemsSC 4227/CSE 426Software Engineering ISC 428/CSE 429Software Engineering IISC 428/CSE 429Software Engineering IICS 476Program VerificationSC 477/ECE 478/Formal Software Development MethodsCS 408Software Development Methods	ECE 437	Sensors and Instrumentation	3		
ME 455Micromanufacturing Process & AutomationME 455Micromanufacturing Process & AutomationME 461Computer Cntrl of Mech Systems0SE 420Digital Control Systems0SE 423Mechatronics0OPTIMIZATIONAE 504Optimal Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large SystemsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMS3CS 424Real-Time SystemsCS 424Real-Time SystemsSC 425/ECE 428Distributed SystemsSC 428/CSE 429Software Engineering ISC 5428/CSE 429Software Engineering IISC 428/CSE 429Communication NetworksSC 461/ECE 422Computer Security ICS 476Program VerificationSC 477/ECE 478/Formal Software Development MethodsSC 408Software Development Methods	/IE 451	Computer-Aided Mfg Systems	3 or 4		
ME 461Computer Cntrl of Mech Systems0SE 420Digital Control Systems0SE 423Mechatronics0OPTIMIZATIONAE 504Optimal Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 490Optimiz by Vector Space MethdsIE 411Optimization of Large SystemsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMS3CS 424Real-Time SystemsCS 424Software Engineering IS 425/ECE 428Distributed SystemsS 428/CSE 429Software Engineering IIS 428/CSE 429Computer Security ICS 476Program VerificationS 477/ECE 478/Formal Software Development MethodsS 408Software Development Methods	/IE 452	Num Control of Mfg Processes	3 or 4		
SE 420Digital Control SystemsSE 423MechatronicsOPTIMIZATIONAE 504Optimal Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large SystemsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMS3CS 424Real-Time SystemsCS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 428/CSE 429Software Engineering I3CS 428/CSE 429Software Engineering II3CS 461/ECE 422Computer Security ICS 476Program Verification3CS 477/ECE 478/Formal Software Development Methods3CS 408Software Development Methods	/IE 455	Micromanufacturing Process & Automation	4		
SE 423MechatronicsOPTIMIZATIONAE 504Optimal Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large SystemsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMS3CS 424Real-Time SystemsCS 424Real-Time SystemsSC 425/ECE 428Distributed SystemsCS 428/CSE 429Software Engineering ICS 428/CSE 429Software Engineering IICS 476Program VerificationCS 477/ECE 478/Formal Software Development MethodsCS 408Software Development Methods	/IE 461	Computer Cntrl of Mech Systems	0 to 4		
OPTIMIZATIONAE 504Optimal Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large SystemsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMS3CS 424Real-Time SystemsCS 425/ECE 428Distributed SystemsSC 425/ECE 428Software Engineering ICS 428/CSE 429Software Engineering IISC 5461/ECE 422Computer Security ICS 476Program VerificationSC 5477/CSE 478/Formal Software Development Methods CS 476	SE 420	Digital Control Systems	4		
AE 504Optimal Aerospace SystemsCS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large Systems1E 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMSCS 424Real-Time SystemsCS 425/ECE 428Distributed Systems3CS 427/CSE 426Software Engineering I3CS 428/CSE 429Software Engineering II3CS 461/ECE 422Computer Security I3CS 476Program Verification3CS 477/ECE 478/ Cormal Software Development Methods CSE 408	SE 423	Mechatronics	3		
CS 544Optimiz in Computer VisionECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large Systems3IE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMSCS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 427/CSE 426Software Engineering I3CS 428/CSE 429Software Engineering II3CS 461/ECE 422Computer Security I3CS 476Program Verification3CS 477/ECE 478/Formal Software Development Methods CSE 4083	PTIMIZATION				
ECE 490Introduction to OptimizationECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large Systems3IE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMSCS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 425/CSE 426Software Engineering I3CS 428/CSE 429Software Engineering II3CS 461/ECE 438Communication Networks3CS 476Program Verification3CS 477/CSE 478/Formal Software Development Methods3CS 476Program Software Development Methods3	AE 504	Optimal Aerospace Systems	4		
ECE 580Optimiz by Vector Space MethdsECE 580Optimiz by Vector Space MethdsIE 411Optimization of Large SystemsIE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMSCS 424Real-Time SystemsCS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 427/CSE 426Software Engineering I3CS 428/CSE 429Software Engineering II3CS/ECE 438Communication Networks3CS 461/ECE 422Computer Security ICCS 476Program Verification3CS 477/ECE 478/CS 408Formal Software Development Methods3CS 408	CS 544	Optimiz in Computer Vision	4		
IE 411Optimization of Large Systems3IE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMSCS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 427/CSE 426Software Engineering I3CS 428/CSE 429Software Engineering II3CS 426/LECE 438Communication Networks3CS 461/ECE 422Computer Security I3CS 477/ECE 478/Formal Software Development Methods3CS 408Software Development Methods3	CE 490	Introduction to Optimization	4		
IE 519/CS 586Combinatorial OptimizationIE 521Convex OptimizationSOFTWARE SYSTEMSCS 424Real-Time SystemsCS 425/ECE 428Distributed SystemsCS 427/CSE 426Software Engineering ICS 428/CSE 429Software Engineering IICS 428/CSE 429Communication NetworksCS 461/ECE 422Computer Security ICS 476Program VerificationCS 477/ECE 478/Formal Software Development MethodsCS 408Software Development Methods	ECE 580	Optimiz by Vector Space Methds	4		
IE 521Convex OptimizationSOFTWARE SYSTEMSCS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 425/ECE 426Software Engineering I3CS 428/CSE 429Software Engineering II3CS/ECE 438Communication Networks3CS 461/ECE 422Computer Security I3CS 477Program Verification3CS 477/ECE 478/Formal Software Development Methods3	E 411	Optimization of Large Systems	3 or 4		
SOFTWARE SYSTEMSCS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 425/ECE 428Software Engineering I3CS 428/CSE 429Software Engineering II3CS/ECE 438Communication Networks3CS 461/ECE 422Computer Security I3CS 477Program Verification3CS 477/ECE 478/Formal Software Development Methods3CS 408Software Development Methods3	E 519/CS 586	Combinatorial Optimization	4		
CS 424Real-Time Systems3CS 425/ECE 428Distributed Systems3CS 425/ECE 428Distributed Systems3CS 427/CSE 426Software Engineering I3CS 428/CSE 429Software Engineering II3CS/ECE 438Communication Networks3CS 461/ECE 422Computer Security I3CS 4776Program Verification3CS 477/ECE 478/Formal Software Development Methods3CS 408Software Development Methods3	E 521	Convex Optimization	4		
CS 425/ECE 428Distributed Systems3CS 425/ECE 428Software Engineering I3CS 427/CSE 426Software Engineering I3CS 428/CSE 429Software Engineering II3CS 428/CSE 429Communication Networks3CS 461/ECE 438Computer Security I3CS 476Program Verification3CS 477/ECE 478/ CSE 408Formal Software Development Methods3	SOFTWARE SYSTEM	IS			
CS 427/CSE 426Software Engineering I3CS 428/CSE 429Software Engineering II3CS/ECE 438Communication Networks3CS 461/ECE 422Computer Security ICS 476Program Verification3CS 477/ECE 478/Formal Software Development Methods3CSE 408Software Development Methods3	CS 424	Real-Time Systems	3 or 4		
CS 428/CSE 429Software Engineering II3CS/ECE 438Communication Networks3CS 461/ECE 422Computer Security ICS 476Program Verification3CS 477/ECE 478/Formal Software Development Methods3CSE 408Software Development Methods3	CS 425/ECE 428	Distributed Systems	3 or 4		
CS/ECE 438Communication Networks3CS 461/ECE 422Computer Security ICS 476Program Verification3CS 477/ECE 478/ CSE 408Formal Software Development Methods3	CS 427/CSE 426	Software Engineering I	3 or 4		
CS 461/ECE 422Computer Security ICS 476Program Verification3CS 477/ECE 478/ CSE 408Formal Software Development Methods3	CS 428/CSE 429	Software Engineering II	3 or 4		
CS 476Program Verification3CS 477/ECE 478/Formal Software Development Methods3CSE 408Software Development Methods3	CS/ECE 438	Communication Networks	3 or 4		
CS 477/ECE 478/ Formal Software Development Methods 3 CSE 408	CS 461/ECE 422	Computer Security I	4		
CSE 408	CS 476	Program Verification	3 or 4		
CS 484 Parallel Programming 3		Formal Software Development Methods	3 or 4		
	CS 484	Parallel Programming	3 or 4		
ECE 408 Applied Parallel Programming	ECE 408	Applied Parallel Programming	4		

for the degree of Master of Engineering in Engineering, Autonomy and Robotics Concentration

The learning objectives of the proposed Concentration in Autonomy and Robotics include professionally-oriented competence in the application of software systems, electronics, tools for algorithm design and machine learning, and physics-based dynamics, control and sensor systems to the integration of autonomy in robotic systems.

for the degree of Master of Engineering in Engineering, Autonomy and Robotics Concentration

Admission

Students with bachelor's or master's degrees in engineering or related fields will be considered for admission if they have a grade point average of at least 3.00 (A = 4.00) for the last two years of undergraduate study. Admissions are considered for the fall term only. Full details of admission requirements are on the Autonomy and Robotics (https://autonomy.illinois.edu/meng/) concentration website.

All applicants whose native language is not English are required to submit TOEFL (http://www.toefl.org/) or International English Language Testing System (IELTS) (http://www.ielts.org/) scores as evidence of English proficiency. Minimum admission requirements (https:// grad.illinois.edu/admissions/instructions/04c/) are set by the Graduate College.

Financial Aid

Students in concentrations under the MEng in Engineering major are not eligible for Board of Trustees (BOT) tuition-waiver generating assistantships at the University of Illinois.

for the degree of Master of Engineering in Engineering, Autonomy and Robotics Concentration

Autonomy MEng Program

Program Director: Geir E. Dullerud Autonomy Center website (https://autonomy.illinois.edu/)

Admissions Contact: Laura Reiter (Ireite2@illinois.edu)

403-A2 Engineering Hall, 1308 W Green St, Urbana, Illinois 61801 (217) 300-6574

Advising Contact: Pat Grenda (jpgrenda@illinois.edu)

1308 W. Main Street, Urbana, Illinois 61801 (217) 265-6265

Grainger College of Engineering

Grainger College of Engineering website (https://grainger.illinois.edu/)

Admissions

Overview of Autonomy and Robotics MEng Admissions & Requirements Graduate College Admissions & Requirements (https://grad.illinois.edu/ admissions/apply/)