

NIA Graduate Program: Spring 2022

FULL COURSE LIST

Last Updated Jan. 5, 2022

HAMPTON UNIVERSITY

TBD

* Courses taught on HU campus

+ Course instructor on-site at NIA

GEORGIA TECH

Aerospace Engineering (MS and PhD)

AE 6012 Q	Turbulent Flows	Menon	Asynchronous
AE 6015 Q	Advanced Aerodynamics	Sankar	Asynchronous
AE 6042 Q	Computational Fluid Dynamics	Oefelein	Asynchronous
AE 6115 Q	Fundamentals of Aero Structural Analysis	Di Leo	Asynchronous
AE 6210 Q	Advanced Dynamics I	Patil	Asynchronous
AE 6310 Q	Optimization for the Design of Engineered Systems	Kennedy	Asynchronous
AE 6344 Q	Aircraft Design II	Mavris	Asynchronous
AE 6344 A01	Aircraft Design II	Mavris	Asynchronous
AE 6361 Q	Propulsion System Design I	Tai	Asynchronous
AE 6394 Q	System of Systems Engineering Applications	Mavris	Asynchronous
AE 6394 Q 01	System of Systems Engineering Applications	Mavris	Asynchronous
AE 6412 Q	Turbulent Combustion	Lieuwen	Asynchronous
AE 6505 Q	Kalman Filtering	Gunter	Asynchronous
AE 6520 Q	Advanced Flight Dynamics	Prasad	Asynchronous
AE 6580 Q	Nonlinear Control	Chen	Asynchronous
AE 6701 Q	Wind Engineering	Sankar	Asynchronous
AE 61761 Q	Acoustics II	Sabra	Asynchronous
AE 6766 Q	Combustion	Sun	Asynchronous
AE 8803 QU	Special Topics: Spacecraft Attitude Est & Ctrl	Lightsey	Asynchronous

NORTH CAROLINA STATE UNIVERSITY

Mechanical and Aerospace Engineering (MS and PhD)

MAE 501	Advanced Engineering Thermodynamics	Gould	Asynchronous streaming media
MAE 515	Advanced Automotive Vehicle Dynamics	Tu	
MAE 526	Fundamentals of Product Design	Ferguson	
MAE 535	Design of Electromechanical Systems	Buckner	
MAE 537	Mechanics of Composite Structures	Grace	
MAE 538	Smart Structures and Materials	Bryant	
MAE 543	Fracture Mechanics	Ryu	
MAE 553	Compressible Fluid Flow	Narayananaswamy	
MAE 555	Applications of Acoustic and Elastic Wave Propagation	Muller	
MAE 577	Multiscale Two-Phase Flow Simulations	Bolotov	
MAE 586	Project Work in Mechanical Engineering	Peters	
MAE 589 603/653	Advanced Dynamics II	Mazzoleni	
MAE 589 615	Vigorous Force Analysis	Tu	
MAE 589 616	Aerodynamics of V/STOL Vehicles	Gopalathnam	
MAE 589 617	Automotive Power Systems	Fang	
MAE 704	Fluid Dynamics of Combustion II	Echekki	
MAE 730	Modern Plasticity	Huang	
MAE 734	Finite Element Analysis II	Zikry	

Electrical and Computer Engineering (courses only)

ECE 515	Digital Communications	Duel-Hallen	Asynchronous streaming media
ECE 516	Systems Control Engineering	Chow	
ECE 517	Object-Oriented Design and Development	Gehring	
ECE 524	Radio System Design	Besnoff	
ECE 535	Design of Electromechanical Systems	Buckner	
ECE 542	Neural Networks	Lobaton	
ECE 544	Design of Electronic Packaging and Interconnects	Evans	
ECE 546	VLSI Design Systems	Davis	
ECE 551	Smart Electric Power Distribution Systems	Lubkeman	
ECE 552	Renewable Electric Energy Systems	Baran	
ECE 561	Embedded System Design	Dean	
ECE 563	Microprocessor Architecture	Becchi	
ECE 570	Computer Networks	Harfoush	
ECE 574	Computer and Network Security	Enck	
ECE 575	Introduction to Wireless Networking	Wang	
ECE 581	Electric Power System Protection	Baran	
ECE 583	Electric Power Engineering Practicum I	White	
ECE 592 614	Internet of Things: Application and Implementation	Shahzad	
ECE 600	ECE Graduate Orientation	Dai	
ECE 712	Integrated Circuit Design for Wireless Communications	Floyd	
ECE 726	Advanced Feedback Control	Rindos	
ECE 745	Application Specific Integrated Circuit Verification	Oden	
ECE 773	Advanced Topics in Internet Protocols	Harfoush	
ECE 785 601	Advanced Embedded Systems	Dean	
ECE 786	Topics in Advanced Computer Architecture: Data Parallel Processors	Zhou	
ECE 792 614	Internet of Things: Application and Implementation	Shahzad	
ECE 792	Design of Millimeter-Wave Integrated Circuits and Systems	Floyd	

Industrial & Systems Engineering (courses only)

ISE 510	Applied Engineering Technology	King	Asynchronous streaming media
ISE 537	Statistical Model for System Analytics in Industrial Engineering	Fang	
ISE 540	Human Factors in Systems Design	Chen	
ISE 562	Simulation Modeling	Shashaani	
ISE 716	Automated Systems Engineering	Lee	
ISE 718	Micro/Nano-Scale Fabrication and Manufacturing	Dong	
ISE 725 601	Smart Manufacturing	Starly	
ISE 744	Human Information Processing	Nam	

Materials Sciences and Engineering (courses only)

MSE 500	Modern Concepts in Materials Science	Kwansa	Asynchronous streaming media
MSE 555	Polymer Technology and Engineering	Balk	
MSE 556	Composite Materials	Kasichainula	
MSE 565	Introduction to Nanomaterials	Tracy	
MSE 580	Materials Forensics and Degradation	Koch	
MSE 702	Defects in Solids	Narayan	
MSE 723	Materials Informatics	Yingling	
MSE 757	Radiation Effects on Materials	Kaoumi	
MSE 791-601	Biomaterials	Yingling	
MSE 791-604	High Temperature Deformation of Materials	Murty	

NORTH CAROLINA A&T UNIVERSITY

Computer Engineering

TBD

Electrical Engineering

TBD

*Synchronous (live) course received or delivered from NIA.

OLD DOMINION UNIVERSITY

Mechanical and Aerospace Engineering (MS and PhD)

MAE 503	Flight Mechanics	Newman	TR 1:30pm-2:45pm
MAE 602	Fluid Dynamics and Aerodynamics	Britcher	TR 3:00pm - 4:15pm

MAE 603	Advanced Mechanics of Solids	Elmustafa	MW 3:00pm-4:15pm
MAE 608	Applied Mathematics for Engineers	Wiggers	MW 1:30pm-2:45pm
MAE 620	Heat Transfer 1	Qian	T 10:00am-12:40pm
MAE 716/816	CFD I	Baysal	F 10:00am-12:40pm
MAE 720/820	Heat Transfer II	Qian	R 4:20pm -7:00pm
MAE 741/841	Optimal Control Theory	Newman	MW 3:00pm-4:15pm
MAE 789/880	Engineering Optimization	Hou	MW 4:20pm-5:35pm
MAE 789/889	Engineering Design with Uncertainties	Hou	TR 11:00am-12:15pm
MAE 795/895	Response Surface Methodology	Landman	TBD Delivery Method
MAE 795*	Spectroscopy of Atomspheres	Bemath	MW 9:30am-10:45pm
	*also CHEM 795 - this course will NOT have an Asynchronous		
<i>All courses will be Synchronous (live) courses with an Asynchronous option received on student desktop or laptop unless other wise noted</i>			
UNIVERSITY OF MARYLAND			
Aerospace Engineering (MS and PhD) These courses are currently on UMD's schedule to be offered to NIA students as distance courses on Zoom due to COVID-19 situation			
ENAE 633	Helicopter Dynamics	Datta	TR 9:30am-10:45am
ENAE 634	Helicopter Design	Nagaraj & Chopra	F 1:00pm-2:50pm & F 3:00-4:50pm (Lab)
ENAE 685	Computational Fluid Dynamics II	Baeder	TR 11:00am-12:15pm
<i>Above are synchronous (live) course received on student's desktop or laptop</i>			
UNIVERSITY OF VIRGINIA			
Chemical Engineering			
CHE 5561	Special Topics: Fundamentals of Process Safety for ChEs	Unnerstall	Asynchronous
CHE 6442	Applied Surface Chemistry	Green	Asynchronous
CHE 6618	Chemical Reaction Engineering	Koerliq	Asynchronous
CHE 6630	Mass Transfer	Geise	Asynchronous
Civil Engineering			
CE 5035	Construction Estimating and Bidding	O'Malley	Asynchronous
CE 5300	Adv Design of Metal Structures	Gomez	Asynchronous
CE 5310	Prestressed Concrete Design	Gomez	Asynchronous
CE 5410	Intro to Transportation Planning	Miller	Asynchronous
CE 6015	Project Management	Pennetti	Asynchronous
CE 6230	Hydrology	Goodall	Asynchronous
CE 6260	Environmental Microbiology and Biological Waste Treatment	Peterson	Asynchronous
CE 6370	Dynamics of Structures	Ozbulut	Asynchronous
CE 6450	Transportation Safety Engineering	Fontaine	Asynchronous
Electrical and Computer Engineering			
ECE 5150	Microelectronic Integrated Circuit Fabrication	Swami	Asynchronous
ECE 6260	Microwave Engineering I	Weikle	Asynchronous
ECE 5502	Special Topics: Hardware-Software Security	Johnson	Asynchronous
ECE 6410	Fundamentals of Nanoelectronics	Ghosh	Asynchronous
ECE 6265	Microwave Engineering	Weikle	Asynchronous
ECE 6501	Special Topics: Convex Optimization for Engineering & Data Science	Li	Asynchronous
ECE 6332	VLSI Design	Stan	Asynchronous
ECE 6435	Computer Architecture and Design	Delong	Asynchronous
ECE 6501	Special Topics: Optical Quantum Electronics	Yi	Asynchronous
ECE 6501	Special Topics: Optical Communication Devices	Beling	Asynchronous
ECE 6501	Special Topics: Matrix Analysis in Engineering Science	Tao	Asynchronous
ECE 6502	Special Topics: Hardware for Modern Day Computing	Shukla	Asynchronous
ECE 6502	Special Topics: Advanced Digital Design Laboratory	Stan	Asynchronous
ECE 6502	Special Topics: Electrical, Magnetic, & Optical Properties of Materials	Reinke	Asynchronous
ECE 6642	Optoelectronic Devices	Campbell	Asynchronous
ECE 6782	Digital Image Processing	Acton	Asynchronous
ECE 6784	Wireless Communications	Shen	Asynchronous
ECE 6850	Intro to Control Systems	Line	Asynchronous
Materials Sciences and Engineering			
MSE 6020	Defects and Microstructure in Materials	Zhigilei	Asynchronous
MSE 6080	Chemical and Electrochemical Properties	Zangari	Asynchronous
MSE 6167	Electrical, Magnetic, & Optical Properties of Materials	Reinke	Asynchronous
MSE 6240	Kinetics of Transport and Transformations in Materials	Opila	Asynchronous
MSE 6320	Deformation and Fracture of Structural Materials	Bums	Asynchronous
MSE 6592	Special Topics: X-ray Scattering Techniques in Materials Science	Sun	Asynchronous
Mechanical and Aerospace Engineering			
MAE 6250	Multibody Mechanical Systems	Russell	Asynchronous
MAE 6430	Statistics for Engineers & Scientists	Guadagni	Asynchronous
MAE 6592	Special Topics: Turbulence & Multiphase Flow	Loth	Asynchronous
MAE 6710	Finite Element Analysis	Panzer	Asynchronous
Systems Engineering			
SYS 6007	Human Factors	Staff	Asynchronous
SYS 6018	Data Mining	Porter	Asynchronous
SYS 6041	Ethics in Engineering Research & Practice (EERP)	Louis	Asynchronous
SYS 6050	Risk Analysis	Lambert	Asynchronous
SYS 6582	Special Topics: Human Error in Complex Systems	Riggs	Asynchronous
SYS 6582	Special Topics: Production & Inventory Control	Riggs	Asynchronous
VIRGINIA TECH			
All Courses Below are Online with one having Synchronous Meetings			
Aerospace and Ocean Engineering (MS and PhD)			
AOE 5114 (CRN 10489)	High Speed Aerodynamics	Adams	Asynchronous
AOE 5144 (CRN 10493)	Boundary-Layer Theory	Schetz	Asynchronous
AOE 5234 (CRN 10498)	Orbital Mechanics	Black	Asynchronous
AOE 5314 (CRN 10500)	Naval & Marine Engr Sys Design	Brown	Asynchronous
AOE 5316 (CRN 10503)	Naval Ship Design	Brown	Asynchronous
AOE 5334 (CRN 10503)	Advanced Ship Dynamics	Brizzolara	Asynchronous
AOE 5404 (CRN 20430)	Numerical Methods of AOE	Wang	Asynchronous
AOE 5604 (CRN 21301)	Modeling Composites Damage	Seidel	Asynchronous
AOE 5664 (CRN 10508)	Upper Atmosphere & Ionosphere	England	Asynchronous
AOE 5764 (CRN 10511)	Applied Linear Control	Southward	Asynchronous
AOE 5984 (CRN 21922)	SS: Aero Mater & Mod Tech	Fu	Asynchronous
AOE 6064 (CRN 20435)	Reliability-Based Design Optim	Canfield	Asynchronous
AOE 6114 (CRN 20437)	Transonic Aeodynamics	Massa	Asynchronous
AOE 6174 (CRN 10605)	Computational Plasma Dynamics	Srinivasan	Asynchronous
AOE 6174 (CRN 10606)	Computational Plasma Dynamics	Srinivasan	Asynchronous w/Synchronous Meetings
AOE 6204 (CRN 10608)	Adv. Vehicle Dynamics & Control	Sultan	Asynchronous
AOE 6254 (CRN 10611)	Turbulence Modeling & Simulation	Roy	Asynchronous
AOE 6434 (CRN 21478)	Comp Fluid Dyn Heat Trans	Tafti	Asynchronous
AOE 6444 (CRN 20439)	Verificat Validat Sci Comput	Roy	Asynchronous
Mechanical and Aerospace Engineering (MS and PhD)			
ME 5734 (CRN 20496)	Advanced Engineering Acoustics	Fuller	TR 3:30pm-4:45pm @ NIA Room TBD