

**NIA Graduate Program: Fall 2019
FULL COURSE LIST**

HAMPTON UNIVERSITY			
TBD			
* Courses taught on HU campus			
+ Course instructor on-site at NIA			
GEORGIA TECH			
Aerospace Engineering (MS and PhD)			
TBD			
*Synchronous (live) course received or delivered from NIA.			
+ Course instructor on-site at NIA			
NORTH CAROLINA STATE UNIVERSITY			
Mechanical and Aerospace Engineering (MS and PhD)			
MAE 504	Fluid Dynamics of Combustion I		
MAE 505	Heat Transfer Theory and Applications		
MAE 511	Advanced Dynamics I		
MAE 513	Principles of Structural Vibrations		
MAE 531	Engineering Design Optimization		
MAE 533	Finite Element Analysis I		
MAE 536	Micro/Nano Electromechanical Systems		
MAE 551	Airfoil Theory		
MAE 586	Project Work in Mechanical Engineering		
MAE 589-603	Advanced Dynamics II		
MAE 589-604	Laser Materials Processing		Asynchronous Streaming Media
Electrical and Computer Engineering (courses only)			
ECE 511	Analog Electronics		
ECE 513	Digital Signal Processing		
ECE 514	Random Processes		
ECE 518	Wearable Biosensors		
ECE 530	Physical Electronics		
ECE 534	Fundamentals of Power Electronics and Utility Applications		
ECE 542	Neural Networks		
ECE 549	RF Design for Wireless		
ECE 550	Power System Operation and Control		
ECE 556	Agent-Based Mechatronics Systems		
ECE 568	Conventional and Emerging Nanomanufacturing Techniques and		
ECE 570	Computer Networks		
ECE 573	Internet Protocols		
ECE 574	Computer Network Security		
ECE 584	Electric Power Engineering Practicum II		
ECE 585	The Business of the Electric Utility Industry		
ECE 587	Power System Transients Analysis		
ECE 592-602	Topics in Data Science		
ECE 592-603	LTE and 5G Communications		
ECE 600	ECE Graduate Orientation		
ECE 720	Electronic System Level and Physical Design		
ECE 726	Advanced Feedback Control		
ECE 732	Dynamics and Control of Electric Machines		
ECE 748	Advanced Verification with UVM		
Industrial & Systems Engineering (courses only)			
ISE 501	Introduction to Operations Research		
ISE 505	Linear Programming		
ISE 515	Manufacturing Process Engineering		
ISE 552	Design and Control of Production and Service Systems		
ISE 589-603	Python Programming for Industrial Engineers		Asynchronous streaming media
ISE 589-604	Digital Manufacturing		
ISE 716	Automated Systems Engineering		
ISE 754	Logistics Engineering		
ISE 760	Applied Stochastic Models in Industrial Engineering		
Materials Sciences and Engineering (courses only)			
MSE 500	Modern Concepts in Materials Science		
MSE 509	Nuclear Materials		
MSE 540	Processing of Metallic Materials		
MSE 545	Ceramic Processing		
MSE 708	Thermodynamics of Materials		Asynchronous streaming media
MSE 710	Elements of Crystallography and Diffraction		
MSE 760	Materials Science in Processing of Semiconductor Devices		
MSE 791	Nonferrous Alloys		
These courses are offered asynchronously and utilize WEB accessible streaming or CDROMS delivered to the student. For updates on asynchronous courses go to: http://EngineeringOnline.ncsu.edu .			
*Synchronous (live) course received or delivered from NIA.			
X Course instructor on-site at NIA			
NORTH CAROLINA A&T UNIVERSITY			
Computer Engineering			
TBD			
Electrical Engineering			

TBD			
*Synchronous (live) course received or delivered from NIA.			
OLD DOMINION UNIVERSITY			
Aerospace Engineering (MS and PhD)			
NIA received or web delivery			
MAE 601	Engineering Mathematics	Kotinis	T 7:10pm-9:50pm
MAE 604	Analytical Dynamics	Newman	MW 11:00am-12:15pm
MAE 640	Modern Control Theory	Newman	MW 1:00pm-2:15pm
MAE 672	Design of Experiments	Landman	TR 4:20pm-5:35pm
MAE 716/816	CFD I	Baysal	F 10:00am-12:40pm
MAE 740/840	Autonomous and Robotic Systems Analysis and Control	Kajpa	R 7:10-9:50pm
MAE 750/850	Nanoscale Mechanical and Structural Properties of Materials	Elmustafa	MW 11:00am-12:15pm
MAE 783/883	Robots and Manufacturing Automation	Huang	TR 1:00pm-2:15pm
MAE 795/895	Satellite Remote Sensing	Bernath	MW 9:30-10:45pm
UNIVERSITY OF MARYLAND			
Aerospace Engineering (MS and PhD) These courses are currently on UMD's schedule to be offered as distance courses			
ENAE 631	Helicopter Aerodynamics I	Govindarajan	MW 9:30am-10:45am
ENAE 651	Smart Structures	Chopra	TR 9:30am-10:45am
ENAE 684	Computational Fluid Dynamics I	Baeder	TR 11:00am-12:15pm
ENAE 788K	Selected Topics: Estimation and Control of Stochastic Systems	Sanner	MW 2:00pm-3:15pm
Aerospace Engineering (MS and PhD) These courses are currently NOT SCHEDULED but UMD will consider offering these as distance courses if there is interest.			
ENAE 603	Near Earth Object Exploration	Barbee	TR 5:00-6:15pm
ENAE 636	Helicopter Dynamics II	Datta	MW 9:30am-10:45am
ENAE 641	Linear System Dynamics	Sanner	TR 12:30pm-1:45pm
ENAE 655	Structural Dynamics	Bauchau	TR 11:00am-12:15pm
ENAE 788D	Advanced Space Systems Design	Akin	TBD
ENAE 788P	Analysis of Structural Elements	Bauchau	MW 2:00pm-3:15pm
* Synchronous (live) course received or delivered from NIA XCourse instructor on-site at NIA			
UNIVERSITY OF VIRGINIA			
Civil Engineering			
CE 5000 (Section 600, Class Number 18801)	Mgmt Large-Scale Construction	Heydarian	TR 2:00pm-3:15pm*
CE 5020 (Section 600, Class Number 16637)	Introduction to GIS	Miller	TR 9:30am-10:45am*
CE 5320 (Section 600, Class Number 18648)	Reinforced Concrete Design	Gomez	MWF 11:00am-11:50am*
CE 5340 (Section 600, Class Number 18802)	Topics in Structural Engineering	Gomez	MW 8:30am-9:45pm*
CE 5400 (Section 600, Class Number 18803)	Traffic Operations	Park	TR 11:00am-12:15pm*
CE 6030 (Section 600, Class Number 18804)	Green Engineering & Sustainability	Clarens	MW 2:00pm-3:15pm*
CE 6470 (Section 600, Class Number 16688)	Transport Economics & Finance	Chen	TR 12:30pm-1:45pm*
CE 6500 (Section 600, Class Number 18800)	Remote Sensing for Environmental Engineers	Lakshmi	TR 2:00pm-3:15pm*
Chemical Engineering (courses only)			
CHE 5561 (Section 600, Class Number 19305)	Crystallization Proc in CHE	Giri	MWF 10:00am-10:50am*
CHE 6625 (Section 600, Class Number 18668)	Transport Processes	Lazzara	MW 9:30am-10:45am*
Electrical and Computer Engineering (MS and Ph.D.)			
ECE 6163 (Section 600, Class Number 16759)	Solid State Devices	Ghosh	MW 12:30pm-1:45pm*
ECE 6501 (Section 600, Class Number 18691)	Photonics I	Gupta	TR 3:30pm-4:45pm*
ECE 6713 (Section 600, Class Number 16689)	Communication Systems Engineering	Wilson	TR 3:30pm-4:45pm*
ECE 6851 (Section 600, Class Number 16434)	Linear Automatic Control Systems	Tao	TR 11:00am-12:15pm*
ECE 6852 (Section 600, Class Number 16684)	Linear State Space Control Systems	Tao	MW 2:00pm-3:15pm*
Materials Sciences and Engineering (MS and Ph.D.)			
MSE 6120 (Section 600, Class Number 18745)	Characterization of Materials	FitzGerald	TR 2:00pm-3:15pm*
MSE 6270 (Section 600, Class Number 18750)	Atomistic Simulations	Zhigilei	MW 3:30pm-4:45pm*
MSE 6592 (Section 600, Class Number 18751)	Dielectrics, Electronic Oxides	Ihlefeld	TR 12:30pm-1:45pm*
MSE 6592 (Section 601, Class Number 18753)	Temperature Oxidation	Opila	MW 9:30am-10:45am*
Mechanical and Aerospace Engineering (MS and PhD)			
MAE 6410 (Section 600, Class Number 16550)	Engineering Mathematics I	Wood	TR 12:30pm-1:45pm*
MAE 6592 (Section TBA, Class Number 16886)	Turbulence & Multiphase Flow	Loth	TBA
MAE 6620 (Section 600, Class Number 16473)	Linear State Space Systems	Tao	MW 2:00pm-3:15pm*
Engineering Physics (MS and Ph.D.)			
Systems Engineering (MS and Ph.D.)			
SYS 6581 (Section 600, Class Number 19561)	Principles of Modeling for Cyber Physical Systems	Behl	TR 2:00pm-3:15pm*
*Synchronous (live) course received on student desktop or laptop			
VIRGINIA TECH			
Aerospace and Ocean Engineering (MS and P.D)			
AOE 5074	Adv Ship Structural Analysis	CM Gilbert	On-line course
AOE 5104	Adv Aero Hydrody	WJ	On-line course
AOE 5124	Aero and Hydroacoustics	WJ	TR 8:00am-10:00am
AOE 5135	Vehicle Propulsion	KT Lowe	On-line course
AOE 5174	Intro to Plasma Science	C Adams	On-line course
AOE 5204	Vehicle Dynamics and Control	ML Psiaki	On-line course
AOE 5304	Advanced Naval Architecture	S Brizzolara	On-line course
AOE 5314	Naval & Marine Engr Sys Design	AJ Brown	On-line course
AOE 5315	Naval Ship Design	AJ Brown	On-line course
AOE 5324	Principles of Naval Eng w/App	AJ Brown	On-line course
AOE 5434G	Adv Intro Comp Fluid Dynamics	SS Choi	On-line course
AOE 5744	Linear Systems Theory	AM Boker	TR 11:00am-12:15pm
AOE 5754	Applied Linear Systems	SC	On-line course
AOE 5774	Nonlinear Systems Theory	C Sultan	On-line course
Electrical Computer Engineering (MS and PhD)			
ECE 5105	Electromagnetic Waves	M Manteghi	On-line course
ECE 5174	Introduction to Plasma Science	C Adams	On-line course
ECE 5194	Remote Sensing Prin & Tech	ES Lind	MWF 11:00am-11:50am

ECE 5204	Power Semiconductor Devices	Y Zhang	MWF 1:25pm-2:15pm
ECE 5234	EMI Noise Reduction	D Dong	MW 4:00pm-5:15pm
ECE 5254	Power Conv Mod & Cont	Q Li	TR 3:30pm-4:45pm
ECE 5314	Pwr Sys Oper and Ctrl	V Kekatos	TR 11:00am-12:15pm
ECE 5424G	Advanced Machine Learning	YJ Wang	TR 12:30pm-1:45pm
ECE 5480	Cybersecurity and the IoT	KE Giles	On-line course
ECE 5484	Fundamentals Computer Systems	SF Midkiff	On-line course
ECE 5485	Networks and Protocols	PM Athanas	On-line course
ECE 5504	Computer Architecture	JM Paul	On-line course
ECE 5510	Multiprocessor Programming	B Ravindran	TR 12:30pm-1:45pm
ECE 5554	Computer Vision	CF Jones	TR 6:30pm-7:45pm
ECE 5560	Fundamentals of Info Security	J Park	T 3:30pm-6:15pm
ECE 5565	Network Arch and Protocols	H Wang	TR 11:00am-12:15pm
ECE 5585	IT Security and Trust	RC Marchany	On-line course
ECE 5605	Stochastic Signals and Systems	HS Dhillon	TR 12:30pm-1:45pm
ECE 5635 (CRN 83226)	Radar Systems Design	JM	MW 5:30pm-6:45pm
ECE 5635 (CRN 83227)	Radar Systems Design	JM	On-line course
ECE 5754	Linear Systems Theory	SC	On-line course
ECE 5774	Nonlinear Systems Theory	C Sultan	On-line course

Materials Science and Engineering (MS and Ph.)

MSE 5114	Materials Characterization	MJ Kelley	MW 12:30pm-1:45pm
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Mechanical Engineering (MS and PhD)

ME 5104	Thermodynamics: Found/Applications	MR von	On-line course
ME 5135	Vehicle Propulsion	KT Lowe	On-line course
ME 5404	Fluid Dynamics	JA Palmore	On-line course
ME 5434	Adv Intro Comp Fluid Dynamics	SS Choi	On-line course
ME 5544	Linear Systems Theory	AM Boker	TR 11:00am-12:15pm
ME 5554	Applied Linear Systems	SC	On-line course
ME 5574	Nonlinear Systems Theory	C Sultan	On-line course
ME 5634	Fin Elem in Mach Des	RL West	On-line course

Courses are available for graduate credit
NIA
X Course instructor on-site at NIA.
Graduate Center
Headquarters.

*Synchronous (live) course received or delivered from
XX ONLINE course. Primarily received at desktop.

**Synchronous (live) course delivered at the Peninsula
All VT AOE, ESM, MSE and ME courses are delivered at NIA