NIA Graduate Program: Spring 2020			
FULL COURSE LIST (updated 11-21-2019 - check back for updates)			
HAMPTON UNIVERSITY			
TBD			
* Courses taught on HU campus			
+ Course instructor on-site at NIA			
GEORGIA TECH			
Aerospace Engineering (MS and PhD)			
AE 6015 Q	Advanced Aerodynamics	Sankar	**Asynchronous
AE 6042Q	Computational Fluid Dynamics	Oefelein	*MWF 9:05am-10:15am
AE 6070 Q	Rotary Wing Aerodynamics	Sankar	**Asynchronous
AE 6115 Q	Fundamentals of Aero Structural Analysis	Di Leo	*MWF 10:10am-11:00am
AE 6310 Q	Optimization for the Design of Engineered Systems	Kennedy	*TR 1:30pm - 2:45pm
AE 6344 Q	Aircraft Design II	Mavris	*MW 1:55pm -2:45pm
AE 6450 Q	Rocket Propulsion	Seitzman	**Asynchronous
AE 6503 Q	Helicopter Stability & Control	Prasad	**Asynchronous
AE 6505 Q	Random Processes and Kalman Filtering	Gunter	*MWF 9:05am-9:55am
AE 6520 Q	Advanced Flight Dynamics	Prasad	*MW 4:30pm-5:45pm
AE 6580 Q	Nonlinear Control	Tsiotras	*MWF 11:15am-12:05pm
AE 6701 Q	Wind Engineering	Sankar	**Asynchronous
AE 6766 Q	Combustion	Seitzman	*TR 8:00am-9:15am
AE 7774 Q	Fatigue - Materials and Structures	Pierron	*MWF 12:20pm-1:10pm
Synchronous (live) course received or delivered from NIA.			
**Asynchronous (pre-recorded)*			
+ Course instructor on-site at NIA			
NORTH CAROLINA STATE UNIVERSITY			
Mechanical and Aerospace Engineering (MS and PhD)			
MAE 501	Advanced Engineering Thermodynammics	Gould	Asynchronous streaming media
MAE 515	Advanced Automotive Vehicle Dynamics	Tu	Asynchronous streaming media
MAE 526	Fundamentals of Product Design	Ferguson	Asynchronous streaming media
MAE 535	Design of Electromechanical Systems	Buckner	Asynchronous streaming media
MAE 537	Mechanics of Composite Structures	Grace	Asynchronous streaming media
MAE 543	Fracture Mechanics	Eischen	Asynchronous streaming media
MAE 550	Foundations of Fluid Dynamics	Echekki	Asynchronous streaming media
MAE 553	Compressible Fluid Flow	Narayanaswarny	Asynchronous streaming media
MAE 555	Applications of Acoustic and Elastic Wave Propagation	Muller	Asynchronous streaming media
MAE 577	Multiscale Two-Phase Flow Simulations	Bolotnov	Asynchronous streaming media
MAE 586	Project Work in Mechanical or Aerospace Engineering	Peters	Asynchronous streaming media
MAE 589-603	Advanced Dynamics II	Mazzoleni	Asynchronous streaming media
MAE 589-604	Aerodynamics of V/STOL Vehicles	Gopalarathnam	Asynchronous streaming media
MAE 589-607	Direct Energy Conversion	O'Connor	Asynchronous streaming media
MAE 589-608	Bio-Inspired Surfaces	Kota	Asynchronous streaming media
MAE 787	Structural Health Monitoring	Yuan+	MW 8:30am-9:45am
+ Course instructor on-site at NIA			
Electrical and Computer Engineering (courses only)			
ECE 506	Architecture of Parallel Computers	Gehringer	
ECE 515	Digital Communications	Duel-Hallen	
ECE 516	Systems Control Engineering	Chow	
ECE 517	Object-Oriented Design and Development	Gehringer	
ECE 535	Design of Electromechanical Systems	Buckner	
ECE 542	Neural Networks	Lobaton	
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 573	Internet Protocols	Shahzad	Asynchronous streaming media
ECE 574	Computer and Network Security	Enck	
ECE 575	Introduction to Wireless Networking	Sichitiu	
ECE 581	Electric Power System Protection	Baran	
ECE 583	Electric Power Engineering Practicum I	Lubkeman	
ECE 589	Solid State Solar and Thermal Energy Harvesting	Vashaee	
ECE 600	ECE Graduate Orientation	Dai	
ECE 712	Integrated Circuit Design for Wireless Communications	Floyd	
ECE 736	Power Systems Stability and Control	Charrabortty	
ECE 745	Application Specific Integrated Circuit Verification	Oden	
ECE 753	Computational Methods for Power Systems	Lu	
ECE 773	Advanced Topics in Internet Protocols	Harfoush	
ECE 792	Design of Millimeter-Wave Integrated Circuits and Systems	Floyd	
Industrial & Systems Engineering (courses only)			
ISE 501	Introduction to Operations Research	Taheri	
ISE 540	Human Factors in Systems Design	Chen	
ISE 552	Design and Control of Production and Service Systems	King	Asynchronous streaming media
ISE 553	Modeling and Analysis of Supply Chains	Uzsoy	
ISE 716	Automated Systems Engineering	Lee	
ISE 718	Mirco/Nano-Scale Fabrication and Manufacturing	Dong	
ISE 748	Quality Engineering	Fathi	
Materials Sciences and Engineering (courses only)			
MSE 500	Modern Concepts in Materials Science	Ivanisevic	
MSE 555	Polymer Technology and Engineering	Balik	
MSE 556	Composite Materials	Kasichainula	
MSE 565	Introduction to Nanomaterials	LaBean	
MSE 580	Materials Forensics and Degradation	Koch	
MSE 589	Solid State Solar and Thermal Energy Harvesting	Vashaee	Asynchronous streaming media
MSE 702	Defects in Solids	Narayan	
MSE 705	Mechanical Behavior of Engineering Materials	Jones	
MSE 757	Radiation Effects on Materials	Kaoumi	
MSE 791-601	Biomaterials	Yingling	
MSE 791-602	Applications of Surface Science Techniques Materials	Ivanisevic	
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.			
+ 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			
Mechanical & Aerospace Engineering (MS and PhD)			
NIA Received or Web Delivery			
MAE 602	Fluid Dynamics and Aerodynamics	Britcher	TR 2:30pm-3:45pm
MAE 603	Advanced Solid Mechanics	Hou	MW 2:30pm-3:45pm
MAE 608	Applied Mathematics for Engineers	Huang	MW 1:00pm-2:15pm
MAE 620	Heat Transfer I	Qian	T 10:00am-12:40pm
MAE 715/815	Boudary Layer Theory	Qian	R 4:20pm-7:00pm
MAE 731/831	Mechanics of Composite Structures	Kravchenko	TR 11:00am-12:15pm
MAE 734/834	Theory of Vibrations	Xu	TR 9:30am-10:45am
MAE 745/845	Space Flight Dynamics and Control	Newman	MW 2:30pm-3:45pm
MAE 780/880	Engineering Optimization	Hou	MW 4:20pm-5:35pm
MAE 781/881	Advanced Desgin	Kotinis	W 7:10pm-9:50pm
MAE 795/895 (also CHEM 795 and PHYS 495)	Topics: Spectroscopy of Atmospheres	Bernath	MW 9:30am-10:45am
Electrical and Computer Engineering (MS and PhD)			
NIA Received or Web Delivery			
ECE 607	Machine Learning I	Li	R 7:10pm-9:50pm
ECE 612	Digital Signal Processing I	Elbakary	M 7:10pm-9:50pm
ECE 648	Advanced Digital Design	Belfore	TR 3:00pm-4:15pm
ECE 651	Statistical Analysis and Simulation	Gray	T 4:20pm-7:00pm
ECE 652	Wireless Communications Networks	Popescu	MW 1:00pm-2:15pm
ECE 695	Advanced Cyber Tech & Operations	Xin	M 4:20pm-7:00pm
ECE 695	Hardware Security & Trust	Yu	W 10:00am-12:40pm
ECE 742/842	Computer Communication Networks	Chen	W 7:10pm-9:50pm
ECE 763/863	Multivariable Control Systems	Gray	T 7:10pm-9:50pm
ECE 777/877	Semiconductor Process Tehnology	Baumgart	R 7:10pm-9:50pm

Computational Modeling and Simulation Engineering (MS and PhD)				
NIA Received or Web Delivery				
MSIM 603	Simulation Design	Sokolowski	M 1:00pm-3:40pm	
MSIM 607	Machine Learning I	Li	R 4:20pm-7:00pm	
MSIM 703/803	Optimization Methods	TBD	T 7:10pm-9:50pm	
MSIM 715/815	High Performance Computing and Simulations	Sosonkina	W 4:20pm-7:00pm	
MSIM 730/830	Simulation Formalisms	Weisel	M 7:10pm-9:50pm	
MSIM 742/842	Synthetic Environments	Liu	T 4:20pm-7:00pm	
MSIM 773/873	Networked System Security	Shetty	R 7:10pm-9:50pm	
UNIVERSITY OF MARYLAND				
Aerospace Engineering (MS and PhD)				
ENAE 633	Helicopter Dynamics	Datta	TR 9:30am-10:45am	
ENAE 788G	Selected Topics in Aerospace Engineering, Acoustics	Baeder	TR 11:00am-12:15pm	
ENAE 788V	Selected Topics in Aerospace Engineering, Motion Planning for Autonomous Systems	Otte	TR 2:00pm-3:15pm	
* Synchronous (live) course received or delivered from NIA				
XCourse instructor on-site at NIA				
UNIVERSITY OF VIRGINIA **The majority of UVA courses are offered by way of recorded lecture sessions (asynchronous delivery), unless real-time live-stream attendance and/or participation is specified by the				
Civil Engineering				
CE 5300 (Section 600, Class Number 18673)	Advanced Design of Metal Structures	Gomez	**Asynchronous	
CE 5310 (Section 600, Class Number 18675)	Prestressed Concrete Design	Gomez	**Asynchronous	
CE 5410 (Section 600, Class Number 18676)	Intro to Transportation Planning	Miller	**Asynchronous	
CE 6260 (Section 600, Class Number 18680)	Environmental Microbiology and Biological Waste Treatment	Peterson	**Asynchronous	
CE 6450 (Section 600, Class Number 19882)	Transportation Safety Engineering	Fontaine	**Asynchronous	
Chemical Engineering (courses only)				
CHE 6442 (Section 600, Class Number 18182)	Applied Surface Chemistry	Green	**Asynchronous	
CHE 6630 (Section 600, Classs Number 18183)	Mass Transfer	Geise	**Asynchronous	
Electrical and Computer Engineering (MS and Ph.D.)				
ECE 6502 (Section 600, Class Number 16032)	Photovoltaics	Gupta	**Asynchronous	
ECE 6502 (Section 602,Class Number 16261)	Digital Control Techniques for Robotic Systems	Tao	**Asynchronous	
ECE 6850 (Section 600, Class Number 19467)	Intro to Control Systems	Lin	**Asynchronous	
Materials Sciences and Engineering (MS and Ph.D.)				
MSE 6080 (Section 600, Class Number 18465)	Chemical and Electrochemical Properties	Zangari	**Asynchronous	
MSE 6130 (Section 600, Class Number 16283)	Transmission Electron Microscopy	Howe	**Asynchronous	
MSE 6167 (Section 600, Class Number 18567)	Electrical, Magnetic, & Optical Properties of Materials	Reinke	**Asynchronous	
Mechanical and Aerospace Engineering (MS and PhD)				
MAE 6250 (Section 600, Class Number 16160)	Multibody Mechanical Systems	Russell	**Asynchronous	
MAE 6430 (Section 600, Class Number 15997)	Statistics for Engineers and Scientists	Guadagni	**Asynchronous	
MAE 6710 (Section 600, Class Number 15998)	Finite Element Analysis	Panzer	**Asynchronous	
MAE 6592 (Section 600, Class Number 16284)	X-Ray Scattering Techniques in Materials Science	TBD	TBD	
Engineering Physics (MS and Ph.D.)				
Systems Engineering (MS and Ph.D.)				
SYS 6050 (Section 600, Class Number 16143)	Risk Analysis	Lambert	**Asychronous	
VIRGINIA TECH (all courses tentatively scheduled, check back for changes/cancellations)				
Aerospace and Ocean Engineering (MS and P.D)				
AOE 5054	Elastic Stability	Kapania	TBA	
AOE 5114	High Speed Aerodynamics	Adams	TBA	
AOE 5144	Boundary-Layer Theory	Schetz	TBA	
AOE 5234	Orbital Mechanics	Black	TBA	
AOE 5314	Naval & Marine Engr Sys Design	Brown	TR 2:00pm-3:15pm	
AOE 5316	Naval Ship Design	Brown	TBA	
AOE 5334	Advanced Ship Dynamics	Brizzolara	TBA	
AOE 5444G	Adv Dyn of High Speed Craft	Brizzolara	TBA	
AOE 5764	Applied Linear Control	SC Southward	TR 12:30pm-1:45pm	
AOE 6064	Reliability Based Design Optimization	Canfield	TBA	
AOE 6174	Computational Plasma Dynamics	Srinivasan	TR 2:00pm-3:15pm	
AOE 6254	Turbulence Modeling & Simulation	Roy	TBA	
AOE 6444	Verification Validation Sci Computing	Roy	TBA	
Computer Scinece (MS and PhD)				
CS 5040	Intermed Data Struct/Algorithm	Shaffer	TR 3:30pm-4:45pm	
CS 5566	Netword Arch and Protocols	Park	T 4:00pm-6:45pm	
CS 5580	Cryptographic Engineering	Staff	TR 9:30am-10:45am	
CS 6444	Verification Validation Sci Computing	Roy	TBA	
CS 6524	Deep Learning	Xuan	MW 4:00pm-5:15pm	
Civil & Environmental Engineering (MS and PhD)				
CEE 5984	Infrastructure Policy	Staff	TBA	
Electrical Computer Engineering (MS and PhD)				
ECE 5106	Electromagnetic Waves	Staff	M 4:00pm-6:45pm	
ECE 5244	Advanced Power Conversion Tech	Staff	TR 3:30pm-4:45pm	
ECE 5274	Mod & Cont 3-PH PWM Coverters	Wang	MW 2:30pm-3:45pm	
ECE 5374G	Adv Alternate Energy Systems	Rahman	TBA	
ECE 5444	Adv Technological Singularity	Paul	M 5:30pm-8:15pm	
ECE 5480	Cybersecurity and the IoT	Giles	TBA	
ECE 5484	Fundamentals Computer Systems	Staff	TBA	
ECE 5486	Networks and Protocols	Athanas	TBA	
ECE 5514	Design of Systems on a Chip	Paul	TBA	
ECE 5550G	Advanced Real Time Systems	Chantem	TR 11:00am-12:15pm	
ECE 5566	Network Arch and Protocols	Park	T 4:00pm-6:45pm	
ECE 5580	Cryptographic Engineering	Staff	TR 9:30am-10:45am	
ECE 5586	IT Security and Trust	Staff	TBA	
ECE 5606	Stochastic Signals and Systems	Staff	MW 2:30pm-3:45pm	
ECE 5636	Radar System Design	Mili	W 4:00pm-6:45pm	
ECE 5644	Game Theory for Com Networks	Staff	TR 3:30pm-4:45pm	
ECE 5654	Dig Comm Adv Theory & Analy	Staff	TR 11:00am-12:15pm	
ECE 5664	Cellular Communications Systems	Reed	MW 4:00pm -5:15pm	
ECE 5684	Error Control Coding	Staff	TR 12:30pm-1:45pm	
ECE 5714	Robust Estimation & Filtering	Mili	M 4:00pm-6:45pm	
ECE 5764	Applied Linear Control	Southward	TR 12:30pm-1:45pm	
ECE 5944	Seminar	Plassmann	F 4:00pm-5:30pm	
ECE 5984	SS: Electronic Packaging	Dimarino	TR 5:00pm-6:15pm	
ECE 5984	SS: Compiler Optimizations	Ravindran	TR 12:30pm-1:45pm	
ECE 5984	SS: Innv Pthwys AI & Mach Lrng	Giles	TBA	
ECE 5984	SS: Cyber-Physical Sys Sec	Gerdes	TR 3:30pm-4:45pm	
ECE 5984	SS: Quantum Engineering	Kovanis	TR 5:00pm-6:15pm	
ECE 5984	SS: Appl Machine Learning	Jones	TR 6:30pm-7:45pm	
ECE 6116	Antenna Theory and Design, I,II	Ellingston	TBA	
ECE 6174	Computational Plasma Dynamics	Srinivasan	TR 2:00pm-3:15pm	
ECE 6524	Deep Learning	Xuan	MW 4:00pm -5:15pm	
Industrial & Systems Engineering (MS and PhD)				
ENGR 5104	Applied Syst Engr	Ghaffarzadegan	T 7:00pm-9:45pm	
ISE 5134	Mgmt Info Systems	Geraghty	R 4:00pm-6:45pm	
ISE 5174	Engr Prog and Proj Mgmt	Harmon	T 4:00pm-6:45pm	
Mechanical Engineering (MS and PhD)				
ME 5734 (VT CRN: 16684)	Advanced Engineering Acoustics	Fuller +	TR 3:30pm-4:45pm	
X Course Instructor on-site at NIA				

Courses are available for graduate credit *Synchronous (live) course received or delivered from NIA XX ONLINE course. Primarily received at desktop.+ Course instructor on-site at NIA.
**Synchrounous (live) course delivered at the Peninsula Graduate Center
are delivered at NIA Headquarters.

MSE and ME courses