NIA Graduate Program: Fall 2022

FULL COURSE LIST

HAMPTON UNIVERSITY			
TBD			
* Courses taught on HU campus			
+ Course instructor on-site at NIA			
GEORGIA TECH			
Aerospace Engineering (MS and PhD)			
AE 6009 Q	Viscous Fluid Flow	Young, Pui-Kuen	
AE 6114 Q	Fundamental Solid Mechanic	Rimoli, Julian	
AE 6230 Q	Structural Dynamics	Riso, Cristina	
AE 6322 Q	Spacecraft Design I	Lightsey, Edgar	
AE 6322 Q01	Spacecraft Design I	Lightsey, Edgar	Asynchronous streaming media
AE 6333 Q	Rotorcraft Design I	Smith, Marilyn	
AE 6343 Q	Aircraft Design I	Mavris, Dimitrious	
AE 6353 Q	Orbital Mechanics	Ho, Koki	
AE 6372 Q	Aerospace Systems Engr	Garcia, Elena	
AE 6373 Q	Adv Design Methods I	Mavris, Dimitrious	
AE 6372 Q01	Adv Design Methods I	Mavris, Dimitrious	
AE 6383 QMA	Applied Design Lab	Mavris, Dimitrious	
AE 6393	Intro to Sys of Sys Eng	Mavris, Dimitrious	
AE 6503	Helicopter Stability & Ctl	Prasad, J	
AE 6530	Mulivar Linear Sys & Ctl	Haddad, Wassim	
AE 6551	Cognitive Engineering	Feigh, Karen	
AE 6760	Acoustics I	Arvanitis, Costas	
AE 6765	Kinetics & Thermo Gases	Jagoda, Jechiel	
AE 8803 QRA	Vertical Lift Aeromechanics	Rauleder, Juergen	
AE 8803 QVA	Opt-Based Learning Cont & Game	Vamvoudakis, Kyriakos	
**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	Echekki	
MAE 505	Heat Transfer Theory and Applications	Saveliev	
MAE 511	Advanced Dynamics with Applications to Aerospace Systems	Mazzoleni	
MAE 517	Advanced Precision Manufacturing for Products, Systems and Processes	Tu	
MAE 531	Engineering Design Optimization	Ferguson	
MAE 533	Finite Element Analysis I	Zikry	
MAE 536	Mirco/Nano Electromechanical Systems	Zhu	
MAE 541	Advanced Solid Mechanics I	Huang	
MAE 561	Wing Theory	Gopalarathnam	
MAE 586	Mechanical Engineering Project Work	Peters & Others	Asynchronous streaming media
Electrical and Computer Engineering *(courses only)*			
ECE 511	Analog Electronics	Floyd	
ECE 513	Digital Signal Processing	Bottomley	
ECE 518	Wearable Biosensors and Microsystems	Daniele	
ECE 534	Power Electronics	Bhattacharya	
ECE 547	Cloud Computing Technology	Viniotis	
ECE 550	Power Systems Operations and Control	Baran	
ECE 560	Embedded System Architecture	Dean	
ECE 564	ASIC and FPGPA Design With Verilog	Franzon	
ECE 568	Conventional & Emerging NanomanufacturingTechniques and Their Applications in Nanosystems	Lee	
ECE 573	Internet Protocols	Harfoush	
ECE 574	Computer and Network Security	Enck	Asynchronous streaming media
ECE 578	LTE and 5G Communications	Guvenc	
ECE 579	Introduction to Computer Performance Modeling	Rouskas	
ECE 585	Business of Electric Utility	Gajda	
ECE 587	Power System Transients Analysis	White	
ECE 591	Special Topics for General Electric Students	Franzon	
ECE 591	Special Topics for ABB Students	Franzon	
ECE 592	Special Topics in Data Science	Baron	
ECE 592	Optimization and Algorithms	Lin	
ECE 592	Data Analytics for Power Engineering	Tang	
ECE 600	ECE Graduate Orientation	Dai	
ECE 714	Advanced Integrated Circuit Design: Data Converters	Ricketts	
ECE 732	Dynamics and Control of Electric Machines	Hussain	
ECE 748	Advanced Verification with UVM	Oden	
Industrial & Systems Engineering *(courses only)*			
ISE 501	Introduction to Operations Research	King	
ISE 510	Applied Engineering Economy	King	
ISE 513	Humanitarian Logistics	Mayorga	
ISE 515	Manufacturing Process Engineering	Lee	
ISE 520	Healthcare Systems Performance Improvement	Ivy	
ISE 544	Occupational Biomechanics	Xu	Asynchronous streaming media
ISE 560	Stochastic Models in Industrial Engineering	Wan	
ISE 716	Automated Systems Engineering	Dong	
ISE 741	Systems Safety Engineering	Chen	
ISE 754	Logistics Engineering	Kay	
Materials Sciences and Engineering *(courses only)*			
MSE 500	Modern Concepts in Materials Science	Kwanza	
MSE 509	Nuclear Materials	Murty	
MSE 540	Processing of Metallic Materials	Koch	
MSE 545	Ceramic Processing	Kashichainula	
MSE 591	Quantitative Materials Characteristics	Winkler	Asynchronous streaming media
MSE 591	Introduction to Materials Informatics--8 Weeks Only	Yingling	
MSE 723	Materials Informatics	Yingling	
MSE 760	Materials Science in Processing of Semiconductor Devices	Narayan	
MSE 791	Quantitative Materials Characteristics	Winkler	
MSE 791	Nonferrous Alloys	Kasichainula	
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			
**Synchronous (live) course received or delivered from NIA.*			
OLD DOMINION UNIVERSITY			
Aerospace Engineering *(MS and PhD)*			
All MAE classes transmitted live online with backup recordings			
Mechanical and Aerospace Engineering *(MS and PhD)*			
MAE 560	Introduction to Space Systems Engineering	Asundi	TR 9:30am-10:45am
MAE 604	Analytical Dynamics	Newman	MW 11:00am-12:15pm
MAE 605	Advanced Classical Thermodynamics	Taylor	MW 1:30pm-2:45pm

MAE 607	Continuum Mechanics	Elmustafa	MW 3:00pm-4:15pm
MAE 640	Modern Control Theory	Alberts	MW 1:30pm-2:45pm
MAE 672	Design and Analysis of Experiments	Landman	TR 4:20pm - 5:35pm
MAE 740/840	Autonomous and Robotic Systems Analysis and Control	Kaipa	TR 1:30pm-2:45pm
MAE 744/844	Atmospheric Flight Dynamics and Control	Newman	TR 1:30pm-2:45pm
MAE 752/852	Mechanical Behavior of Materials	Ghosh	TR 3:00pm-4:15pm
MAE 753/853	Composite Materials	Kravchenko	TR 11:00am-12:15pm
CHEM 795/895 or MAE795	Topics: Physics & Chemistry of Planetary Atmosheres	Bemath	MW 9:30am-10:45am
UNIVERSITY OF MARYLAND			
Aerospace Engineering *(MS and PhD)*			
ENAE 631	Helicopter Aerodynamics I	Chopra	TR 9:30am-10:45am
ENAE 636	Helicopter Dynamics II	Datta	MW 9:30am-10:45am
ENAE 684	Computational Fluid Dynamics I	Baeder	TR 11:00am-12:15pm
ENAE 788B	Selected Topics in Aerospace Engineering: Aircraft Systems Identification - *Course Cancelled as of 8/8/22*	Morelli	MW 11:00am-12:15pm
ENAE 788C	Selected Topics in Aerospace Engineering: Aircraft Flight Testing	Tritschler	TR 5:00pm-6:15pm
Above are synchronous (live) course received on student's desktop or laptop			
UNIVERSITY OF VIRGINIA			
Civil Engineering			
CE 5020 (Section 600, Class Number (16988)	Intro to Geographic Information Systems	Miller	Asynchronous
CE 5340 (Section 600, Class Number (16990)	Advanced Topics in Structural Engineering	Gomez	Asynchronous
CE 5400 (Section 600, Class Number (16991)	Traffic Operation	Park	Asynchronous
CE 6030 (Section 600, Class Number (18992)	Green Engineering and Sustainability	Peterson	Asynchronous
CE 6035 (Section 600, Class Number (17053)	Leadership and Negotiation	Lownsbury	Asynchronous
CE 6470 (Section 600, Class Number (16992)	Transport Economics and Finance	Chen	Asynchronous
CE 6500 (Section 600, Class Number (18995)	Special Topics: Land Development Engineering	Pennetti	Asynchronous
CE 6500 (Section 601, Class Number (20117)	Special Topics: Adv Reinforced Concrete Design	Gomez	Asynchronous
CE 6710 (Section 600, Class Number (16993)	Advanced Mechanics of Materials	Pindera	Asynchronous
CE 6775 (Section 600, Class Number (18997)	Theory of Structural Stability	Gomez	Asynchronous
Chemical Engineering			
CHE 6450 (Section 600, Class Number (17051)	Energy Science and Technologies	Epling	Asynchronous
CHE 6615 (Section 600, Class Number (17048)	Advanced Thermodynamics	Choi	Asynchronous
Electrical and Computer Engineering *(MS and Ph.D.)*			
ECE 6163 (Section 600, Class Number (17052)	Solid State Devices	Ghosh	Asynchronous
ECE 6501 (Section 600, Class Number (17055)	Topics in Electrical and Computer Engineering: Machine Learning in Image Analysis	Zhang	Asynchronous
ECE 6501 (Section 600, Class Number (17057)	Topics in Electrical and Computer Engineering: Semiconductor Devices: Design and Charaterization	Shukla	Asynchronous
ECE 6501 (Section 600, Class Number (17058)	Topics in Electrical and Computer Engineering: Convex Optimization for Engineering Data	Li	Asynchronous
ECE 6501 (Section 600, Class Number (17059)	Topics in Electrical and Computer Engineering: Geometry of Data	Fletcher	Asynchronous
ECE 6501 (Section 600, Class Number (18965)	Topics in Electrical and Computer Engineering: Low Power Wireless Transceivers for IoT	Bowers	Asynchronous
ECE 6501 (Section 605, Class Number (18967)	Topics in Electrical and Computer Engineering: Dielectrics, Electronic Oxides, and Devices	Ihlefeld	Asynchronous
ECE 6502 (Section 600, Class Number (17061)	Special Topics in Electrical and Computer Engineering: Statistical Learning and Graphical Models	Hassanzadeh	Asynchronous
ECE 6502 (Section 601, Class Number (17062)	Special Topics in Electrical and Computer Engineering: Advanced Thin-Film Optoelectronics	Lee	Asynchronous
ECE 6502 (Secton 602, Class Number (18968)	Special Topics in Electrical and Computer Engineering: Electrons and Phonons I	Zebarjadi	Asynchronous
ECE 6642 (Section 600, Class Number (19046)	Optoelectronic Devices	Campbell	Asynchronous
ECE 6851 (Section 600, Class Number (17016)	Linear Automatic Control Systems	Tao	Asynchronous
ECE 6852 (Section 600, Class Number (17015)	Linear State Space Control Systems	Tao	Asynchronous
Materials Sciences and Engineering *(MS and Ph.D.)*			
MSE 6010 (Section 600, Class Number (16997)	Electronic and Crystal Structure of Materials	Reinke	Asynchronous
MSE 6120 (Section 600, Class Number (18908)	Characterization of Materials	Fitz-Gerald	Asynchronous
MSE 6230 (Section 600, Class Number (16998)	Thermodynamics and Phase Equilibria of Materials	Zhou	Asynchronous
MSE 6592 (Section 600, Class Number (18910)	Topics in Material Science: Dielectrics, Electronic Oxides, and Devices	Ihlefeld	Asynchronous
MSE 6592 (Section 601, Class Number (17000)	Topics in Material Science: Adv Thin-Film Optoelectronics	Lee	Asynchronous
MSE 6592 (Section 602, Class Number (17001)	Topics in Material Science: Semiconductor Devices: Design and Characterization	Shukla	Asynchronous
MSE 6592 (Section 603, Class Number (17002)	Topics in Material Science: Intro to the Materials Science of Polymers	Cai	Asynchronous
Mechanical and Aerospace Engineering *(MS and PhD)*			
MAE 6610 (Section 600, Class Number (17072)	Linear Automatic Control Systems	Tao	Asynchronous
MAE 6620 (Section 600, Class Number (16996)	Linear State Space Systems	Tao	Asynchronous
Systems Engineering *(MS and Ph.D.)*			
SYS 6001 (Section 600, Class Number (17069)	Intro to Systems Analysis and Design	Scherer	Asynchronous
SYS 6003 (Section 600, Class Number (17006)	Optimization Models and Methods	Riggs	Asynchronous
SYS 6005 (Section 600, Class Number (17007)	Stochastics Modeling I	Iqbal	Asynchronous
SYS 6581 (Section 600, Class Number (19005)	Selected Topics in Systems Engineering: Human Factors in Safety	Bolton	Asynchronous
**Synchronous (live) course received on student desktop or laptop*			
VIRGINIA TECH			
Aerospace and Ocean Engineering *(MS and P.D)*			
AOE 5074	Advanced Ship Structural Analysis	Gilbert	Asynchronous
AOE 5104	Adv Aero Hydrody	Massa	Asynchronous
AOE 5124	Aero and Hydroacoustics	Devenport	Asynchronous
AOE 5135	Vehicle Propulsion	Young	Asynchronous
AOE 5154	Data Analysis in Fluid Dyn	Lowe	Asynchronous
AOE 5164	Fluid-Structure Interaction	Wang	Asynchronous
AOE 5174	Introduction to Plasma Science	TBA	Asynchronous
AOE 5204	Vehicle Dynamics and Control	Psiaki	Asynchronous
AOE 5304	Advanced Naval Architecture	Brizzolara	Asynchronous
AOE 5315	Naval Ship Design	Brown	Asynchronous
AOE 5324	Principles of Naval Engineering with Applications	Brown	Asynchronous
AOE 5434G	Advanced Introduction Composite Fluid Dynamics	Roy	Asynchronous
AOE 5604	Modeling Composites Damage	Seidel	Asynchronous
AOE 5744	Linear Systems Theory	Boker	TR 11:00am-12:15pm
AOE 5754	Applied Linear Systems	Southward	Asynchronous
AOE 5774	Nonlinear Systems Theory	Sultan	Asynchronous
AOE 5784	Estimation and Filtering	Psiaki	Asynchronous

 # Courses are available for graduate credit
XX ONLINE course. Primarily received at desktop.
***Synchronous (live) course delivered at the Peninsula Graduate Center Headquarters.*

**Synchronous (live) course received or delivered from NIA*
X Course instructor on-site at NIA.
All VT AOE, ESM, MSE and ME courses are delivered at NIA