

Undergraduate Mech. Eng. Technical Electives	Prerequisites	Fall 2020	Winter 2021
Aerospace Option (All 3 from below List A)			
MECH 3520 Aerodynamics	MECH 3492	Ferguson	
MECH 4182 Aerospace Structures: Analysis and Design	MECH 3502		Telichev
MECH 4192 Aerospace Materials and Manufacturing Processes	MECH 3542		Jayaraman
Aerospace Option Cont'd – as well Choose 2 from below List B)			
MECH 3582 Manufacturing Planning and Quality Control	MECH 2112	Peng	
MECH 4200 Gas Turbines Propulsion Systems	MECH 2202, 3520	Birouk	
MECH 4432 System Engineering	Special Approval	Not offered 2020/21	
MECH 4452 Aircraft Performance, Dynamics and Design	MECH 3520		Chatoorgoon
MECH 4482 Applied Aerospace Instrumentation	MECH 3430, 3982, 3992	Atamanchuk	
ENG 4110 Operational Excellence (Requirements -	STAT 2220 (MECH 3170 recom.)	Campbell	Campbell
Aerospace Stream Choose 3 from below list)			
MECH 3520 Aerodynamics	MECH 3492	Ferguson	
MECH 4182 Aerospace Structures: Analysis and Design	MECH 3502		Telichev
MECH 4192 Aerospace Materials and Manufacturing Processes	MECH 3542		Jayaraman
MECH 4200 Gas Turbines Propulsion Systems	MECH 2202, 3520	Birouk	
MECH 4452 Aircraft Performance, Dynamics and Design	MECH 3520		Chatoorgoon
Materials Stream (Choose 3 from below list)			
MECH 4192 Aerospace Materials and Manufacturing Processes	MECH 3542		Jayaraman
MECH 4310 Cont. Topics in Mech. Eng. 1: Analysis of Composite Matls	MECH 3502	Not offered 2020/21	
MECH 4350 Topics in Eng Matls 1: Properties and Apps of Nanomaterials	Special Approval	Deng	
MECH 4360 Biomaterials for Medical Applications	Special Approval		Xing
MECH 4870 Fracture and Failure of Materials	MECH 3542	Zhu	
Solid Mechanics Stream (Choose 3 from below list)			
MECH 4182 Aerospace Structures: Analysis and Design	MECH 3502		Telichev
MECH 4322 Contemporary Topics in Mech Eng 2: Reliability Engineering	Special Approval	Liang	
MECH 4452 Aircraft Performance, Dynamics and Design	MECH 3520		Chatoorgoon
MECH 4470 Mechanical Vibration	MECH 3420		
MECH 4510 Finite Element & Analysis	MATH 3132, MECH 2150, 2222	Luo	
MECH 4532 Advanced Strength of Materials	MECH 3482		
MECH 4550 Noise Control	MECH 3420		
MECH 4672 Advanced Mechanical Design	MECH 3482		
Thermofluids Stream (Choose 3 from below list)			
MECH 3520 Aerodynamics	MECH 3492	Ferguson	
MECH 4200 Gas Turbine Propulsion Systems	MECH 2202, 3520	Birouk	
MECH 4292 IC Engines	MECH 2202	Not offered 2020/21	
MECH 4412 Heating, Ventilation, and Air Conditioning	MECH 2202	Derksen	
MECH 4560 Selected Topics in Fluid Mechanics 4M Fluid Turbulence	MATH 3132, MECH 3492		Tachie
MECH 4680 Energy Conversion and Utilization	MECH 2202	Not offered 2020/21	
MECH 4692 Renewable Energy	MECH 2202		Bibeau
MECH 4694 Advanced Topics in Heat Transfer	MECH 3460	Not offered 2020/21	
MECH 4702 Design of Thermal Systems	MECH 2202	Not offered 2020/21	
MECH 4822 Numerical Heat Transfer in Fluid Flow	MATH 3132, MECH 3460,3492	Not offered 2020/21	

Manufacturing Stream (Choose 3 from below list)			
MECH 3550 Robotics & Computer Numerical Control	MECH 2112	Not offered 2020/21	
MECH 3562 Introduction to Optimization	MECH 2112	Not offered 2020/21	
MECH 3570 Manufacturing Automation	MECH 3550	Not offered 2020/21	
MECH 3582 Manufacturing Planning and Quality Control	MECH 2112	Peng	
MECH 3592 Simulation Modeling and Facilities Planning	MECH 2112		Peng
MECH 4192 Aerospace Materials and Manufacturing Processes	MECH 3542		Jayaraman
MECH 4240 Design for Manufacturing		Not offered 2020/21	
MECH 4330 Cont. Topics in Manufacturing 1: Appl. Manufacturing Eng.	MECH 3503 Pre/Co MECH 3652	N. Balakrishnan	
MECH 4342 Contemporary Topics in Manufacturing 2		Not offered 2020/21	

Other Technical Electives			
MECH 4162 Thesis	Eligible to Graduate	Kuhn (spanned course)	
MECH 4322 Advanced Graphical Communication			Sykes
MECH 4322 Cont. Topics in Mech Eng 2: Design of Biomedical Devices	MECH 2112	O'Brien	
MECH 4812 Automotive Engineering	MECH 3502, Pre/Co 3420		Labossiere