

Aerospace Engineering

College of
Engineering

Degree Requirements

In addition to fulfilling UK Core and College of Engineering requirements, students must complete the biosystems engineering curriculum. The following curriculum meets the requirements for the B.S. degree.

Freshman Year

First Semester	Hours
EGR 101 Engineering Exploration I § ▽	1
EGR 102 Fundamentals of Engineering Computing	2
CIS/WRD 110 Composition and Communication I	3
MA 113 Calculus I	4
PHY 231 General University Physics	4
PHY 241 General University Physics Laboratory	1

Second Semester

EGR 103 Engineering Exploration II § ▽	2
MA 114 Calculus II	4
CIS/WRD 111 Composition and Communication II	3
CHE 105 General College Chemistry I	4
UK Core – Social Sciences	3

Sophomore Year

First Semester	Hours
MA 213 Calculus III	4
PHY 232 General University Physics	4
PHY 242 General University Physics Laboratory	1
EM 221 Statics	3
AER/ME 251 Introduction to Materials and Manufacturing Processes	3
AER 245 Introduction to Aerospace Engineering	3

Second Semester

AER/ME 220 Engineering Thermodynamics I	3
EM 302 Mechanics of Deformable Solids	3
MA 214 Calculus IV	3
EM 313 Dynamics	3
UK Core – Humanities	3

STA 210 Making Sense of Uncertainty: An Introduction to Statistical Reasoning or STA 296 Statistical Methods and Motivations or STA 381 Engineering Statistics – A Conceptual Approach	3
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Junior Year

First Semester

	Hours
EE 305 Electrical Circuits and Electronics	3
AER 355 Engineering Analysis	3
AER 305 Aerospace Structures	3
AER/ME 330 Fluid Mechanics	3
WRD 204 Technical Writing	3

Second Semester

AER/ME 310 Engineering Experimentation I	3
AER 320 Propulsion	3
AER/ME 325 Elements of Heat Transfer	3
AER 345 Flight Dynamics	3
AER 335 Aerodynamics	3

Senior Year

First Semester

	Hours
AER 411 AER Capstone Design I	3
AER 410 Aerospace Engineering Laboratory	3
AER/ME 440 Design of Control Systems	3
AER 445 Aircraft Performance	3
Technical Elective*	3

Second Semester

AER 412 AER Capstone Design II	3
Technical Elective*	3
Technical Elective*	3
UK Core – Citizenship	3
UK Core – Global Dynamics	3

§ Transfer students will take EGR 215, Introduction to the Practice of Engineering for Transfer Students, in place of EGR 101 and EGR 103.

▽ Students must complete both EGR 101 and EGR 103 to fulfill the UK Core Arts and Creativity requirement. Transfer students may satisfy the UK Core Arts and Creativity requirement by taking EGR 215.

*Technical electives can be chosen from the following list. At least three credit hours must come from either AER/ME 501 OR AER/ME 590.

AER 380 Topics in Aerospace Engineering (Variable Topics)
AER 395 Independent Work in Aerospace Engineering
AER/ME 501 Mechanical Design with Finite Element Methods
AER/ME 506 Mechanics of Composite Materials
AER/ME 510 Vibro-Acoustic Design in Mechanical Systems
AER/ME 513 Mechanical Vibrations
AER/ME 514 Computational Techniques in Mechanical System Analysis
AER/ME 516 Systems Engineering
AER/ME 530 Gas Dynamics
AER/ME 531 Fluid Dynamics I
AER/ME 532 Advanced Strength of Materials
AER 545 Aircraft Control and Simulation
AER/ME 548 Aerodynamics of Turbomachinery
AER/ME 563 Basic Combustion Phenomena
AER/ME 565 Scale Modeling in Engineering
AER/ME 590 Applied CFD and Numerical Heat Transfer
AER 599 Topics in Aerospace Engineering (Subtitle required)

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