

AERO 190 – Aeronautical Engineering Principles				
Eastern Mediterranean University Faculty of Engineering				
Department: Mechanical Engineering				
Program Code: 2X	Program: Aeronautical Engineering		Year/Semester: 2026/2027 FALL	
Course Code: AERO 190	Course Title: Aeronautical Engineering Principles	Credit hours		
		Lec.	Tut/Lab	Total
		2	1	2
Categorization of Course: ☒ Engineering or Area Core ☐ Engineering Course offered by other programs ☐ Engineering Area Elective ☐ Mathematics and Basic Sciences ☐ General Education		Categorization of Credits: Mathematics & Basic Science: - Engineering Topics: 1 General Education: - Major Engineering Design: -		
Instructor Name: Prof. Dr. Qasim Zeeshan		Office no: ME141	Office Tel: 5555	
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Course Web Page: https://staff.emu.edu.tr/qasimzeeshan/en				
Textbook(s): - Lecture notes - John D. Anderson Jr. Introduction to Flight. - John D. Anderson Jr, Aircraft Performance and Design				
Catalog Description: This course aims to familiarize first year aeronautical engineering students by introducing them the fundamentals of discipline; program curriculum and faculty; job opportunities for mechanical engineers; basic study skills; an overview of fundamentals laws and principles of aeronautical engineering; which include: Introduction to Aeronautics, Basics of aerodynamics, Basics of propulsion, Basics of aircraft performance, stability and control, Basics of aircraft materials, structures and manufacturing; collection and presentation of engineering data; technical report writing; ethical issues; occupational health and safety issues; and the importance of computers, programming language skills and artificial intelligence.				
Prerequisite(s)	N/A			
Type of Course	☒ Required ☐ Selected Elective ☐ Elective			
Student Outcomes				
1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.			☒
2	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.			☐
3	An ability to communicate effectively with a range of audiences.			☒
4	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.			☒
5	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.			☐
6	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.			☐
7	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.			☐

Course Learning Outcomes		Student Outcomes							Assessment Percentages
		1	2	3	4	5	6	7	
1	Understand the Fundamentals of Aeronautics Engineering.	X							Attendance: 10% Midterm Exam: 30% Final Exam: 40% Project & Presentation: 20% (A Technical Report will be produced using standard conventions in terms of page layout, headings, table of contents, tables, figures, pictures, and references. Students are also required to orally present their work aiming to enhance spoken fluency, and provide training in the components of a good, academic presentation.)
2	Understand the use of units/dimensions and unit conversion in engineering calculations	X							
3	Understand basic principles of scientific computation and engineering solutions i.e. Problem Identification, Problem Formulation and Problem Solution.	X							
4	Understand collection and presentation of engineering data			X					
5	Understand the Ethical issues and Professional Responsibilities in Engineering.				X				
6	Understand the fundamentals of Occupational Health and Safety, and safety practices at departmental laboratories and university campus.				X				
	Weight of Student Outcomes	L		L	H				

Topics Covered and Class Schedule:	
Week 1	Introduction; Aeronautics engineering profession, Aeronautics engineering fields, program curriculum; program faculty and departmental facilities.
Week 2	Engineering Ethics; Research and Publication ethics committee of EMU. Professional engineering organizations and Code of Ethics.
Week 3	Technical Problem Solving and Technical Report Writing, Presenting engineering calculations. Unit Systems and Unit Conversion, Dimensional Consistency, Technical Report Layout, Citing references on APA Style
Week 4	Basics of Aerodynamics
Week 5	Basics of Aerodynamics
Week 6	Basics of Propulsion
Week 7	Basics of Propulsion
Week 8 & 9	Midterm Examination
Week 10	Basics of Aerospace Materials, Structures and Manufacturing
Week 11	Basics of Aerospace Materials, Structures and Manufacturing
Week 12	Basics of Aircraft Performance, Stability and Control
Week 13	Basics of Aircraft Performance, Stability and Control
Week 14	Introduction to Engineering Design: Introduction to Design. CAD/ CAM, and Artificial Intelligence
Week 15	Occupational Health and Safety
Week 16	Final Examination