The University of Jordan
School of Engineering

Department	Course Name	Course Number	Semester
Mechanical Engineering	Rotary Wing Aircrafts	0994562	

2025 Course Catalog Description

Fundamentals of aerodynamics and fluid flow concepts for developing rotary wing aircraft performance. Two-dimensional aerodynamic characteristics of airfoils and their application in helicopter design. Means for augmenting lift and the effects of various types of high lift devices on the aerodynamic characteristics. Aerodynamics of finite aspect ratio wings leading to the fundamentals of airplane performance calculation. Theory of helicopter hovering and vertical flight including autorotation and the aerodynamic behavior of the rotor and helicopter in forward flight. Introduction to airplane and helicopter stability.

Instructors

Name	E-mail	Section	Office Hours	Lecture Time

Prerequisites

Prerequisites by topic	
Prerequisites by course	0994363
Co-requisites by course	
Prerequisite for	

Topics Covered

Week	Topics
1	
2	
3	
4	
5	
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11	
12	
13	
14	
15	

Evaluation

Assessment Tools	Expected Due Date	Weight

Contribution of Course to Meet the Professional Components

Relationship to Student Outcomes							
SOs	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Availability							

Relationship to Aeronautical Engineering Program Objectives (AEPOs)				
AEPO1	**AEPO2**	**AEPO3**	**AEPO4**	**AEPO5**

ABET Student Outcomes (SOs)	
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

Updated by ABET Committee, 2025