

The University of Jordan
School of Engineering



Department	Course Name	Course Number	Semester	
Mechanical Engineering	Viscous Flow	0904910		
2025 Course Catalog Description				
Navier-Stokes equations. Exact solution of Navier-stokes equations, Stokes and Oseen approximations. Laminar-boundary-layer calculation procedures: Self-similar and non-similar boundary layers, Integral and differential methods. Stability of laminar boundary layer flows, transition to turbulence. Turbulent flow: calculation of boundary-layers wakes and jets, viscous compressible flow.				
Instructors				
Name	E-mail	Section	Office Hours	Lecture Time
Prerequisites				
Prerequisites by topic				
Prerequisites by course				
Co-requisites by course				
Prerequisite for				
Topics Covered				
Week	Topics			
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
Evaluation				
Assessment Tools	Expected Due Date		Weight	

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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							