

Course Title	Compressible Flow				
Course Code	MME418				
Course Type	Technical Elective Course				
Level	Undergraduate				
Year / Semester	4 th year /				
Teacher's Name					
ECTS	6	Lectures / week	3+1	Laboratories / week	
Course Purpose and Objectives	The basic objective of the course is to teach students the fundamental of flow of compressible fluids which differs substantially from that of incompressible fluids.				
Learning Outcomes	The students, by using real data, are trained in the analysis of the various compressible flows described in the course content below.				
Prerequisites	MME215, MME315, MME317		Required		
Course Content	Compressible gas flow is a topic of interest in contemporary engineering applications, such as the transport and storage of natural gas. This course is an introduction to the fundamentals of the compressible flow of gases and includes the following topics: appropriate conservation laws; propagation of disturbances; isentropic flows; Mach number, speed of sound and regimes in compressible flow; one-dimensional steady compressible flow; choking in isentropic flow; isentropic flow in convergent-divergent passages; normal shock wave relations, oblique shock waves, weak and strong shocks, and shock wave structure; compressible flows in ducts with area changes, friction, or heat addition; Prandtl-Meyer function. The emphasis will be on physical understanding of the phenomena and basic analytical techniques.				
Teaching Methodology	<p>Lecture and help sessions. The material and theory is presented using deductive reasoning, in other words the material is first presented in a general form and then, by using the specifics of the various problems, the theory is reduced to a form specific to the particular problem in consideration.</p> <p>Communicative, Collaborative</p> <p>During the first week of the semester, the Syllabus of the course is given by the teacher, which includes information on the course content, expected learning outcomes, assessment and office hours</p>				
Bibliography	Lecture notes				
Assessment	Two or three intermediate exams and homework problems.				

Language	Greek
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