

**COURSE RECORD**

Code	<b>MSME 663</b>
Name	<b>Continuum Mechanics</b>
Hour per week	3 (3 + 0)
Credit	3
ECTS	7.5
Level/Year	Graduate
Type	Elective
Prerequisites	-
Description	The Continuum Mechanics course provides a comprehensive understanding of the principles governing the behavior of continuous media in engineering applications. It integrates theoretical concepts with practical applications, aiming to equip students with a profound knowledge of continuum mechanics and its relevance in solving complex engineering problems.
Objectives	Discussing the essential knowledge of tensor analysis. Analyzing seminal Works about the kinematic and stress notations in deformable bodies. Understanding of the essential balance principles in continuum thermodynamics. Evaluating on the foundational aspects of constitutive theory.
Learning Outcomes	<i>By the end of the course, the student will be able to</i> LO1. Identify the tensor analysis in the context of continuum mechanics. LO2. Apply the kinematical and stress concepts in deformable bodies. LO3. Apply essential balance principles to deformable continua. LO4. Develop constitutive models for deformable continua under various loading conditions.

**CONTRIBUTION TO PROGRAMME OUTCOMES\***

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
LO1	4	5	5	5	5	5	3	3	4	4
LO2	0	0	5	5	4	4	0	3	0	4
LO3	0	0	5	5	4	4	0	3	0	4
LO4	4	5	5	5	5	5	5	5	5	5

\* Contribution Level: 0: None, 1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High

**COURSE CONTENT DETAILS**

<b>Topics</b>	<b>Outcomes</b>
Introductions, basic concepts of continuum mechanics	LO1
Vector and tensor analysis	LO2, LO3, LO4
Continuum kinematics	LO2
Stress	LO3
Balance laws	LO4
Fundamental principles of constitutive theories	LO4

**DERS BİLGİLERİ**

Kodu	<b>MSME 663</b>
İsmi	<b>Sürekli Ortam Mekaniği</b>
Haftalık Saati	3 (3 + 0)
Kredi	3
AKTS	7.5
Seviye/Yıl	Lisansüstü
Dersin Dili	İngilizce
Tip	Seçmeli
Ön Şart	-
İçerik	Sürekli Ortam Mekaniği dersi, mühendislik uygulamalarındaki sürekli ortamın davranışını belirleyen ilkelerin kapsamlı bir şekilde anlaşılmasını sağlar. Teorik kavramları pratik uygulamalarla birleştirerek öğrencilere sürekli ortamlar mekaniği ve bunun karmaşık mühendislik problemlerinin çözümündeki önemi hakkında derinlemesine bilgi kazandırmayı amaçlamaktadır.