MA 544- Theory of Elasticity

Course Code:	MA-544
UTAA Credit (Theoretical-Laboratory hours/week):	3(3-0)
ECTS Credit:	6.0
Department:	Mechanical and Aeronautical Engineering
Language of Instruction:	English
Level of Study:	Graduate
Offered Semester:	Fall and Spring Semesters.

Course Objectives

Indicial notation and Cartesian tensor analysis. Analysis of stress. Analysis of deformation. Constitutive equations. Two-dimensional elasticity. Airy stress function. Analytical solutions for various plane elasticity problems. Torsion of prismatic bars.

C**ourse Content**

To introduce theoretical fundamentals of theory of elasticity.

To improve the ability to use the principles of theory of elasticity in engineering problems

Course Learning Outcomes

1-Indicial notation and Cartesian tensor analysis

2-Analysis of stress and deformation

3-Basic field equations of linear elastic solids

4-Formulations and solution strategies of various boundary value problems