

Fatigue and Fracture Mechanics

Course Code:

ME 444

Course Type:

Area Elective

Credits:

3

Theoric:

3

Practice:

0

Laboratory Hour:

0

ECTS:

5

Prerequisite Courses:

Strength of Materials [1]

Course Language:

English

Course Content:

Mechanisms of fracture, cleavage fracture, ductile fracture. Linear elastic fracture mechanics, crack tip plastic zone. Fatigue crack initiation; stress-life and strain-life approaches to fatigue analysis. Fatigue crack growth and fracture mechanics approach to fatigue analysis. Applications, damage tolerance, fail-safe and safe-life approaches to fatigue life estimation, applications in aeronautical industry. Considerations in design.