

Year & Sem:	Course Code:	Course Name: Bio Mechanics	No. of Credits: 4	L	T&PS	P
				2	2	0

Introduction: What is Biomechanics, History, Perspectives in Biomechanics; Rigid Body BioMechanics; Anatomical Concepts in Biomechanics.

Material Characterization of Tissues: Classification of Tissues, Properties of Tissues from Mechanics Point of View, Modeling of Tissues.

Mechanics of Skeletal Muscles: Skeletal Muscles as Elastic fibres in one dimension, Viscous behavior, Non-linear viscoelasticity; Continuum Mechanics Concepts in Modeling of large deformation; Stress in three-dimensional continuous media.

Motion: The time as an extra dimension; Deformation and rotation, deformation rate and spin; Constitutive modeling of solids and fluids.

Cardiovascular Mechanics: Cardiovascular Physiology, Blood Flow Models, Blood Vessel Mechanics, Heart Valve Dynamics, Prosthetic Valve Dynamics.

References/Text Books:

1. Biomechanics, by Fung C.
2. Basic Biomechanics by Hall et.al.

Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations.

Video Lectures (Web Links):

- 1.
- 2.

Study Materials (Web Links):

- 1.
- 2.

Problems & Solutions (Web Links):

- 1.
- 2.

Assignments (Web Links):

- 1.
- 2.