

Biostructures

Academic Year: (2020 / 2021)

Review date: 10-04-2019

Department assigned to the subject: Continuum Mechanics and Structural Analysis Department

Coordinating teacher: GARCIA GONZALEZ, DANIEL

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Linear Algebra
Calculus I, Calculus II, Calculus III
Mechanics of Structures
Elasticity and Strength of Materials

OBJECTIVES

Tensorial calculus
Solid mechanics formulation for finite (large) deformations
Development of constitutive equations to describe the mechanical behaviour of biological tissues
Application of solid mechanics theories to real problems in bioengineering

DESCRIPTION OF CONTENTS: PROGRAMME

Fundamentals of tensorial algebra
Kinematics of deformable solid: finite (large) deformations
Stress measurements
Balance equations: Lagrangian and Eulerian descriptions
Constitutive equations for biological solids
Applications to engineering problems: biostructures