

Biostructures

Academic Year: (2022 / 2023)

Review date: 20-06-2021

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

ASSESSMENT SYSTEM

Continuum assessment system based on reports, class participation and skills and knowledge tests.

A minimum grade of 4.5 in the final exam (either ordinary or extraordinary exams) is required to take into account the continuum assessment.

% end-of-term-examination:	60
% of continuous assessment (assignments, laboratory, practicals...):	40