



UNIVERSIDADE FEDERAL DE SÃO CARLOS
PRÓ – REITORIA DE PÓS-GRADUAÇÃO

COURSE DESCRIPTION SHEET



1. Course Name: **Introduction to Mechanics of Materials**
2. Course Code: 208
3. Semester offered: 2nd
4. Total course credits: 5
5. Course workload
 - 5.1. Lecture classes: 45h
 - 5.2. Practical classes:
 - 5.3. Seminars: 30h
6. Course Syllabus:
 - Concept of continuous medium, displacement and deformation, definition of stress, plane states of stress and strain, constitutive equations and linear-elastic behavior, creep criteria, plasticity and large deformations, plastic deformation in polycrystalline materials, deformations in non-crystalline solids, deformations in composites, fracture mechanics and resistance mechanisms.
7. Main Bibliography:
 - Roesler, J.; Harders, H.; Baeker, M. (2007) Mechanical Behaviour of Engineering Materials, Springer
 - Courtney, T.H. (2007) Mechanical Behaviour of Materials, Waveland Press
 - Anton, H.; Rorres, C. (2001) Álgebra Linear com aplicações, 8^a ed., Bookman, Porto Alegre.
 - Coimbra, L.A. (1978) Lições de Mecânica do Contínuo, Ed Edgar Blücher.
 - Coimbra, L.A. (1985) Lições e Exercícios de Álgebra, Análise e Cinemática do Contínuo, COPPE-UFRJ.
 - Sánchez, E. (2007) Tensores, Ed. Interciência, Rio de Janeiro.
 - Sánchez, E. (2000) Elementos de Mecânica dos Sólidos, Ed. Interciência, Rio de Janeiro
 - Mase, G.E. (1970) Continuum Mechanics, Shaum's Outlines, McGraw Hill, USA.
 - Malvern, L.E. (1969) Introduction to the Mechanics of a Continuous Media, Prentice-Hall.
 - Spencer, A.J.M. (1980) Continuum Mechanics, Longman