Course Syllabus

Department/Faculty
School of Engineering

Graduate Program
Materials Engineering and Nanotechnology

Degree
☒ Academic Master's ☒ Doctorate (PhD) ☐ Professional Master's

Course Name
Carbon Nanomaterials

Professor(s)

Prof. Sergio Humberto Domingues, PhD.

Office hours
48

Course Overview
Nanomaterials science based on allotropic carbon forms (fullerenes, nanotubes, graphene - in their different forms - and their nanocomposites).

Topics outline

Epistemological, chemical and physico-chemical fundamentals in relation to nanomaterials, synthesis route, characterization techniques and applications. History of carbon nanomaterials; Fullerene, Nanotubes and Graphene; Solid state chemistry concepts; Reactivity in carbon nanomaterials, band theory; Applications of carbon nanomaterials; Chemical/electrochemical sensors, catalysts, conductive films, supercapacitors.

Letter Grade Assignment
Grade A (Excellent) - Grade points between 9 and 10
Grade B (Good) - Grade points between 8 and 8.9
Grade C (Satisfactory) - Grade points between 7 and 7.9
Grade D (Unsatisfactory) - Grade points between 0 and 6.9

Texts, Materials, and supplies
SHRIVER, D. F.; ATKINS, P. W.; Química Inorgânica 4ª Ed. Bookman, 2008.
PETER J. F. HARRIS; Carbon Nanotube Science: Synthesis, properties and applications Cambridge Univ. Press, 2009.
RAO C. N. R.; SOOD A. K.; Graphene: Synthesis, Properties and Phenomena Wiley-VCH, 2012.
GOGOTSI Y.; PRESSER V.; Carbon Nanomaterials, Second Edition (Advanced Materials and Technologies) CRC Press, 2013.
SHRIVER, D. F.; ATKINS, P. W.; Química Inorgânica 4ª Ed. Bookman, 2008.

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