Course Syllabus

Department/Faculty
School of Engineering

Graduate Program
Materials Engineering and Nanotechnology

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

Course Name
Nanomaterials and Nanotechnology

Professor(s)

Prof. Sergio Humberto Domingues, PhD.

Office hours
48

Course Overview
Physical, chemical and physico-chemical fundamentals in terms of structure, characterization and production of nanomaterials as well as their applications.

Topics outline

Introduction to Quantum Physics. Concepts and history of nanomaterials and nanotechnology. Physical chemistry of solid surfaces. Types and classification of nanomaterials. Nanometric scale manufacture. Characterization of nanomaterials. Properties of nanomaterials. Examples of nanomaterial applications.

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
VARADAN, V. K., PILLAI, A. S., MUKHERJI, D., DWIVEDI, M., CHEN, L. Nanoscience and Nanotechnology in Engineering. World Scientific, 2010.
CAO, G. Nanostructure and Nanomaterials: Synthesis, processing and applications. Imperial College Press, 2004.
RAMSDEN, J. Essentials of nanotechnology. Bookboon.com, 2009..
MURTY, B. S., SHANKAR, P., RAY, B., RATH, B. B., MURDAY, J. Textbook of Nanoscience and Nanotechnology. India, Springer, 2013.
NOUAILHAT, A. An Introduction to Nanoscience and Nanotechnology. London, Wiley, 2008.

Campus Higienópolis: *Rua da Consolação, 896 – Edifício João Calvino - 8º andar ● Consolação ● São Paulo - SP ● CEP 01302-907*
Tel. (11) 2114-8143 ● **www.mackenzie.br** ● **prpg.cgpos@mackenzie.br**