

Program: Chemistry (15025012071P6)

Course: NANOTECHNOLOGY

Code: PPGQU0063

Workload: 30 hours

Credits: 02

Syllabus:

Introduction to Nanoscience and Nanotechnology; Basic theory and physicochemical properties of nanomaterials: nanoparticles. Synthesis of nanomaterials. Characterization techniques of nanomaterials; Structure and properties of materials at the nanoscale; Development of new products, processes, or improvement of existing ones using nanotechnology; Nanomaterials: applications of nanomaterials; Nanotechnology for water treatment. Nanotechnology for the absorption of toxic gases. Nanotechnology for pollution sensors and detectors. Nanotechnology for pollution prevention; Technical-scientific production in nanotechnology;

Bibliography:

DURAN, N., MATTOSO, L. H., MORAIS, P. C. Nanotechnology – Introduction, preparation, and characterization of nanomaterials, examples of applications, São Paulo, Artliber, 2006.

GODDARD III, William A et al. Handbook of nanoscience, engineering, and technology. 2nd ed. Boca Raton (USA): CRC, 2007. ISBN 978-0-84937-563-7.

WIESNER, M.R. and BOTTERO, J.Y. Environmental Nanotechnology: Applications and Impacts of Nanomaterials. New York, McGraw-Hill, 2007.

SHATKIN, J.A. Nanotechnology: Health and Environmental Risks. CRC Press, 2008.

BUSNAINA, A. Nanomanufacturing Handbook. CRC Press, Massachusetts, 2007.