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:

Office hours:
48

Course Overview:

This course will cover topics related to the science of carbon nanomaterials (fullerenes, nanotubes, graphene and its derivatives), among others.

Topics outline:

- Epistemological, chemical, and physical foundations related to carbon nanomaterials;
- Properties of carbon nanomaterials;
- Production processes of different carbon nanomaterials;
- Applications of carbon nanomaterials.

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:

Basic Bibliography

JORIO, A.; DRESSELHAUS, G.; DRESSELHAUS, M. S.; *Carbon nanotubes: advanced topics in the synthesis, structure, properties, and applications*, Berlin: Springer, 2008.

KROTO, H. W.; WALTON, D. R. M.; *The fullerenes: new horizons for the chemistry, physics and astrophysics of carbon*, Cambridge: Cambridge University Press, 1997.

RAO C. N. R.; SOOD A. K.; *Graphene: Synthesis, Properties and Phenomena*, Weinheim: Wiley-VCH, 2012.

GOGOTSI Y.; PRESSER V.; *Carbon Nanomaterials, Second Edition (Advanced Materials and Technologies)*, Boca Raton: CRC Press, 2013.

Review articles

DONG, L.; YANG, J.; CHHOWALLA, M.; LOH, K. P., *Synthesis and reduction of large sized graphene oxide sheets*. Chemical Society Reviews 2017**,** *46* (23), 7306-7316.

MINERS, S. A.; RANCE, G. A.; KHLOBYSTOV, A. N., *Chemical reactions confined within carbon nanotubes*. Chemical Society Reviews 2016, 45 (17), 4727-4746.