Graduate Studies Form for Modules attached to Structured PhD and/or Research Masters Programmes	
Title	Nanobiomaterials
Credits (ECTS)	5
Module Places	20
Module Code:	CH508
Elective Places	20
Lecturer	Dr. Yury Rochev

Indicative Module Descriptor:

This module covers the fundamentals of nanobiomaterials.

In particular the course focuses on:

- Introduction to biomaterials
- Description of material science considerations for metals, polymers, ceramics and composites.
- Surface considerations, role of coatings and micro- and nano-scale patterning.
- Biomaterials characterisation across different length scales.
- Biocompatibility
- Design and material choice considerations for implant devices. Sterilisation.
- Biomaterials for replacement of skeletal hard tissues.
- Biomaterials for soft tissue and organ replacement.
- Biomaterials for therapeutic or diagnostic applications.
- Nanobiomaterials in drug delivery, biomimetics, & tissue engineering.
- Regulatory issues.

Indicative Learning Outcomes:

On successful completion of this module, students should be able to:

- Understand biological interactions of different materials.
- Explain the importance of nano-scale structures and surfaces on the biological interactions for different materials
- Develop applications of biomaterials with due recognition of the regulatory context.

Workload: *(specify or delete as appropriate)*

Class Contact (via e-learning)	18 lectures (9x 2 hour lectures) Beginning Feb 2nd 2012, videoconferencing Lectures Thursdays 3-5pm for 9 weeks, ends Mar29th, 2012
Workshop	2 tutorials: Monday, April 2nd, NUI Galway
Specified Assignment(s)	3 assessments Project: Report to be generated by student on application of course concepts to his/ her research project.
Autonomous Student Learning	Supplementary lecture material and other text and web references will be given.

Assessment(s)

Three questionnaires: MCQ at start of module – 0%; Quiz 1 at middle of module – 20%; Quiz 2 at end of module – 20% Project assignment / report	Type MCQ Quiz 1 Quiz 2 Report	% of marks 0% 20% 20% 60%	Timing Start Middle End After
Assessment will be by assignments & Report	**100%**		
Result	Pass / Fail		