MSc Biomaterials

A Taught Masters Course to provide cutting edge skills in Biomaterial Design, Manufacture, Characterization and Clinical Application

This MSc will enable you to increase knowledge and skills in the areas of specific materials design and testing for clinical application. Students will have the opportunity to take 120 taught credits with training in state of the art biomaterials design (ceramics, polymers, composites, hydrogels etc with information relating to biological assessment of these materials (e.g. stem cell response, ISO / FDA regulations). Students also have the opportunity to gain 60 credits through a specific research project where they will gain analytical skills and data processing skills relevant to biomaterials design / use.

Aims of the course:

To further students knowledge base in biomaterial structure, manufacture and use.
To develop students critical analysis of biomaterial development and methods of application.

For an informal discussion about your study options, call +44 (0)161 306 4826 or email pg-materials@manchester.ac.uk

The School of Materials at The University of Manchester is the largest school of Materials Engineering in Europe and offers an unrivalled breadth of taught and research programmes in Materials Science.

www.manchester.ac.uk/materials
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Who is this programme for?
Students from an engineering or medically-related background who wish to pursue a career in biomaterials.

Entry requirements
2:2 UK Honours degree or equivalent in any of the following: bioengineering, materials science, mechanical engineering, biomedical science, medicine, dentistry or equivalent relevant subject.

English Language
IELTS 6.5 with no subscore below 5.5 or equivalent. The University offers three, five and ten-week pre-sessional English language courses for students who need to improve their English to meet the minimum requirements.

Careers
The medical device industry is estimated to be increasing at a rate of ~15% per year (Grammenou, 2006). As such it is important to provide scientists that are equipped with the knowledge and skills for the workplace to advance this important clinical need.

How to apply
You can apply online now at: www.manchester.ac.uk/postgraduate/howtoapply

Contact us
For further information, you can email or call us: pg-materials@manchester.ac.uk +44 (0)161 306 4826

Programme Content
The full MSc programme is made up of seven taught units and a four month research project. The taught units are:

Research Methods (15 credits); Lectures and workshops detailing transferable skills such as project management, time management, essay writing, oral presentation.

Master Class (15 credits); Lectures specific to biomaterials design, characterization, manufacture and characterization. Lectures on use of stem cells with biomaterials and tissue engineering applications also included.

Structure & Mechanical Properties of Polymers (15 credits); Unit covers masters level detail of the relationships between polymer structure and properties.

Clinical Applications of Biomaterials (15 credits); lectures series detailing current clinical applications of biomaterials. The module also covers a case study exercise.

Advanced Composite Materials (15 credits); students will learn about composite material design and implementation for biomaterials.

Biomaterials Case Study (15 credits); Orientation meetings. Preparative directed reading, private study and preparation of oral presentation. Pre-tutorial meeting. Tutorial. Journal study of ‘Biomaterials’. Seminars on state of the art biomaterials research presented by invited internationally renowned speakers.

Nanomaterials (15 credits); lecture series on nanomaterials manufacture, characterization and use as biomaterials.

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