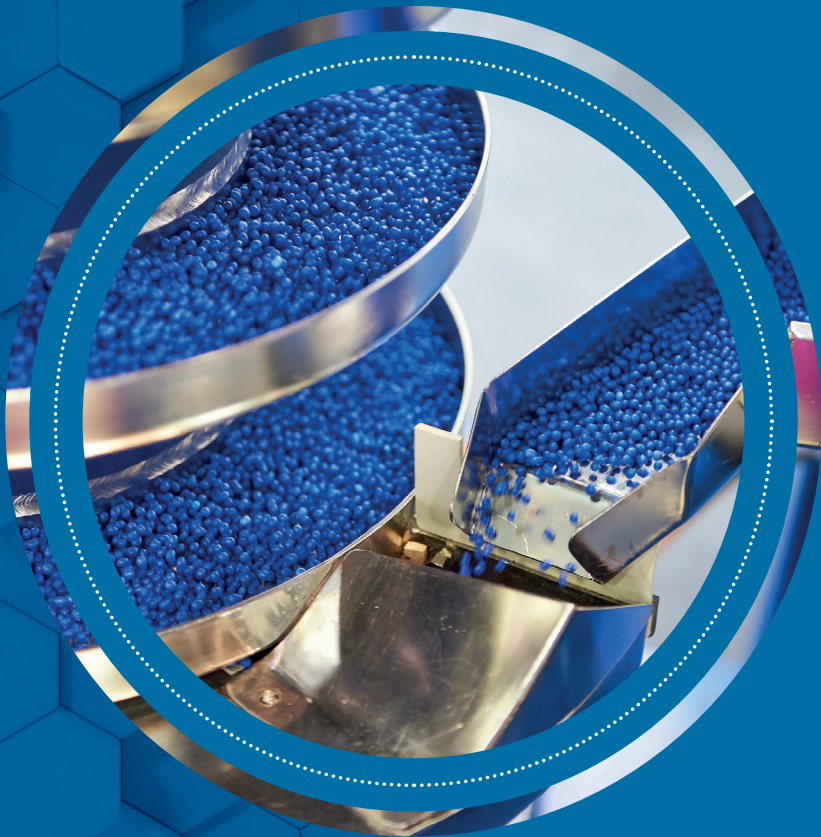


Polymers

SCIENCE, ENGINEERING & APPLICATIONS



MONDAY 18 FEBRUARY TO FRIDAY 22 FEBRUARY 2019

WHO SHOULD ATTEND?

This course is designed for scientists and technologists in the manufacturing industries, graduates undertaking research and development in academic institutions or research organisations and MSc students. It will serve as an introduction or an update. No specific previous qualifications will be assumed but the level is set to appeal to those of graduate status with some industrial experience.

THE COURSE

This intensive short course will be given over a period of five days and is designed to provide an analysis of the science and engineering of polymers, and an up-to-date appreciation of the development and application of polymers in engineering and other fields.

The emphasis will be on the newer and more advanced materials. The first part of the course will consist of an overview of the underlying science of polymeric materials and will provide a useful introduction to those new to the field (or a refresher for those who have been in it for some time). This will lead in to a detailed discussion of mechanical and

physical properties, processing of polymers, characterisation techniques, and development of different types of polymers including both common and advanced polymers.

There will also be lectures on some of the more important newer materials for structural, optoelectronic and biomedical applications, and the course will conclude with a discussion of trends of polymer utilisation in leading industries.

OUTLINE OF THE COURSE

- Introduction
- Synthesis of Polymers
- The Amorphous State
- The Crystalline State
- Mechanical Behaviour
- Thermoplastics
- Thermosets
- Elastomers
- Chemical Characterisation
- Physical Characterisation
- Toughness and Toughening Mechanisms in Polymers
- Design with Polymers
- Plastics Processing Review
- Advanced Processing Techniques
- Adhesives and Coatings

- Polymer Blends and Alloys
- Conjugated Polymers for Optoelectronic Applications
- Degradation of polymers
- Polymers in MicroElectronics
- Polymers in Automotive Applications
- Recycling of Polymers

MSC IN ADVANCED MATERIALS

This short course is offered as a module in our part-time or full-time Modular MSc Programme in Advanced Materials. Further details of our programme can be found on our web pages:

surrey.ac.uk/postgraduate/advanced-materials-msc-2018

COURSE DIRECTOR

The Course Director is Dr Tina Lekakou
surrey.ac.uk/people/constantina-tina-lekakou

Dr Lekakou will be joined by colleagues from across the University of Surrey's materials activity.

These short courses have been approved for "Professional Development" by IOM3 (Institute of Materials, Minerals and Mining).

CENTRE FOR ENGINEERING MATERIALS

The course is delivered from the Centre for Engineering Materials, home to the biggest concentration of materials researchers at Surrey with interests spanning all materials groups from the nanoscale through to macroscopic engineering structures. Across the University there are over 50 academics, residing in six engineering/ physical science departments, for whom materials is a primary research interest:

surrey.ac.uk/centre-engineering-materials

The research, which is recognised as being internationally excellent, spans topics as diverse as the production of graphene through to the mechanical testing of metre long sections of Victorian water mains. Much of the work is underpinned by the University's world-leading capability in characterisation, which comprises both facilities and expertise. Further, Surrey has a history of working in partnership with industry and a proven track record in delivering academically acclaimed and industrially relevant postgraduate courses.

The University is also home to the thriving, much-admired Engineering and Physical Sciences Research Council (EPSRC) Centre for Doctoral Training in Micro and NanoMaterials and Technologies which was established in 2009, and subsequently refunded in 2014, with awards amounting to over £9 million from the EPSRC and sponsorship of engineering doctorate students from over forty companies, to date:

surrey.ac.uk/minmat

KEY POINTS

For course calendar and online registration:
surrey.ac.uk/department-mechanical-engineering-sciences/short-courses

If you have a question please call:
+44 (0)1483 686122

Courses run for one week from Monday morning to Friday afternoon.

Delegates may request a list of local accommodation





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The Institute of Materials,
Minerals and Mining

ACCREDITED PROGRAMME

Polymers: Science, Engineering & Applications is also part of the
Advanced Materials MSc programme which is accredited by IOM3

We've made all reasonable efforts to ensure that the information in this publication was correct at the time of going to print in September 2018, but we can't accept any liability for any inaccuracies in the information published, and the information might change from time to time without notice. For the latest and most up-to-date information, please visit our website at surrey.ac.uk