

## Course Specification

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Status:	Validated

## Core Information

Awarding Body / Institution:	University of Wolverhampton		
School / Institute:	School of Engineering		
Course Code(s):	MA013P01UV MA013P31UV	Full-time Part-time	12 Months 2 Years
UCAS Code:			
Course Title:	MSc Advanced Technology Management (Sustainability)		
Hierarchy of Awards:	Master of Science Advanced Technology Management (Sustainability) Postgraduate Diploma Advanced Technology Management (Sustainability) Postgraduate Certificate Advanced Technology Management (Sustainability) University Statement of Credit University Statement of Credit		
Language of Study:	English		
Date of DAG approval:	01/Jun/2017		
Last Review:	2014/5		
Course Specification valid from:	2014/5		
Course Specification valid to:	2020/1		

## Academic Staff

Course Leader:	Mr Iain Lyall
Head of Department:	Dr Aman Dhir

# Course Information

<b>Location of Delivery:</b>	University of Wolverhampton
<b>Category of Partnership:</b>	Not delivered in partnership
<b>Teaching Institution:</b>	University of Wolverhampton
<b>Open / Closed Course:</b>	This course is open to all suitably qualified candidates.

## Entry Requirements:

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Entry requirements are subject to regular review. The entry requirements applicable to a particular academic year will be published on the University website (and externally as appropriate e.g. UCAS)

A lower second honours degree or equivalent in related subject is required for direct entry onto this Master's programme.

or

A Postgraduate Certificate in a related subject or equivalent with a minimum of grade C in all modules.

For entry onto the Postgraduate Certificate programme

(Completion of which, with a minimum of grade C in all modules, will allow a student to progress to the Master's programme)

A pass at degree level.

Students are selected using application form and references in the first instance and may be invited for interview.

Students applying for individual modules will be required to demonstrate the ability to absorb technical concepts and detail, possibly by way of their previous industrial or commercial experience.

Minimum English competency is the standard MSc entry: IELTS 6.0 or equivalent.

## Distinctive Features of the Course:

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This course will allow you to study the product life cycle management with an aim to design robust products / processes cost effectively while minimising overall carbon footprint and environmental impact. You will be able to explore the role/prospects that current (solar, wind, biomass, hydro power, geothermal and biofuels) and new (i.e. smart grids) technologies can play in overcoming the impacts associated with conventional energy sources (fossil fuel and nuclear) and energy distribution, supply and storage.

## Educational Aims of the Course:

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Modern industry operates within a highly competitive global market, the adoption, exploration and management of technology across design, manufacture and operational delivery of engineering services is at the forefront of providing successful business, with the competitive edge needed to survive and grow. In addition society is demanding that such business enterprises become ever more proactive in terms of sustainability, energy efficiency and the adoption of a social conscious across their business strategies and operations.

This course aims to develop your knowledge and understanding of modern, sustainable, technologies in terms of product development, optimisation, manufacture and energy supply and distribution. You will gain a comprehensive understanding of how various IT-based tools and systems function while also gaining insights

into how these are effectively implemented within the commercial, manufacturing and industrial sectors. You will be equipped to undertake cross-functional management roles and to evaluate how modern organisations can strategically exploit existing and emerging technologies, in both a broad sense, but also to acknowledge their role in improved sustainability. This reflects the growing demand for specialists with advanced skills and knowledge to drive forward effective new product development and subsequent introduction across all of the major industrial sectors. This is to include automotive, aerospace, general manufacture and energy supply.

#### Intakes:

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September

#### Major Source of Funding:

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Office for Students (OFS)

#### Tuition Fees:

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Tuition fees are reviewed on an annual basis. The fees applicable to a particular academic year will be published on the University website.

Year	Status	Mode	Amount
2021/2	H	Full Time	£6550.00
2021/2	Overseas	Full Time	£13950.00
2021/2	H	31	£3275.00
2022/3	H	Full Time	£7995.00
2022/3	Overseas	Full Time	£14450.00
2022/3	H	31	£3998.00

#### PSRB:

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MA013P01UV (Full-time)

Professional Accreditation Body:  
Institution of Mechanical Engineers (IMechE)

Accrediting Body:  
Institution of Mechanical Engineers (IMechE)

Accreditation Statement:  
Accredited by the Institution of Mechanical Engineers (IMechE) on behalf of the Engineering Council for the purposes of partially meeting the academic requirement for registration as a Chartered Engineer.

Approved	Start	Expected End	Renewal
18/Jan/2023	01/Sep/2017	01/Sep/2024	

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MA013P31UV (Part-time)

Professional Accreditation Body:  
Institution of Mechanical Engineers (IMechE)

Accrediting Body:  
Institution of Mechanical Engineers (IMechE)

#### Accreditation Statement:

Accredited by the Institution of Mechanical Engineers (IMechE) on behalf of the Engineering Council for the purposes of partially meeting the academic requirement for registration as a Chartered Engineer.

Approved	Start	Expected End	Renewal
18/Jan/2023	01/Sep/2017	01/Sep/2024	

#### Course Structure:

Please note: Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, to create the best learning experience.

## Learning, Teaching and Assessment

#### Academic Regulations Exemption:

#### Reference Points:

Faculty of Science and Engineering E&D policy, 2010

Equality Act 2010

Institute of Engineering Designers. Product Design Specific Learning Outcomes (2009)

QAA subject benchmark – Masters Level - Engineering (2010)

FHEQ England, Wales and Northern Ireland (August 2008)

Descriptor for a higher education qualification at level 7: Master's degree.

#### Overview of Assessment:

As part of the course approval process, the course learning outcomes were mapped to each of the modules forming the diet of the programme of study. This process confirmed that all course learning outcomes can be met through successful completion of the modules. This mapping applies to the final award as well as to all of the intermediate awards.

Learning Outcomes	Modules
PGCERT01 Demonstrate a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of your academic discipline, field of study or area of professional practice with a conceptual understanding that enables the student: - to evaluate critically current research and advanced scholarship in the discipline. - to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses.	
PGCERT02 Demonstrate a comprehensive understanding of techniques applicable to your own research or advanced scholarship and ability to continue to advance your knowledge and understanding, and to develop new skills to a high level.	
PGCERT03 Demonstrate originality in the application of knowledge, together with a practical understanding of how	

**PGCERT04** Ability to deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate your conclusions clearly to specialist and non-specialist audiences.

**PGCERT05** Demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level.

**PGCERT06** Demonstrate the qualities and transferable skills necessary for employment requiring: - the exercise of initiative and personal responsibility decision-making in complex and unpredictable situations. - the independent learning ability required for continuing professional development.

**PGDIP01** Demonstrate a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of your academic discipline, field of study or area of professional practice with a conceptual understanding that enables the student: - to evaluate critically current research and advanced scholarship in the discipline. - to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses.

**PGDIP02** Demonstrate a comprehensive understanding of techniques applicable to your own research or advanced scholarship and ability to continue to advance your knowledge and understanding, and to develop new skills to a high level.

**PGDIP03** Demonstrate originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline.

**PGDIP04** Ability to deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate your conclusions clearly to specialist and non-specialist audiences.

**PGDIP05** Demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level.

**PGDIP06** Demonstrate the qualities and transferable skills necessary for employment requiring: - the exercise of initiative and personal responsibility decision-making in complex and unpredictable situations. - the independent learning ability required for continuing professional development.

**MA01** Develop novel strategies for the management and deployment of advanced and emerging technologies, techniques and sustainable energy policy decisions for a range of engineering applications.

**MA02** Select and apply appropriate industry standard computer aided engineering tools and analysis methods to model, analyse and evaluate engineering systems.

**MA03** Apply knowledge to create original concepts for products, engineering systems or processes.

**MA04** Make use of high level skills and abilities to exploit generic and bespoke software tools, solve complex design, configuration or process problems and thereby develop industrially appropriate solutions for delivery to a range of

audiences	Learning Outcomes	Modules
	<p><b>MA05</b> Evaluate and critically appraise current research and scholarship within the general areas of Sustainability and Life Cycle Management (including energy production and distribution), Emerging Design Tools, New Product Development and Introduction, Project Management and apply to typical scenario based engineering challenges.</p>	
	<p><b>MA06</b> Establish a deep understanding of how smart use either analogue or digital information and communications technology to gather and process data, in order to and on the resultant information, such as information about the behaviours of suppliers and consumers, in an automated manner to improve the efficiency, reliability, economics, and sustainability of the production and distribution of electricity.</p>	

## Teaching, Learning and Assessment:

You will have the opportunity to engage with a range of learning approaches during the course of your study.

You will take part in lectures and seminars. Some of these will be more traditional whereas others will require you to undertake research before coming together to discuss technical issues with a range of students and academic staff. You will have seminars from industry practitioners and have the opportunity to discuss your projects with them to gain real world insight into the problems you are trying to solve.

You will have the opportunity to work in a range of dedicated facilities such as the Prototyping and Visualisation Laboratories to develop practical skills and understand the link between the theory and practical implementation of integrated CAD, Simulation and Rapid Prototype Manufacture. Throughout the weekly class sessions and through use of the on-line support material, you will obtain skills required to successfully implement and manage a range of modern manufacturing systems, processes and methodologies.

Often working on assessment and project briefs specified by industry practitioners, you will develop solutions to meet real world problems/requirements and be able to present these to your peers, practitioners and third parties in order to obtain balanced and current feedback.

## Assessment Methods:

At the University of Wolverhampton, a variety of modes of assessment will be used to support and test your learning and progress and to help you develop capabilities that are valued beyond your University studies and into your working life. Your course may include a variety of assessment activities:

Written examinations (including online examinations, open and closed book examinations and quizzes)  
Coursework (for example, essays, reports, portfolios, project proposals and briefs, CVs, poster presentation)  
Practical (for example, oral and video presentations, laboratory work, performances, practical skills assessment)

In the final year of your undergraduate degree, and at the end of your postgraduate degree, you are likely to be expected to write an extended piece of work or research, such as a dissertation or a practice-based piece of research.

## Student Support:

### Course support:

At the start of your course you will be assigned a Personal Tutor who will guide you through the induction process and provide support and academic counselling throughout your course on an appointment basis. They should be able to offer you advice and guidance to help you liaise with other staff and support facilities in the School and University. The Student Support Advisers (SSA) provides academic counselling and will be

accessible throughout the week on a drop-in or appointment basis to discuss timetables, requests for extensions, requests for extenuating circumstances, general concerns about study and student life and general programme planning. The SSA will act as a first point of contact in relation to leave of absence (including returning after leave), withdrawal, transferring to another course (internal and external) and changes to mode of attendance. Your Course Leader will be available thereafter for meetings by appointment to discuss leave of absence, withdrawal, transferring to another course (internal and external), changes to mode of attendance, returning after leave of absence and direct entrants.

#### Subject support:

Tutorials, workshops, seminars and meetings - provide the primary opportunities for students to interact with staff on topics relating to modules. All modules provide at least one of these forms of face-to-face support.

Formative feedback - tutors provide personalised written feedback on most summative assessments. The mechanism for feedback from purely formative tasks varies between assessments, but will always be provided in some form. Online formative tasks often provide feedback straight away. On occasions tutors may provide generalised verbal feedback to the whole class on points relating to an assessment

Assessment and subject-based surgeries provide additional student support for subjects that students often need extra help with. They are often concentrated around the times when assessments take place. Revision sessions are provided for many modules that have exam-like tests and enable you to interact with tutors to review parts of the course. Mock exams and tests may provide opportunities to experience an examination environment before the final summative test and give you feedback on your understanding.

#### International Students:

The International Centre will provide pre and post entry visa and immigration support and advice on and arrange for the necessary paperwork to be submitted to UKBA. They will also provide appropriate University Induction support on arrival and be a point of contact for international students throughout their stay here. A range of social and cultural activities arranged by the International Centre will also promote the integration of international students into the whole of the University's learning community. English language support is also available through the international language centre in the University.

#### Employability in the Curriculum:

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The course is aimed at science and technology graduates who aspire to Engineering and Manufacturing management roles in leading industrial organisations with an emphasis on the role of sustainability and renewable energy production and delivery.

On completion of the programme, you can expect to develop your career towards senior management where strategic thinking skills, project management experience and deeper technological knowledge in the areas of advanced technology and sustainability and sustainable energy production would be beneficial.



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