LEEDS BECKETT UNIVERSITY

Course Specification

MSc Advanced Engineering Management

2018-19 (MSAEM)

www.leedsbeckett.ac.uk

LEEDS BECKETT UNIVERSITY

School of Computing, Creative Technologies and Engineering

Award and programme title: MSc Advanced Engineering Management

Level of qualification: Level 7

Interim awards available:

Award	Title	Level
PGDip	*Advanced Engineering Management*	7
PGCrt	*Advanced Engineering Management*	7

Length and status of programme and mode of study

Programme	**Length (years) Status (FT/PT/SW)**	**Mode (campus-based / DL or other)**
MSc Advanced Engineering Management	**12 months – September 15 months – January FT**	**Campus-based**
MSc Advanced Engineering Management	**24 months PT**	**Campus-based**

Course Specification

Overview and Aims

1.0 Introduction

The importance of Engineering within the global economy as a wealth creator rather than the continued reliance on financial services has been illustrated during the recent global

financial crisis. Other drivers include the diminishing supply of fossil fuel which will make the transport of goods over thousands of miles less attractive thus encouraging a resurgence of local manufacturing. Many of the new technologies and web based systems means that Engineering is going through its next industrial revolution. For example Web 2.0 applications have been embraced worldwide and communities have developed in many areas, not least the Engineering community. This has spawned the Factory 2.0 approach where individuals and small companies can become designers and manufacturers of bespoke or small batch sizes of products. These components can be designed, ordered and manufactured entirely online and then assembled, all in a lean and agile way. The community of Engineers is now poised to become a key force in contributing to the global economy. However how companies and individuals respond and engage with these continually changing technologies and how these systems can be effectively managed for maximum effect is also vital.

International

Currently our own University's International office has highlighted a demand for an Engineering post graduate award which they have identified via international conferences and recruitment fairs .They have received on average 50+ enquires for an Engineering course at masters level. The Faculty also has a number of top up degrees. This is another area of possible demand for this course.

Semester 1

- Eco Engineering
- Simulation and Modelling
- Project Management

Semester 2

- Engineering System Control
- Lean and Agile Engineering

Electives

- Intelligent Systems and Robotics
- Software and Systems
- Network & Convergence Architectures
- RoHS

Rationale

This award not only offers the chance for engineering students and employees to enhance their employability further, it also offers students from a computing background the chance to steer their skill set towards an industry where growth is predicted.

There has been a national debate on the dearth of manufacturing and engineering activity in the UK, resulting in a call to re-balance the national economy by growing these areas. At this point engineering employers struggle to recruit the necessary graduates, this situation is likely to be exacerbated if the desired growth develops. Leeds Met can play a part by offering programmes that can deliver post graduates.

Target Market

The major anticipated demand would be from those with responsibilities for Engineering provision and support, typically in small to medium enterprises, but also in larger organisations who aspire to career development through enhanced qualifications, and from those organisations that subcontract to larger businesses, and will be required to align their environmental strategies. These elements of further study allow for students to enhance their portfolios. Students with no formal academic background may also have the relevant experience and enthusiasm to complete the course. This would allow them a route into an alternate profession or perhaps a greater understanding and ultimately a foot up in their current professions.

Course Learning Outcomes

1	A systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of it at, or informed by, the forefront of the Engineering and Technology field of study and professional practice.
2	A comprehensive understanding of techniques applicable to their own research or advanced scholarship.
3	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 engineering domain.
4	Conceptual understanding that enables them to evaluate critically current research and advanced scholarship in the engineering and management field and evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses

Course Structure

	Level 7
	This course structure encourages students to explore the core themes of process control, management and research along with allowing them to choose from a selected number of electives. The course structure was strongly influenced by the CDT and external bodies.

This course will offer honours graduates in Engineering similar disciplines, or those with equivalent qualifications, an opportunity to pursue advanced study in the field of Engineering

The aims of the course are:

1.To expand students' existing knowledge of Engineering and Management in order to create a platform from which to launch directed research into the applicability, limitations and enhancements of current developments

2. To encourage students to design, specify and construct automation and management systems.

3.To engender a responsible, professional approach to the implementation of organisational changes brought about by the adoption of new technology.

Each module has 20 credits and the MSc requires a total of 180 credits (180 CATs) to successfully complete the awarded of masters.

Semester 1	Core (Y)	Semester 2	Core (Y)
Eco Engineering	Y	Engineering Systems Control	Y
Simulation and Modelling	Y	Lean and Agile Engineering	Y
Project Management	Y		
Research Practice	Y	Masters Final Project/Dissertation	Y
Semester 3		Electives • Intelligent Systems and Robotics • Software and Systems • Network & Convergence Architectures • RoHS	
Masters Final Project/Dissertation	Y		

Learning and Teaching

Details relating to contact hours and other key information sets (KIS) are available on the course page of our Online Prospectus on our website.

Learning and Teaching Approaches

The Course employs a wide range of learning opportunities and teaching methods, informed by curriculum review, research-based pedagogical approaches and continuous staff development. Innovative approaches to teaching, learning and assessment are encouraged.

The Course expands the application of technology in the delivery of teaching and learning support wherever appropriate.

Scheduled sessions will include the use of lectures, seminars, tutorials and practical laboratory sessions. Advantage will be taken of both technology and supportive activities to ensure that effective learning takes place. These activities will include the use of simulations, case studies, projects, practical work, work-based learning, formative face-to-face and online collaborative discussions and student-led learning.

The University's Virtual Learning Environment (University VLE) is at the heart of all modules. The faculty has moved beyond the use of the VLE as a repository and now the breadth of University VLE's provision is used in collaborative work, 24/7 access, innovative learning and assessment activities. Modules include the provision of formative feedback.

The Learning and Teaching strategy (http://www.leedsbeckett.ac.uk/staff/files/Postgraduate_course_development_principles.pdf) for this award is strongly student – centred and product driven. Our links to industry and professional bodies will inform our curriculum and a particular strength of this award will be the inclusion of practitioners to deliver / demonstrate real life solutions to address real-life problems. We will make use of our contacts with the developers of ICT environmental assessment software; and of industry and other groups active in the field to take part in appropriate presentations / discussions. We envisage a launch of this award through a suitably promoted external seminar, which – with an accompanying set of follow-up activities – will constitute one of the modules of the award. We would also envisage that many dissertation projects would address the students' own current place of work, develop Computer Systems Engineering products and systems for that workplace.

Learning and Teaching Activities

Students are supported within an inclusive learning environment, which recognise, accommodates and meets the learning needs of all our students.
For each module students will normally receive a weekly lecture followed by a tutorial or practical lab based session(s). These are supplemented with a programme of guest speakers and industry led seminars. In addition all staff provide weekly drop in slots for students who need personalised learning support.

The module materials and support provided will encourage deep learning the focus of which should support educational gain, as well as educational performance. Deep learning includes reflecting upon, synthesising, applying, critically evaluating and analysing, all an integral part of the course and its assessments. Challenging and industry related tasks will stretch students' capabilities and actively engage them in applying skills and knowledge in their future employment.

The course level assessment strategy will ensure not only support for the assessment of the course learning outcomes but will provide a balance of assessment methods enabling students to progressively develop expertise related to those assessment methods and to have opportunities to build on feedback.

Graduate Attributes (UG only)

N/A

Use of the Virtual Learning Environment

All modules make use of the university VLE – University VLE, with most making extensive use by including a range of learning, teaching and assessment resources including module and assessment guides and workbooks. Many provide additional support materials and self-assessment tests. Assessments are uploaded to the VLE for marking and feedback. Turnitin is used to detect possible plagiarism. Students receive their module marks via the VLE. Adobe Connect web conferencing software is used to offer additional support in some modules.

The course team will used the Universities VLE considerably,

• All assignments will be submitted via the VLE unless formally agreed with the Head of School. Feedback will be submitted to the VLE as well.

• All learning material (lecture slides, tutorial booklets, assignment briefs, marking criteria, example files etc) where possible will be available via the VLE.

• Discussion areas will be used to develop student's communication and critical thinking skills.

• Although currently no plans have been confirmed to use tools like quizzes, blogs, wiki's, pebblepad these tools are under constant review.

The course team is fortunate to have two academics that have completed an MSc in Blended and On line learning.

Use of Blended-Learning

All modules are repurposed to include extensive materials (online journals, lecture notes and videos) which provide the opportunity for students to work at their own pace without the need for extensive lecturer contact. Modules contain a range of e-learning resources including e-portfolios, and discussion boards.

Assessment Strategy

A variety of assessment methods are used to ensure students meet the course and module learning outcomes. These include a primary research (conducting an audit), written assignments, vivas, e-Portfolio, and presentations. Assessments are planned on an annual basis to mitigate against bunching.

The course is designed with strong career themes (management, planning, logistics, automation, environment, software for intelligent systems, kaizen champion, lean and agile) that run through the modules, assessment on modules within these themes builds on and reinforces previous study.

The need for students to develop employable skills such as formal report writing and presentations etc. is recognised as part of the assessment strategy.

Our Learning and Teaching Strategy is based on the Vision, Values and Strategic Themes set out in the Strategic Plan 2010 – 2015. Our vision is: "to be acknowledged for our commitment to student success, our innovation and enterprise, our global reach and strong local impact". Our Learning and Teaching Strategy is interrelated with our Widening Participation, Research and Enterprise, Schools' Partnership, Employability and Human Resource Strategies.

We are committed to the following values:

· **Inspiring** We share our values and ideas with passion, energy and commitment, supporting all to achieve their potential.
· **Creative** We stimulate innovation, imagination and discovery, generating challenging and original ideas.
· **Enterprising** We identify and maximise opportunities using our resources widely and building on our strengths.
· **Purposeful** We are clear as to our shared plan and committed to delivering this efficiently and effectively.
· **Respectful** We are inclusive, supportive and ethical in our behaviours and actively valuing diversity.
· **Professional** We expect and uphold high standards, leading by example with and responsibility.

Our University's assessment regulations are contained within the Academic Principles and Regulations (sections C3 and C4 in particular). The regulations are available at:
http://www.leedsbeckett.ac.uk/about/academic-regulations.htm

Feedback on Assessed Coursework

All modules provide plenty of feed forward and formative feedback opportunities. This allows students time to consolidate prior learning and to work unhindered on assessments; it also provides staff with the opportunity to meet with the students to review progress. Written feedback is given against assessment criteria and in many cases this is provided via the VLE.

Module Assessment Methods

Module Titles	***Core (Y)***	*Report*	*Exam*	*Oral / practical exam*	*Dissertation*	*Coursework*	Practical development work & report	*e-Portfolio*	*Presentation*

Eco Engineering	Y							100%	
Simulation and Modelling	Y		25%			75%			
Project Management	Y	50%	50%						
Research Practice	Y			20%		30%/50%			
Engineering Systems Control	Y							50%	50%
Lean and Agile Engineering	Y	80%							20%
Masters Final Project/Dissertation	Y			20%	80%				
Intelligent Systems and Robotics	N		60%			40%			
Software and Systems	N						100%		
Network & Convergence Architectures	N			30%		70%			
Restriction of Hazardous Substances	N							100%	

Employability and Professional Context

This course is of relevance to those currently in a junior management / higher technical role, who wish to progress their career by developing the Process Control, Automation and Management Systems within an organisation. The following is a list of positions they could assume after completing the course: , PLC programmers, Automation Consultants, Engineers/ Project Manager, Program Expert/Manager/ Engineer/ Strategist/Planner, QA/QC Specialist, Systems Engineer

In addition students are also encouraged to undertake projects or volunteering opportunities with outside organisations. Students are also encouraged to undertake projects for external clients where possible. The School is regularly approached by local recruitment agencies and local employers enquiring about suitable students.

Employability is enhanced through our contacts with industry and links to local employers. Additionally our Jobs and Careers Centre provide students with up-to-date knowledge and skills relevant to the needs of the sector.

The current financial climate is likely to encourage students to be more focussed on a future career path when choosing courses to study and whether to study at Post-Graduate level.

Work-Related Activities

N/A

Placement or Work-Related Activity Level:

N/A

Placement or Work-Related Activity Length in Weeks:

N/A

Type of Placement or Work-Related Activity:

N/A

Reference Points used in course design and delivery

All our courses leading to Leeds Beckett University awards have been designed and approved in accordance with UK and European quality standards. Our courses utilise the Frameworks for Higher Education Qualifications (FHEQ) and relevant subject benchmarks (where these are available) and professional, statutory and regulatory body requirements (for professionally accredited courses).

We review our courses annually and periodically, responding to student feedback and a range of information to enhance our courses. Our University is also subject to external review by the Quality Assurance Agency. Our latest report can be found on the QAA website at http://www.qaa.ac.uk/reviews-and-reports

We appoint External Examiners to verify that our University sets and maintains standards for awards which adhere to relevant national subject benchmark statements and the FHEQ (UK), ensure standards and student achievements are comparable with other Higher Education Institutions in the UK, with which they are familiar, and ensure that assessments measure achievement of course and module learning outcomes and reach the required standard. External Examiners may also provide feedback on areas of good practice or potential enhancement.

Student Support Network

If you have a question or a problem relating to your course, your Course Administrator is there to help you. Course Administrators works closely with academic staff and can make referrals to teaching staff or to specialist professional services as appropriate. They can give you a confirmation of attendance letter, and a transcript. You may also like to contact your Course Rep or the Students' Union Advice team for additional support with course-related questions.

If you have any questions about life at our University in general, call into or contact the Student Hub on either campus to speak to our Student Experience Team. This team, consisting of recent graduates and permanent staff, are available to support you throughout your time here. They will make sure you have access to and are aware of the support, specialist services, and opportunities our University provides. There is a Student Hub on the ground floor of the Rose Bowl at City Campus and one in Campus Central at Headingley. You can also find the team in the Gateway in the Leslie Silver Building at City Campus. The telephone number is 0113 812 3000, and the e-mail address is StudentHub@leedsbeckett.ac.uk.

Within MyBeckett you will see two tabs (Support and Opportunities) where you can find online information and resources for yourselves. The Support tab gives you access to details of services available to give you academic and personal support. These include Library Services, the Students' Union, Money advice, Disability advice and support, Wellbeing, International Student Services and Accommodation. There is also an A-Z of Support Services, and access to online appointments/ registration.

The Opportunities tab is the place to explore the options you have for jobs, work placements, volunteering, and a wide range of other opportunities. For example, you can find out here how to get help with your CV, prepare for an interview, get a part-time job or voluntary role, take part in an international project, or join societies closer to home.

Record of Enhancement

No.	Detail of modification (Provide a brief description of the modification and where the Course Specification has been updated)	Date Effective (Indicate the academic year of entry and course level(s) to which the modification will apply)
1	**Simulattion & Modelling - Change of assessment weighting detailed in Module Assessment Methods**	Sep-15
2	**Network & Convergence Architecture - Change of assessment weigting detailed in Module Assessment Methods**	Feb-16