



# MSc Engineering Management Programme Handbook



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Version 7

## Introduction to the Programme

Welcome to the MSc Engineering Management programme. This handbook provides you with information about the structure of your programme.

The programme is made up of the seven core modules listed in the table below. An outline of the content of each of the modules and the assessment methods used can be found in the Module Descriptor section of iLearn.

## MSc Engineering Management Modules

| Module Code | Module Title                           | Credits | Module Type (Core/Option) |
|-------------|--|---------|---------------------------|
| BUS7005     | Operations and Supply Chain Management | 20      | Core                      |
| PRM7001     | Project Management Techniques          | 20      | Core                      |
| PRM7005     | Sustainability in Theory and Practice  | 20      | Core                      |
| BUS7006     | Risk Management and Innovation         | 20      | Core                      |
| BUS7007     | Quality Management                     | 20      | Core                      |
| DAT7001     | Data Handling and Decision Making      | 20      | Core                      |
| RES7001     | Research Project                       | 60      | Core                      |

Please note that modules may not be delivered in this order; please refer to your course timetable.

## Pace of Study

### Student Loans Company Funded Students

If you have been granted a postgraduate loan from the Student Loans Company, you must progress at an appropriate pace to complete within two years. Arden University is required to make annual reports to the Student Loans Company regarding your progress. If you fall behind, or if you decide you would prefer to study at a slower pace, you may transfer to the Flexible Distance Learning route (see below). However, if you transfer to the more flexible route, you will not be eligible for any continued loan payments from the Student Loans Company.

### Flexible Distance Learning Students

If you have chosen the flexible distance learning route and have not received a postgraduate loan from the Student Loans Company, you have the flexibility to plan your own pace of study. Postgraduate degrees usually take around two to three years to complete depending on how many modules you study each year. In order to achieve this, it is recommended that you aim to complete at least 60 credits each year, equivalent to three 20-credit modules. You will have a maximum of five years to complete the programme (from the date you first started).

### Full Time Distance Learning Students

If you are a full-time distance learning student, you will study at a prescribed pace to ensure that you complete on time. You will study two modules per quarter and will be working on your dissertation at the same time, with the final quarter to complete the dissertation, allowing you to complete the whole degree in 12 months.

## Arden University Assessment Regulations

Students will be assessed in accordance with the standard Arden University assessment regulations which can be found on the Arden University website <http://arden.ac.uk/>

### **What is CMI?**

CMI is *The Chartered Management Institute* and is an awarding body that delivers qualifications for managers. They are the only chartered professional body dedicated to promoting the highest standards in management and leadership excellence. CMI offers practical, proven solutions for individual managers, employers, and education providers alike. Their mandate is to create better led and managed organisations.

### **What does the student need to do?**

Once the student has enrolled onto the BA (Hons) Business programme and completed the induction, Arden University will register their membership with the CMI. This will provide the student with a wide range of resources that may help them during their studies. CMI offers practical help, fast advice, new ways to learn, handy tools and techniques, regular newsletters, access to events, and mentoring services. Once the student has completed the programme, they will receive a Diploma at the relevant level, which is a qualification that is valued by employers making them more marketable.



### PROGRAMME SPECIFICATION

|  |   |
|--|---|
| <b>1. Target Award</b>   | MSc   |
| <b>2. Programme Title</b>  | MSc Engineering Management  |
| <b>3. Exit Awards</b>  | PG Diploma in Engineering Management<br>PG Certificate in Engineering Management                          |
| <b>4. Programme Leader(s)</b>                                    | Matthew Cooper  |
| <b>5. Delivery Model</b>   | Online P/T and F/T (Full-time approved by Academic Board, 17 <sup>th</sup> June 2020)<br>Blended Learning |
| <b>6. Start date</b>   | October 2016  |
| <b>7. Programme Accredited by (PSRB or other, if applicable)</b> | CMI   |
| <b>8. UCAS Code (If applicable)</b>                              |   |
| <b>9. Relevant QAA subject benchmark statement</b>               | QAA Master's Degree General Characteristics Sept 2015   |

|  |                           |                       |                  |                     |
|--|---------------------------|-----------------------|------------------|---------------------|
| <b>10. Programme Aims</b>  |                           |                       |                  |                     |
| <p>The aim of the Arden University MSc Engineering Management programme is to provide a distinctive, inter-disciplinary and integrative educational programme aimed primarily at individuals who are qualified engineers desirous of entering management roles. The programme is designed to expose programme participants to a range of relevant topics relating to management within an engineering context.</p> <p>Online teaching materials are derived from established academic research in order to develop critical powers of analysis, reflection and the further development of interpersonal skills in preparation for management roles.</p> <p>Programme participants will build on their existing understanding of the management of engineering projects and organisations in a way that allows them to relate this to a range of contemporary management ideas and practice within a global context. This is achieved through critical thinking, creativity and personal development.</p> <p>In particular, the purpose of the programme is to provide programme participants with:</p> <ul style="list-style-type: none"> <li>A critical and detailed understanding of a range of management topics relevant to managers in engineering contexts</li> <li>An advanced understanding of elements of management within a global context;</li> <li>The opportunity to complete a detailed piece of research relating to a management issue within an organisation;</li> <li>An ability to apply knowledge and understanding of business and management to complex issues, both systematically and creatively, to improve business and management practice;</li> <li>A stimulating online academic environment, which is based upon the values of academic openness and critical appraisal.</li> </ul> <p><b>Arden Values Mapping:</b> the table below identifies how programme outcomes (listed within section 11) meet provide for full coverage of Arden University Values.</p> |                           |                       |                  |                     |
|  | Knowledge & Understanding | Intellectual Thinking | Practical Skills | Transferable Skills |

|  |                       |        |    |    |    |
|--|-----------------------|--------|----|----|----|
|  | We Support People     |        | B2 | C1 | D5 |
|  | We Do the Right Thing | A2     | B2 | C2 | D2 |
|  | We Innovate           |        | B3 |    | D4 |
|  | We Take Ownership     | A4, A5 | B2 |    | D1 |

11. Intended programme learning outcomes and the means by which they are achieved and demonstrated

MSc (180 credits)

| <b>11a. Knowledge and understanding</b>   | <b>The means by which these outcomes are achieved</b>  | <b>The means by which these outcomes are demonstrated</b>   |
|---|--|---|
| <p>A1 Apply and synthesise knowledge and understanding relevant to the management of engineering projects within an organisation</p> <p>A2 - Advise an organisation on appropriate and ethical strategies to assist their management of engineering projects and activities</p> <p>A3 – Critically analyse the context in which an organisation operates, and understand the impact that this may have on engineering management activities</p> <p>A4 - Demonstrate a critical understanding of current</p> | <p>Learning and Teaching methods and strategy:</p> <p>Acquisition of knowledge and understanding (A1 – A5) at all levels is through an integrated learning and teaching pedagogy that includes both asynchronous and synchronous activity. That is:</p> <p>Asynchronous</p> <p>Independent and directed student study, supported throughout by comprehensive online multi-media teaching materials and resources accesses through our VLE</p> <p>Guided group / project-based work</p> | <p>Knowledge and understanding are assessed through in-module assessments of portfolio submissions, presentations, time-constrained examinations, and report-based assignments.</p> <p>Formative assessments are the precursor to the summative assessments. Appropriate and diverse formative assessments are provided for students and are communicated to them via a clear overview to be found in the assessment brief for each module.</p> |

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| <p>thinking and research in a range of strategic management topics relevant to engineering projects and activities</p> <p>A5 – Critically evaluate the role of data handling and decision making in the management of engineering projects.</p> | <p>Discussion forums where students discuss and critically engage with themes emerging from the materials they engage with, following the posing of questions or propositions, case studies or similar by either tutor or students themselves</p> <p>Podcasts and narrated PowerPoint's</p> <p>Synchronous</p> <p>Online seminars facilitated by VOIP's where theory and practice are integrated.</p> <p>Live chats</p> <p>Based upon the profile of our typical student body, our strategy enables students to engage with a variety of learning tools that best meet their learning styles, overall objectives and personal circumstances.</p> <p>Independent study is the cornerstone of the learner experience supported by engagement with the specialist tutor and peer engagement.</p> <p>There is a requirement for written work at all levels including reports, essays, practical tasks, developed targeted plans etc., and our formative assessment policy informs how feedback is supplied by tutors at the draft assessment phase.</p> |  |
| <p><b>11b. Intellectual (thinking) skills</b></p>   | <p><b>The means by which these outcomes are achieved</b></p>  | <p><b>The means by which these outcomes are demonstrated</b></p> |

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| <p>B1 – To apply and where appropriate synthesise models and theories to meet the needs of a range of situations of different complexity, with the outcome of giving high quality effective and realistic advice.</p> <p>B2 - Undertake innovative and ethical research on a management topic relevant to the work of a manager within an engineering context and report the research with appropriate recommendations.</p> | <p>Intellectual skills (B1, B2) are developed throughout the programme by the methods and strategies outlined in section A, above.</p> <p>Specific modules support the development of quantitative and qualitative analysis, and the development of criticality and self-reflective skills. In addition, the student’s thinking skills will be evident in a summative assessment process which requires and rewards learners for the demonstration of creative thinking and problem solving, analysis, judgement and self-reflection in the development of contextually relevant solutions, and a willingness to explore and engage with a range of media.</p> <p>Throughout, the learner is encouraged to develop intellectual skills further by undertaking further independent study and research.</p> | <p>Intellectual skills are assessed through a combination of in-course formative exercises and summative assignments, including the submission of portfolios, self-reflective evidence, statistical analyses, qualitative judgements, and research reports/dissertation.</p>   |
| <p><b>11c. Practical skills</b></p>   | <p><b>The means by which these outcomes are achieved</b></p>  | <p><b>The means by which these outcomes are demonstrated</b></p>   |
| <p>C1 - Develop personal skills to increase effectiveness in project management.</p> <p>C2 - Identify practical and ethically sound solutions to theoretical and practical management related problems, thereby demonstrating praxis.</p>   | <p>Practical and professional skills are employed in the production of solutions to real life situations developed through set briefs, exercises and practical activities. The important modern-day skills of managing projects, working within differing organisational and national cultures are provided by specific modules,</p>  | <p>To support the development of practical skills students must supply worked materials and evidence in support of their assignments. Critical reasoning, good presentation and sound evidence trails in all assignments are rewarded. Assessment briefs include a variety of commercial and geographical contextual setting. Students receive</p> |

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|  | <p>as are specific inputs with an emphasis upon practical functional decision-making skills related to market planning and strategy, market intelligence and communications; managing others; and managing knowledge.</p> <p>Practical skills are further developed and integrated through a series of in-course online activities and projects intended to test skills acquired. Group forums provide opportunities to discuss ideas, progress, the work of others and the strengths and weakness in the work presented and particularly support the development of C4. Activities are provided so that students can work independently to consolidate their knowledge and grasp of practical skills. The in-course activities and assessment process in the final year particularly emphasise the acquisition of C5 with specific modules devised to highlight the practical differences in management skills required in differing contexts.</p> | <p>feedback on all activities and assignments which includes practical examples for improvement in the application of theory to practice to help them improve both aspects of their skill base.</p> |
| <b>11c. Transferrable skills</b>   | <b>The means by which these outcomes are achieved</b>   | <b>The means by which these outcomes are demonstrated</b>   |
| <p>D1 - Critically reflect in order to support enhanced learning, self-awareness and interaction with others.</p> <p>D2 – Identify and critically analyse issues in order to</p> | <p>Personal responsibility becomes an increasingly important skill as students’ progress, culminating in the writing of the Dissertation.</p>   | <p>To develop transferable skills all assignments must meet time deadlines and word count guidelines. All assessed work must be submitted independently even where group activity has been an</p>   |



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| <p>generate contextually relevant and high-quality solutions.</p> <p>D3 - Undertake effective communication and presentation skills consummate with a management position.</p> <p>D4 - Effectively use CIT to communicate in a variety of settings</p> <p>D5 - Work effectively as a member of a team, including leadership, team working skills, mutual support and cross-cultural awareness</p> <p>D6 - Work independently and to take responsibility for own learning</p> <p>D7 - Undertake multidisciplinary research through the acquisition of skills relevant to the context of engineering management</p> <p>D8 - Effectively plan and undertake personal development including the awareness of an ethical and socially responsibly dimension to decision making</p> | <p>As the programme progresses work becomes more complex and students are tested on their abilities to respond positively to feedback from a variety of audiences, as well as to manage increasingly large workloads. Students are required to complete a number of assignments and a 'research artefact' that rewards independence originality, and critical enquiry, and which further enhance communication and self-reflective skills.</p> | <p>element of the process. Students must take responsibility for their own work. All assignments require students to adopt a spirit of critical enquiry and self-reflection which is rewarded in marking guides. These guides are shared with students.</p> |
|---|--|---|

Exit Awards: Programme Outcomes

| Exit Award                                   | Knowledge & Understanding | Intellectual Skills | Practical Skills | Transferrable Skills   |
|--|---------------------------|---------------------|------------------|------------------------|
| <b>Post Graduate Diploma (120 credits)</b>   | A1, A2, A3, A4            | B1                  | C1, C2           | D1, D2, D3, D4, D5, D6 |
| <b>Post Graduate Certificate (60credits)</b> | A1, A2, A4                | B1                  | C1, C2           | D1, D2, D3, D5, D6     |

## 12. Graduate Attributes and the means by which they are achieved and demonstrated

### Graduate Attributes

The concept of the Arden University Graduate, based upon the definition of 'graduate attribute' by Bowden et al (2000) has been developed around 6 attributes.

**Lifelong Learning:** Manage employability, utilising the skills of personal development and planning in different contexts to contribute to society and the workplace.

**Reflective Practitioner:** Undertake critical analysis and reach reasoned and evidenced decisions, contribute problem-solving skills to find and innovate in solutions

**Professional Skills:** Perform effectively within the professional environment. Work within a team, demonstrating interpersonal skills such as effective listening, negotiating, persuading and presentation. Be flexible and adaptable to changes within the professional environment

**Discipline Expertise:** Knowledge and understanding of chosen field. Possess a range of skills to operate within this sector, have a keen awareness of current developments in working practice being well positioned to respond to change.

**Responsible Global Citizenship:** Understand global issues and their place in a globalised economy, ethical decision-making and accountability. Adopt self-awareness, openness and sensitivity to diversity in culture.

**Effective Communication:** Communicate effectively both, verbally and in writing, using a range of media widely used in relevant professional context. Be IT, digitally and information literate.

**Discipline Expertise:** Knowledge and understanding of chosen field. Possess a range of skills to operate within this sector, have a keen awareness of current developments in working practice being well positioned to respond to change

### The means by which these outcomes are achieved and demonstrated

All six attributes are relevant to this programme, however, five will be developed throughout Level 7 of the MSc Engineering Management where they are integrated into all modules and assessed via unit study tasks (individual and group work) and through summative assessment tasks. Some graduate attributes are assessed in more than one module allowing for greater development of skills.  
Graduate Attribute Mapping

| Module | Graduate Attribute  |
|--------|---|
|        | <b>Lifelong Learning:</b> Manage employability, utilising the skills of personal development and planning in different contexts to contribute to society and the workplace. |

|   |  |
|---|--|
| Quality Management  | <b>Reflective Practitioner:</b> Undertake critical analysis and reach reasoned and evidenced decisions, contribute problem-solving skills to find and innovate in solutions  |
| Risk Management and Innovation<br><br>Project Management Techniques | <b>Professional Skills:</b> Perform effectively within the professional environment. Work within a team, demonstrating interpersonal skills such as effective listening, negotiating, persuading and presentation. Be flexible and adaptable to changes within the professional environment. |
| Operations and Supply Chain Management<br><br>Research Project      | <b>Discipline Expertise:</b> Knowledge and understanding of chosen field. Possess a range of skills to operate within this sector, have a keen awareness of current developments in working practice being well positioned to respond to change.   |
| Sustainability in Theory and Practice                               | <b>Responsible Global Citizenship:</b> Understand global issues and their place in a globalised economy, ethical decision-making and accountability. Adopt self-awareness, openness and sensitivity to diversity in culture.   |
| Data Handling and Decision Making                                   | <b>Effective Communication:</b> Communicate effectively both, verbally and in writing, using a range of media widely used in relevant professional context. Be IT, digitally and information literate.   |

### 13. Learning and teaching methods and strategies

#### **Distance Learning**

Acquisition of A1-A5 is via engagement with the online module learning material and the online tutoring and programme participant support mechanisms, both of which are delivered via Arden University's ilearn platform (a Moodle-based system). The learning material comprises purpose-written self-contained lessons with frequent activities and feedback to generate learning and reinforce the knowledge acquisition through frequent application of learning to specific examples. Embedded within the text are links to further reading and appropriate websites. Feedback within the learning material is provided to allow programme participants to check their understanding with that of the tutor. Additionally, group learning activities direct programme participants to the tutor-facilitated discussion forums where they engage in discussion with their peers and receive formative feedback from the module tutor.

Each of the 20 credit modules provide programme participants with an understanding of key theoretical and practical management issues, debates and academic informed literatures. Teaching/learning methods adopted are transferrable across modules and are similar across modules and include online class discussions, exercises/case studies and group discussions.

For each subject being taught a programme of structured online learning activities using both formative and summative assessment is applied. The emphasis is on action learning through the mediation of the module leader for each module.

Learning and Teaching activities are:

### **Asynchronous**

Independent and directed student study, supported throughout by comprehensive online multi-media teaching materials and resources accessed through our Virtual Learning Environment

Guided group / project-based work

Research tasks

Discussion forums where students discuss and critically engage with themes emerging from the online materials they engage with, following the posing of questions or propositions, case studies or similar by either tutor or students themselves

Podcasts and narrated PowerPoints

### **Synchronous**

Online seminars facilitated by VOIP's where theory and practice are integrated

Live chats

Based upon the profile of our typical student body, our strategy enables students to engage with a variety of learning tools that best meet their learning styles, overall objectives and personal circumstances. Independent study is the cornerstone of the learner experience, supported by subject specialist engagement with the tutor and peer engagement.

Blended Learning

Blended

A-synchronous learning will be supported by in class face to face lectures, seminars and workshops.

Students will have full access to the ilearn platform and all programme resources within it. Formative opportunities will be available in class and also via 'Adobe' hosted seminars. Summative submissions will all be made via the 'Turn it In' platform.

## **14. Assessment methods and strategies**

The assessment process involves both formative and summative elements and is continuing in nature.

There will be a focus on encouraging students to apply their knowledge to practical situations. A significant part of this comes from the Dissertation module. Here students will be required to identify a topic of interest to them, which falls within the encompassing field of management. Students will explore this, and will apply their research to the topic, putting forward recommendations which are of practical benefit to the organisation.

The approach to coursework assignments will be to encourage students to apply their knowledge to organisations or case study data sets. This could be achieved through the use of case studies but will also involve employees applying information and approaches to their own organisations, or an organisation with which they are familiar.

The assessment designed for each module reflects the intentions of that module and will measure the identified learning outcomes. A variety of assessment strategies will be used to reflect and test

the achievement of the learning outcomes. These are detailed within each module and mapped in the table below. Assessment questions and cases are seen to be dynamic and are reviewed quarterly in order to maintain rigour and reflect changes in professional focus and practice.

There is a requirement for written work at all levels including reports, essays, developed plans, portfolios of work etc. and our assessment policy informs how feedback is supplied by tutors at the formative and summative assessment stage. Critical analysis is encouraged at all levels culminating in a Dissertation.

### 15. Employability

Entrants to this programme are highly likely to be in work, (be it Full or part Time). The MSc Engineering Management programme is designed to offer the degree of flexibility required to ensure that even those employed in full time positions have the maximum opportunity to fulfil their programme of study. The programme aims to develop skills and knowledge such that graduates can confidently enter the engineering management environment or can improve their existing career prospects within it. The degree develops a range of transferrable skills and provides opportunities for these to be evidenced. In particular, the final research project provides the ability to demonstrate higher level academic skills.

The distributed nature of Arden University students makes conventional careers support difficult but the use of the 'Abintegro provider' allows us to offer a range of support in career development and there are opportunities for students to purchase more specialist support if required.

The addition of imbedded graduate attributes adds value to the qualification in terms of providing 'industry ready' graduating students.

### 16. Entry Requirements

Arden University is keen to ensure that the programme is available to all those who can benefit from it.

Normally entry is via:

A degree equivalent to UK second class honours standard,

English ability equivalent to IELTS 6.5 (no less than 6.0 in any element), where the medium of undergraduate study was not English;

Applicants with existing postgraduate business awards may be eligible for entry with advanced standing and will be considered through the APL process.

Applicants who have substantial managerial experience (typically 5 years) and are able to demonstrate via references and supporting curriculum vitae an ability to successfully complete the programme may be admitted where they do not possess degree equivalent qualifications. It is not intended to offer exemptions based on experiential learning.

**17. Programme Structure****Level 7**

| <b>Module Code</b> | <b>Module Title</b>                    | <b>Credits</b> | <b>Module Type (Core/Option)</b> | <b>Assessment Method</b>   |
|--------------------|--|----------------|----------------------------------|--|
| BUS7005            | Operations and Supply Chain Management | 20             | Core                             | Assignment   |
| PRM7001            | Project Management Techniques          | 20             | Core                             | Report   |
| PRM7005            | Sustainability in Theory and Practice  | 20             | Core                             | Group Presentation and Written Report                                  |
| BUS7006            | Risk Management and Innovation         | 20             | Core                             | Report and Applied Risk Management Strategies                          |
| BUS7007            | Quality Management                     | 20             | Core                             | 2 x Assignment   |
| DAT7001            | Data Handling and Decision Making      | 20             | Core                             | Case Study based Report  |
| RES7001            | Research Project                       | 60             | Core                             | Research Proposal and Dissertation or Journal Formatted Article & Viva |

18. Subject:

N100 (Business Studies)

**Annex – Mapping of Intended Programme Learning Outcomes and Modules**

| Programme Learning Outcomes |  | Module Type (Compulsory (C)) | A1      | A2 | A3 | A4 | A5 | B1 | B2 | C1 | C2 | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 |
|-----------------------------|--|------------------------------|---------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|                             |  |                              | Modules |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Level</b>                | Operations and Supply Chain Management | C                            |         | X  |    | X  |    | X  |    |    | X  | X  | X  | X  |    |    | X  |    |    |
|                             | Project Management Techniques          | C                            | X       | X  | X  | X  |    | X  |    | X  |    | X  | X  |    |    | X  |    |    |    |
|                             | Sustainability in Theory and Practice  | C                            | X       | X  | X  |    |    | X  |    | X  | X  |    | X  | X  |    | X  |    |    |    |
|                             | Risk Management and Innovation         | C                            | X       | X  | X  |    |    | X  |    | X  | X  |    | X  |    |    |    | X  |    |    |
|                             | Quality Management                     | C                            |         | X  | X  | X  |    | X  |    |    | X  |    | X  | X  |    |    |    |    |    |
|                             | Data Handling and Decision Making      | C                            | X       | X  |    | X  | X  | X  |    | X  | X  |    |    |    | X  | X  |    | X  |    |
|                             | Research Project                       | C                            | X       | X  | X  | X  | X  | X  | X  |    | X  | X  | X  | X  | X  | X  | X  | X  | X  |