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COURSE SPECIFICATION

Cranfield University: Course Specifications

Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	MSc in Geographical Information Management

Date of first publication/latest revision:	29/04/2019

1. What is the course?

Course information

Course Title	Geographical Information Management
Course code	MSGIMFTC, MSGIMPTC, PDGIMFTC, PDGIMPTC, PCGIMFTC, PCGIMPTC
Academic Year	2019/20
Valid entry routes	MSc, PgDip, PgCert
Additional Exit routes	PgDip, PgCert
Mode of delivery	Full-time, Part-time
Location(s)1 of Study	Cranfield
School(s)	School of Water, Energy and Environment
Theme	Environment & Agrifood
Centre	Cranfield Soil and Agrifood Institute
Course Director	Dr Daniel Simms
Awarding Body	Cranfield University
Is this an AP Contract course?2	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	1st or 2nd class UK honours degree or equivalent; in a science or engineering subject Candidates with other qualifications will be considered according to experience; Where applicable minimum IELTS score of 6.5 or TOEFL 580
UK Qualifications Framework Level	QAA FHEQ Level 7 (Masters)

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1 If any part of this course is delivered at another site, please note which one(s) here
2 AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

Benchmark Statement(s)	N/A
Registration Period(s) available	Full-time MSc - one year, Part-time MSc - up to three years, Full-time PgCert - one year, Part-time PgCert - two years, Full-time PgDip - one year, Part-time PgDip - two years
Course Start Month(s)	October: Full-time Part-time: Typically an October start

Institutions delivering the course

This course is delivered by the School of Water, Energy, and Environment where the research interests include remote sensing, GIS and spatial data management.

Cranfield University interacts with the following institutions and in the following ways:

The Course has an Industrial Advisory Panel that formally meets each year. Current members of the Industrial Advisory Panel include representatives from: Airbus Defence and Space; The Joint Research Centre, Italy; and Geospatial Insights Ltd..

In addition, the Royal Institution of Chartered Surveyors (RICS) reviews the course each year. There are currently five members of the review group: one from a surveying practice, one being the RICS external examiner and the remainder from RICS.

Students are involved with field trips off-campus. In recent years these have included the following organisations: New Forest National Park, TrafficMaster, Geoplan, Surrey Satellites, the Medmenham Collection.

Students can undertake their individual research project off campus. In recent years, projects have been undertaken with ESRI UK, Natural England, Centre for Ecology and Hydrology, Ordnance Survey.

The course benefits from links to a significant number of European Universities through the Cranfield University European Partnership Programme.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited formally by Royal Institution of Chartered Surveyors (RICS) and the Institution of Civil Engineering Surveyors. This accreditation is ongoing and is reviewed annually.

2. **What are the aims of the course?**

Cranfield University offers this course in order to:

- To provide the participant with the capability to develop practical and sustainable applications of remote sensing, Geographic Information Systems and Global Positioning Systems, based upon emerging scientific principles and technological developments;
- To enable the selection of appropriate processing methods for geo spatial data combined with the design, analysis and integration of field survey techniques;
- To focus on integrated analysis of resource assessments from traditional natural resources and socio-economic surveys by the application of spatial analytic capabilities of GIS

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Postgraduate Diploma (PgDip) and Postgraduate Certificate (PgCert) exit routes are provided for students who wish to access only parts of the course provided.

This programme is intended for the following range of students:

- Those wishing to work in the geographic information industry
- Those wishing to work for government departments, agencies, NGOs and consultancies applying GI technologies to their particular areas of work
- Those wishing to develop a research career utilising GI data and methods

3. What should students expect to achieve in completing the course?

Award intended learning outcomes (ILOs) (skills and knowledge).

A. Postgraduate Certificate in Geographical Information Management

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1. Apply the principles of geographic information management technologies and processes to a range of geospatial problems

ILO 2. Interpret spatial data to derive pertinent conclusions

ILO 3. Evaluate geographic information management methodologies to enable the selection of appropriate analysis methods for a range of applications

ILO 4. Manage geographical information in a sustainable manner to deliver accurate, timely and appropriate data to a range of clients

ILO 5. Integrate analogue and digital spatial data derived from geographic information management technologies to produce quality-assured solutions

ILO 6. Advise non remote sensing or geographic information system specialists as to the role and implementation of geographic information management technologies within a range of applications

B. Postgraduate Diploma in Geographical Information Management

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 7. Integrate knowledge, understanding and skills from the taught modules in a real-life situation to address problems faced by industrial clients; creating new problem diagnoses, designs, or system insights; and communicating findings in a professional manner in written, oral and visual forms.

C. MSc in Geographical Information Management

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

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ILO 8. Define a research question, develop aim(s) and objectives, select and execute a methodology, analyse data, evaluate findings critically and draw justifiable conclusions, demonstrating self-direction and originality of thought.

ILO 9. To communicate their individual research via a thesis and in an oral presentation in a style suitable for academic and professional audiences.

4. How is the course taught?

The MSc course is taught in three sections: taught modules (40%), a group project (20%), and an individual research project (40%). The taught modules are delivered with one week contact time between October and February. The teaching methods include practical sessions, field visits, lectures, seminars, and presentations.

The Group Project is a group-based activity typically undertaken between March and May.

The Project is designed to integrate knowledge, understanding and skills from the taught modules in a real-life situation.

For the Individual Research Project, each student is allocated a supervisor. Guidance sessions are provided as to what is required from the thesis and oral presentation.

Within the induction week, students will be introduced to personal development planning and asked to reflect on their transferable skills and to take ownership of their personal development during the course. During the group project students will be given training in group-working and project management, and will reflect on their personal development.

5. What do students need to achieve in order to graduate?

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 6. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A. Postgraduate Certificate
The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Induction Week	0
Aerial Photography and Digital Photogrammetry	10
GIS Fundamentals	10
Spatial Data Management	10
Environmental Resource Survey	10
Spatial Data and the Internet	10

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Description	Credits
ELECTIVE MODULES:	
One of the following modules:	
Image Processing and Analysis	10
Modelling Environmental Processes	10
Physical Principles of Remote Sensing	10
Applied Environmental Informatics	10
Advanced GIS Methods	10
Landscape Ecology	10
TOTAL:	**60**

B.   Postgraduate Diploma

The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Induction Week	0
Aerial Photography and Digital Photogrammetry	10
GIS Fundamentals	10
Spatial Data Management	10
Environmental Resource Survey	10
Spatial Data and the Internet	10
Group Project (Full Time Student)	40
ELECTIVE MODULES:	
Image Processing and Analysis	10
OR	
Modelling Environmental Processes	10
Physical Principles of Remote Sensing	10
OR	
Applied Environmental Informatics	10
Advanced GIS Methods	10
OR	
Landscape Ecology	10
(or any 3 for part time students)	
Part Time Students:	
Group Project	40
OR	
Dissertation	40
TOTAL:	**120**

C.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

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Description	Credits
COMPULSORY MODULES:	
Induction Week	0
Aerial Photography and Digital Photogrammetry	10
GIS Fundamentals	10
Spatial Data Management	10
Environmental Resource Survey	10
Spatial Data and the Internet	10
Group Project (Full Time Students)	40
Thesis	80
ELECTIVE MODULES:	
Image Processing and Analysis OR	10
Modelling Environmental Processes	10
Physical Principles of Remote Sensing OR	10
Applied Environmental Informatics	10
Advanced GIS Methods OR	10
Landscape Ecology	10
(or any 3 for part time students)	
Part Time Students: Group Project OR	40
Dissertation	40
TOTAL:	**200**

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria
The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]

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3 For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

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- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
    - if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
    - if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
    - it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. How is the course structured?

Please see the course structure document for details on the individual elements of the course. Full-time students register for the course in October and are expected to complete the MSc course within 12 calendar months.

This course is also offered on a part-time basis. In such a situation, students typically complete the various components of the course over two or three years. One example is to complete four taught modules and a dissertation in year 1, four taught modules and a thesis and oral presentation in year 2. An alternative is to spread the taught modules over three years completing the dissertation by the end of year 2 and the thesis and oral presentation in year 3.

Part time students would be strongly encouraged to join the course at the start of the new academic year to coincide with induction for full time students. If they however join in year then ad hoc induction sessions can be arranged as required.

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[4]   Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	I-ENV-INWK	Induction Week	M Rivas Casado	33		0	Y		07/10/19	11/10/19	N/A	AO	N/A				N/A	
2	I-GIM-A1135	Aerial Photography & Digital Photogrammetry	T Brewer	50		10	N		14/10/19	18/10/19	40	ICW	100				FT - 26/10/2019 PT - 09/11/2019	July 2020
3	I-GIM-A1131	GIS Fundamentals	T Brewer	42		10	N		28/10/19	01/11/19	40	ICW	100				FT - 09/11/2019	July 2020

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[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
																	PT - 23/11/2019	
4	I-GIM-A1134	Spatial Data Management	S Hallett	33		10	N		11/11/19	15/11/19	40	ICW	100				FT - 23/11/2019 PT - 07/12/2019	July 2020
5	I-GIM-A1129	Image Processing and Analysis	T Waine	35		10	N		25/11/19	29/11/19	40	ICW	100				FT - 07/12/2019 PT - 21/12/2019	July 2020
6	I-EI-A1001	Modelling Environmental Processes	J Meersmans	26		10	Y		25/11/19	29/11/19	40	ICW	100				FT 07/12/19 PT21/12/19	July 2020
7	I-GIM-A1130	Physical Principles of Remote Sensing	T Waine	20		10	N		09/12/19	13/12/19	40	ICW	100				FT – 21/12/19 PT – 11/01/20	July 2020
8	I-EI-A1002	Applied Environmental Informatics	M Rivas Casado	45		10	N		09/12/19	13/12/19	40	ICW	100				FT - 21/12/19 PT -	July 2020

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
																	11/01/20	
9	I-GIM-A1132	Advanced GIS Methods	T Brewer	35		10	N		13/01/2020	17/01/2020	40	ICW	100				FT - 25/01/2020 PT - 08/02/2020	July 2020
10	I-LAM-A1522	Landscape Ecology	R Corstanje	30		10	N		13/01/2020	17/01/2020	40	ICW	100				FT – 25/01/2020 PT - 08/02/2020	July 2020
11	I-GIM-A1133	Environmental Resource Survey	J Meersmans	40	3	10	N		27/01/2020	31/01/2020	40	ICW	100				FT - 08/02/2020 PT - 22/02/2020	July 2020
12	I-GIM-A1136	Spatial Data and the Internet	S Hallett	36.5		10	N		10/02/2020	14/02/2020	40	ICW	100				FT - 22/02/2020 PT - 07/03/2020	July 2020
13	I-ENV-GRPP	Group Project	Monica Rivas Casado	16		40	Y		24/02/20	08/05/2020	50 50	GPROJ ICW	80 20	80 20	GPRES GPROJ ICW Observ	20 80 50 50	01/05/2020 01/05/2020 09/05/2020 N/A	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers [6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
															ed Behaviour			
14	I-ENV-DISS	Dissertation for part time students	Monica Rivas Casado	10		40	N		28/09/2019	25/09/2020	50	IPROJ IPRES	80 20				25/09/20	
15	I-ENV-THESIS	Individual Research Project	Monica Rivas Casado	20		80	Y		11/05/2020	11/09/2020	50	THESIS OR	90 10				07/09/2020	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Please list all modules that are shared with another existing course.

Module code	Module title	Course that owns the module	Course(s)/programme(s) that share the module
I-EI-A1001	Modelling Environmental Processes	Environmental Water Management	• Geographical Information Management • Environmental Engineering

7. How are the ILOs assessed?

The following assessment types are utilised:

Students on the MSc will have one taught module assessed as a written examination, seven taught modules assessed as individual coursework, (eight if they do not choose the elective module which is assessed as a written examination), one piece of group project work, and one element assessed by a thesis and an oral presentation.

This approach has been adopted in order to assess the ability of the student to demonstrate their ability in a range of environments.

Assessment and ILO Mapping

A. Postgraduate Certificate

Award ILOs Module No.	ILO 1.	ILO 2.	ILO 3.	ILO 4.	ILO 5.	ILO 6.
2	ICW	ICW		ICW	ICW	ICW
3	ICW	ICW	ICW		ICW	ICW
4	ICW	ICW	ICW		ICW	ICW
11	ICW	ICW	ICW		ICW	ICW/
12	ICW	ICW		ICW	ICW	ICW
5	ICW	ICW		ICW	ICW	ICW
6	ICW	ICW	ICW		ICW	
7	ICW	ICW	ICW		ICW	ICW
8	ICW	ICW	ICW	ICW	ICW	
9	ICW	ICW	ICW	ICW	ICW	ICW
10	ICW	ICW	ICW		ICW	

B. Postgraduate Diploma

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs Module No.	ILO 7.

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Award ILOs / Module No.	ILO 7.
13	GPROJ/ICW
14	IPROJ/IPRES

C. MSc

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs / Module No.	ILO 8.	ILO 9.
15	THESIS	OR

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7

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(External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

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9. <u>What opportunities are graduates likely to have on completing the course?</u>

The career prospects from the course have been excellent. Examples of organisations employing graduates from the course include: Airbus Defence and Security, ESRI, JARIC, local authorities, Natural England, Black and Veatch, universities, research organisations.

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COURSE SPECIFICATION

Cranfield University: Course Specifications	

Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	MSc in Global Product Development and Management

Date of first publication/latest revision:	July 2019

1. What is the course?

Course information

Course Title	MSc in Global Product Development and Management
Course code	MSGPDFTC, MSGPDPTC, PDGPDFTC, PDGPDPTC, PCGPDFTC, PCGPDPTC
Academic Year	2019/20
Valid entry routes	MSc, PgDip, PgCert
Additional exit routes	PgDip, PgCert
Mode of delivery	Full-time, Part-time
Location(s)[1] of Study	Cranfield University
School(s)	School of Aerospace, Transport and Manufacturing
Theme	Manufacturing
Centre	Sustainable Manufacturing Systems Centre
Course Director	Dr Ahmed Al-Ashaab
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ Level 7 (Masters)
Benchmark Statement(s)	Not Applicable
Registration Period(s) available	One year full-time, three years part-time

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

Course Start Month(s)	Full-time: October. Part-time: throughout the year

Institutions delivering the course

This course is delivered by The School of Aerospace, Transport and Manufacturing, Manufacturing Theme, Manufacturing Informatics Centre where the research interests include:

- Product Service Systems
- Product Life Cycle Costing
- Lean Product and Process Development
- Knowledge-Based Engineering
- Mathematical Modelling and Optimisation
- Creative Design
- New Manufacturing Technologies
- Industry 4.0

Teaching and/or assessment is also provided by the School of Management and the School of Water, Energy and Environment.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited formally by Institution of Mechanical Engineers (IMechE) up to and including Academic year 2019-20, Institution of Engineering and Technology (IET) up to and including Academic year 2019-20, and Royal Aeronautical Society (RAeS) up to and including Academic year 2019-20**.**

2. <u>What are the aims of the course?</u>

Cranfield University offers this course in order to:

- Deliver a premium high M-level course which aims at ambitious international students and mid-career professionals who want to boost their career prospects within the global market.
- Introduces cutting edge technology through an industry oriented education scheme.
- Improve the employability of students ready to manage issues arising with an increasingly globalised world.

Postgraduate Diploma (PgDip) and Postgraduate Certificate (PgCert) exit routes are provided for students who wish to access only parts of the course provided.

This programme is intended for the following range of students:

- Mid-career professionals who want to boost their career.
- Ambitious high quality students with an international background.
- Talented students with a high grade BSc level.

3. <u>What should students expect to achieve in completing the course?</u>

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate**

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In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1.   Evaluate the up-to-date methods and techniques in global product development and management.

ILO 2.   Assess the use of modern tools to facilitate product engineering, including information systems, management tools and cost engineering software packages.

ILO 3.   Apply the principles of requirements engineering and management to reduce product engineering time and cost.

ILO 4.   Analyse how IT tools and technologies are used for product evaluation.

ILO 5.   Act as a global player in a fictive product development scenario.

B. Postgraduate Diploma

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 6.   Demonstrate knowledge and critical understanding of a broad range of product development approaches.

ILO 7.   Compare state-of-the-art techniques for product development.

ILO 8.   Design new products and services by integrating various knowledge.

ILO 9.   Demonstrate skills to professionally manage culture and communication issues in product development.

ILO 10.   Demonstrate advance international communication skills.

ILO 11.   Demonstrate leadership skills to run individually small international projects.

ILO 12.   Become a well informed and educated person being able to bridge/ interface/ communicate management and workshop decisions.

C. MSc

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 13.   Identify relevant areas of previous research, placing them in context with a research, project and providing critical appraisal.

ILO 14.   Demonstrate knowledge and understanding of facts, concepts, principles and theories and articulate these through reasoned analysis and discussion.

ILO 15.   Analyse the background to an area of research, justify the research methodologies and discuss the main findings and conclusions in a scholarly written report and a viva voce examination.

ILO 16.   Demonstrate the skill to perform a research project in a clear and concise manner.

ILO 17.   Explain and practice the concept of scientific work. This includes that the student will be able to identify new research ideas, concepts or methodologies, develop experiments or case studies, and analyse the results systematically as well as justify the whole process of arriving at the results.

ILO 18.   Produce project aims, objectives, risk assessment and time lines for a research project.

ILO 19.   Write a clear and concise research report using correct citations and showing a systematic structure of thoughts.

4. <u>How is the course taught?</u>

Students will be supported in their learning and personal development in modules given in the form of lecture, group/individual coursework, and personal study based on the materials available through the University's virtual learning environments (VLEs). Following modes of learning will be available depending on the subject:

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- Remote on-line education delivered by international lecturers via internet.
- Interactive role plays.
- Mini-group project of 2 days as part of the module (contained within the one week module).
- Students will be provided with pre-course and post-course reading and assessment as dictated by the individual course modules. It is intended that all lecture material will be made available through the VLEs.
- Research and private study is necessary for the successful completion of these projects which also enhances knowledge and individual study abilities.
- Formative feedback on assessed assignments enhances the learning process and informal feedback on non-assessed individual or group exercises are also used.

5. **What do students need to achieve in order to graduate?**

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A.   Postgraduate Certificate
The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Modules 2-9 (Select 6)	60
ELECTIVE MODULES:	
None	
RECOMMENDED MODULE:	
Induction	0
TOTAL:	60

B.   Postgraduate Diploma
The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

FULL TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 2-9 Group Project (10a)	80 40
ELECTIVE MODULES:	
None	
RECOMMENDED MODULE:	
Induction	0

Description	Credits
TOTAL:	120

PART TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 2-9	80
ELECTIVE MODULES:	
Group Project (10a) or Dissertation (10b)	40
RECOMMENDED MODULE:	
Induction	0
TOTAL:	120

C.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

FULL TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 2-9 Group Project (10a) Individual Research Project (11)	80 40 80
ELECTIVE MODULES:	
None	
RECOMMENDED MODULE:	
Induction	0
TOTAL:	200

PART TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 2-9 Individual Research Project (11)	80 80
ELECTIVE MODULES:	
Group Project (10a) or Dissertation (10b)	40
RECOMMENDED MODULE:	
Induction	0
TOTAL:	200

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
    - o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
    - o If, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
    - o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. <u>How is the course structured?</u>

Full-time students register for the course in October and are expected to complete the course within 12 calendar months.

This course is also offered on a part-time basis. In such a situation, students typically complete the various components of the course over two or three years. Typical case is to complete four taught modules plus a Group Project or Dissertation in year 1 and the remainder of the modules plus the Thesis in year two and/or year 3.

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[3] For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers [6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	I-MAN-INWK	Induction	Dr Konstantinos Salonitis	18		0	Y	30/09 /19	30/09/19	04/10/19	N/A	AO	N/A				N/A	
2	I-ICI-A1019	Design Technology and Prototyping	Paul Lighterness	37		10	N	04/11 /19	04/11/19	08/11/19	40	ICW	100				02/12/19	Re-assessment date to be set by agreement of the Module Leader as/when required.
3	I-MNU-A1034	Operations Management	John Patsavellas	32		10	Y	07/10 /19	07/10/19 Occ A	11/10/19	40	EX	100				11/12/19	Manufacturing resit exams will be

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[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice
[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)
[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.
[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.
[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.
[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.
[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	Calendar 'Residential' Start Date	Calendar 'Residential' End Date	Minimum Mark[7] - 40% or 50%	Independent Assessment Type of Assessment	Independent Assessment Weighting within module8 (%) of Independent assessments	Multi-part Assessment Weighting within module of multi-part assessments[9](100%)	Multi-part Assessment Type of Assessment	Multi-part Assessment Weighting of individual elements of multi-part assessment[10]	Submission dates Assessment Submission and/or exam date[11]	Submission dates Assessment / Exam Retake date
																		during week commencing: 11/05/20
4	I-MNU-A1038	Supply Chain Management	Dr Ahmed Al-Ashaab	32		10	Y	13/01/20	13/01/20	17/01/20	40				ICW	100	10/02/20	Re-assessment date to be set by agreement of the Module Leader as/when required.
5	I-KME-A1022	Design Driven Innovation Processes	Dr Ahmed Al-Ashaab	32		10	Y	**21/10/19**	21/10/19	25/10/19	40	GCW	**100**				18/11/19 25/11/19 p/t	Re-assessment date to be set by agreement of the Module Leader as/when required.
6	I-MNU-A1018	General Management	Mr Matthew Caffrey	32		10	Y	02/12/19	02/12/19	06/12/19	40	EX	100				10/01/20	Manufacturing resit exams will be during week commencing: 11/05/20
7	I-GPD-A1505	Lean Product Development	Dr Ahmed Al-Ashaab	32		10	Y	20/01/20	20/01/20	24/01/20	40	GCW	100				17/02/20	Re-assessment date to be set by agreement of the Module Leader as/when required.
8	I-KME-A1037	Enterprise Modelling	Dr John Ahmet Erkoyuncu	32		10	Y	25/11/19	25/11/19	29/11/19	40			100 MULTI	ICW GCW	60 40	06/01/20 06/01/20	Re-assessment date to be set by

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
																		agreement of the Module Leader as/when required.
9	I-GPD-A1507	Digital Engineering	Dr John Erkoyuncu	32		10	N	11/11/19	11/11/19	15/11/19	40	EX	100				13/12/19	Manufacturing resit exams will be during week commencing: 11/05/20
10a	I-MAT-GRPP	Group Project	Dr David Ayre	20		40	Y	10/02/20	10/02/20 Occ A FT	28/04/20 FT	50	GCW ICW	80 20		GPRES GPROJ ICW Observed behaviour	80 20 50 50	28/04/20 05/05/20 05/05/20 05/05/20	
			Dr Supriyo Ganguly						10/02/20 Occ B PT	28/08/20 PT	50	GCW ICW	80 20		GPRES GPROJ ICW Observed behaviour	80 20 50 50	31/08/20 02/09/20 02/09/20 02/09/20	
10b	I-MAT-DISS	Dissertation for Part Time Students	Dr Konstantinos Salonitis	20		40	Y	10/02/20	10/02/20	28/08/20	50	ICW	100				28/08/20	
11	I-MNU-THESIS	Individual Research Project	Dr Muhammad Khan	20		80	Y	10/02/20	Occ A = PT	PT 28/08/20	50	THESIS OR	90 10				28/08/20 01/09/20	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
			Dr Muhammad Khan					01/05/20	10/02/20 Occ B = FT 01/05/20	FT 28/08/20	50	THESIS OR	90 10				28/08/20 01/09/20	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
I-MAN-INWK	Induction	Manufacturing Systems and Management Programme	Engineering & Management of Manufacturing Systems, Management and Information Systems, Aerospace Manufacturing, Cyber-Secure Manufacturing
I-GPD-A1505	Lean Product Development	Global Product Development and Management	Manufacturing Technology and Management, Engineering Competence
I-MNU-A1034	Operations Management	Engineering and Management of Manufacturing Systems	Management and Information Systems, Manufacturing, Cyber-Secure Manufacturing, Aerospace Management, Engineering Competence
I-MNU-A1038	Supply Chain Management	Engineering and Management of Manufacturing Systems	Aerospace Management
I-KME-A1022	Design Driven Innovation Processes	Global Product Development Management	Engineering Competence
I-MNU-A1018	General Management	Engineering and Management of Manufacturing Systems	Advanced Materials, Manufacturing Technology and Management, Management and Information Systems, Metal Additive Manufacturing, Engineering Competence
I-KME-A1037	Enterprise Modelling	Management and Information Systems	Management and Information Systems
I-MAT-DISS	Dissertation for Part Time Students	Advanced Materials	Aerospace Materials, Manufacturing Technology & Management, Aerospace Manufacturing, Engineering & Management of Manufacturing Systems, Management and Information Systems, Cyber-Secure Manufacturing, Welding Engineering, Metal Additive Manufacturing
I-MAT-GRPP	Group Project	Advanced Materials	Aerospace Materials, Manufacturing Technology & Management, Engineering & Management of Manufacturing Systems, Management and Information Systems, Aerospace Manufacturing, Cyber-Secure Manufacturing, Welding Engineering, Metal Additive Manufacturing
I-MNU-THESIS	Individual Research	Advanced Materials	Engineering & Management of

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	Project		Manufacturing Systems, Management and Information Systems, Cyber-Secure Manufacturing, Aerospace Materials, Manufacturing Technology & Management, Welding Engineering, Metal Additive Manufacturing, Aerospace Manufacturing

7. How are the ILOs assessed?

The course uses a range of assessment types. Students can expect to have 3 written examinations (Operation Management, General Management, and Decision Engineering), 5 pieces of assessment by submitted work and 2 elements of assessment by presentation or viva. The course is assessed as three elements:

- Taught modules (40%) are assessed by in-module assessment (including coursework, which focuses on application of principles studied and class tests, which support underpinning knowledge) or examination;
- Group project (20%) is assessed by means of a written group report and presentations.
- Individual thesis project (40%) is assessed by a thesis and an oral examination.

This approach has been adopted because the course focuses on product development that requires coursework. Assignment type assessment is the best for such modules.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.

(Module numbers should correspond with those used in the Course module table above.)

A. Postgraduate Certificate

Award ILOs Module No.	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5
2		ICW	ICW	ICW	
3	EX				EX
4	GCW	GCW	GCW		GCW
5	GCW	GCW	GCW		GCW
6	EX				
7	GCW	GCW	GCW		GCW
8	ICW	ICW		ICW	
9	EX	EX		EX	

B. Postgraduate Diploma

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

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Award ILOs / Module No.	ILO 6	ILO 7	ILO 8	ILO 9	ILO 10	ILO 11	ILO 12
10a	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW
10b	ICW	ICW	ICW	ICW	ICW	ICW	ICW

C. MSc

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs / Module No.	ILO 13	ILO 14	ILO 15	ILO 16	ILO 17	ILO 18	ILO 19
11	THESIS OR	THESIS OR	THESIS OR	THESIS OR	THESIS OR	THESIS OR	THESIS OR

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review. For collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focussed Review which looks at each course in depth. In addition occasional site inspection visits are made.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

9. **What opportunities are graduates likely to have on completing the course?**

The course is designed to equip the students with all the knowledge and skills necessary to work successfully in integrated international project teams. The close collaboration of the course with industry improves the employability of the students immediately. Exposing students to well-known industry broadens the student's horizon and introduces the student to industrial best practice. Working with worldwide well-known brands improves the vita of the students. A placement within industry also leverages the distance between the potential new employee – the student – and the potential employer.

In addition, the qualification obtained will support their professional development towards Incorporated or Chartered Engineer status (after accreditation).

COURSE SPECIFICATION

Cranfield University: Course Specifications
Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	MSc in Guided Weapon Systems

Date of first publication/latest revision:	02/09/19

1. What is the course?

Course information

Course Title	Guided Weapon Systems
Course code	MSGWSFTR, PDGWSFTR, PCGWSFTR, MSGWSPTR, PDGWSPTR, PCGWSPTR SPGWSPTR
Academic Year	2019/20
Valid entry routes	MSc, PgDip, PgCert
Exit routes	PgDip, PgCert
Mode of delivery	Full-time/Part time
Location(s)[1] of Study	Shrivenham
School(s)	Cranfield Defence & Security
Theme	Defence and Security
Centre	Centre for Defence Engineering
Course Director	Dr David Galvao-Wall
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	Yes
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements; additionally an IELTS score of 7.0 is usually required by students for whom English is not a first language.
UK Qualifications Framework Level	QAA FHEQ level 7 (Masters)

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

Benchmark Statement(s)	N/A
Registration Period(s) available	1 year Full-time, 5 years Part-time
Course Start Month(s)	September

Institutions delivering the course

This course is primarily delivered by the Cranfield School of Defence and Security, where the research interests include:

GW control, guidance, propulsion, aerodynamics, EO/IR systems, imaging systems, radar systems, warheads, materials, vibrations, aeroelasticity, lethality etc.

Cranfield University interacts with the following institutions and in the following ways:

- Industrial visits to: MBDA (Stevenage), Dstl (Portsdown West), Roxel (Summerfield), Thales (Belfast and Basingstoke), Royal Navy (HMS Collingwood and Portsmouth Dockyard), DI (London).

- Industrial lectures from MBDA and Thales on the subjects of project management, fuzing, systems engineering, software engineering and GW electronics engineering.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited formally by RAeS until 2021.

2. <u>What are the aims of the course?</u>

The aim of the course is to provide students with a detailed knowledge and understanding of guided weapon systems, such that they are fully equipped for roles in defence intelligence and acquisition, involving the specification and analysis of such systems, working individually or as part of a team. It also enables students to carry out an in-depth investigation into an area of GW technology to further enhance their analytical capability.

The main objective of the course is to bring together the wide variety of disciplines constituting guided weapons technology and to present them in an integrated manner. Interactions between one field and another are emphasized throughout. The GWS course is now in its 65th consecutive year and satisfies a requirement for specialists trained in the field of guided weapons systems. Graduates of this course go on to work in defence analysis and intelligence, research establishments and education in the UK and abroad. It attracts students from RN, RAF and civil services in the UK, and increasingly from a number of other IDT-cleared countries, including Australia, Canada, USA, Greece, Netherlands, Brazil, India and Italy, and is seen as an essential prerequisite for a number of RAF, RN and RAAF jobs. The only other course of its kind is at the Naval Postgraduate School, Monterey in California (which runs over 2 years).

The number of students attending the course has been reasonably consistent over the past ten years, typically ten to thirteen students per year, roughly 50% UK and 50% overseas. It has many parallels with the Military Electronics Systems Engineering (MESE) course at Shrivenham and also shares many modules with it.

This programme is intended for the following range of students:

It is of primary benefit to services personnel who are about to be posted into GW-related positions with organizations such as DI, DSTL and DE&S (and their international equivalents). It would also be eminently suitable for anyone intending to embark upon a GW-based career in industry.

3. **What should students expect to achieve in completing the course?**

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1. Investigate and appraise, via written and spoken communicative means, the key advanced technological disciplines associated with modern guided weapons (radar systems, EO/IR systems, propulsion, aerodynamics, control and guidance).

ILO 2. Review and justify performance variations in mechanical and electrical sub-systems relative to the capabilities of a platform and appropriately investigate and analyse the key sub-systems that make up a guided weapon, through a wide range of modelling, simulation, synthesis and experimental methods.

B. **Postgraduate Diploma**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 3. Establish and justify, via written and spoken communicative means, appropriate selection criteria, and the inherent inter-linked constraints for each of the major technical disciplines associated with modern guided weapons technology (e.g. signal processing, radar EW, structures, warheads, vibrations, aeroelasticity, materials, power supplies, explosives, etc.).

ILO 4. Propose and develop the design, operation and performance of a modern guided weapon and be able to discuss the findings in both written and viva voce examinations.

ILO 5. Assess and appraise, confidently and correctly using both written and oral communicative means, the principal trade-offs required to produce a successful guided weapon design.

ILO 6 Formulate and solve detailed calculations in order to fulfil a given complete missile system design requirement, including a detailed assessment of the target threat characteristics and then propose strategies, involving appropriate GW system and sub-system designs, to optimise the eventual system design based upon appropriate multi-disciplinary methods.

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C. **MSc**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 7. Assess new research ideas, concepts or methodologies through the use of a variety of techniques such as experimentation, analytical models and numerical models in order to perform an extended investigation into a given facet of a missile-related problem.

ILO 8. Investigate research methodology tools in an extended GW-related study, incorporating recognised project management principles.

ILO 9. Appraise, assess and document an extended research project in the field of GW requiring elements of information retrieval, modelling, experimentation and theoretical analysis.

4. **How is the course taught?**

The course is delivered by conventional and traditional academic means. Although the course is specified and described in modular terms, these modules will be integrated as best as practicably possible into a continuous taught phase (for those enrolled on the Full-Time MSc programme). Apart from standard academic lectures, course delivery also includes the following:

- Numerous visits to a wide variety of relevant industrial and military establishments: MBDA (Stevenage), Dstl (Portsdown West), Roxel (Summerfield), Thales (Belfast and Basingstoke), Royal Navy (HMS Collingwood and Portsmouth Dockyard), DI (London). These visits will be scheduled as far as practicably possible to maximise possible attendance by Part-Time students (within applied security classification limitations). They are intended to enhance student's understanding of GW-related subject areas but are not assessed.
- Visiting lecturers (industry) using appropriate subject matter experts (project management, systems engineering, software engineering, electronics engineering, etc.).
- A parametric study (software-based missile design exercise).
- Tutorials (complete missile design exercises).
- Comprehensive use of the Virtual Learning Environment (VLE), with an increasing tendency towards Technology Enhanced Learning (TEL) methods. This is especially pertinent for the "Introductory & Foundation Skills" module, largely comprising studies in maths and Matlab/Simulink programming, along with the necessary induction sessions regarding the Library, IT, VLE, Turnitin, etc. It is envisaged that much of this module will be delivered via pre-reading and VLE means, with self-assessment in the future. It is appreciated that changes will be introduced into the Course Management with the introduction of the Part-time course options, particularly regarding student experience and progression. The Course Team will be appreciative of this and take appropriate measures to minimise any detrimental effects to the students. This will be done through the Course Director keeping in contact with the part-time students and having regular meetings and consultation with appropriate members of the SAS team and Academic Registry.

5. **What do students need to achieve in order to graduate?**

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Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A.   Postgraduate Certificate

The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Module 1: Introductory & Foundation Studies (zero credits) Module 3. EO & IR Systems 1 Module 4. Radar Principles Module 5. GW Propulsion & Aerodynamics Theory Module 6. GW Control Theory – must be taken after pre-requisite module 5	0 10 10 10 10
ELECTIVE MODULES:	

Plus, any two of:
  Module 2. Signal Processing, Statistics & Analysis
  Module 7. GW Applications - Control & Guidance - must be taken after pre-requisite module 6
  Module 8. GW - Propulsion & Aerodynamics Applications - must be taken after prerequisite module 5
  Module 9. Radar EW - must be taken after pre-requisite module 4
  Module 10. EO & IR Systems 2 - must be taken after pre- requisite module 3
  Module 11. GW Warheads, Explosives & Materials
  Module 12. GW Structures, Aeroelasticity & Power Supplies
	
	10
	10
	
	10
	
	10
	10
	
	10
	10

TOTAL:	**60**

B.   Postgraduate Diploma

The accumulation of 130 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Module 1: Introductory & Foundation Studies (zero credits)	0
Module 2. Signal Processing, Statistics & Analysis	10
Module 3. EO & IR Systems 1	10
Module 4. Radar Principles	10
Module 5. GW Propulsion & Aerodynamics Theory	10
Module 6. GW Control Theory – must be taken after pre-requisite module 5	10
Module 7. GW Applications - Control & Guidance - must be taken after pre-requisite module 6	10
Module 8. GW - Propulsion & Aerodynamics Applications - must be taken after pre-requisite module 5	10
Module 9. Radar EW - must be taken after pre-requisite module 4	10

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Module 10. EO & IR Systems 2 - must be taken after pre-requisite module 3	10
Module 11. GW Warheads, Explosives & Materials	10
Module 12. GW Structures, Aeroelasticity & Power Supplies	10
Module 13. Parametric Study - must be taken after pre-requisite modules 7 and 8	5
Module 14. GW Systems	15
ELECTIVE MODULES:	
N/A	
TOTAL:	**130**

C.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Module 1: Introductory & Foundation Studies (zero credits)	0
Module 2. Signal Processing, Statistics & Analysis	10
Module 3. EO & IR Systems 1	10
Module 4. Radar Principles	10
Module 5. GW Propulsion & Aerodynamics Theory	10
Module 6. GW Control Theory – must be taken after pre-requisite module 5	10 10
Module 7. GW Applications - Control & Guidance - must be taken after pre-requisite module 6	10
Module 8. GW - Propulsion & Aerodynamics Applications - must be taken after pre-requisite module 5	10
Module 9. Radar EW - must be taken after pre-requisite module 4	10
Module 10. EO & IR Systems 2 - must be taken after pre-requisite module 3	10
Module 11. GW Warheads, Explosives & Materials	10
Module 12. GW Structures, Aeroelasticity & Power Supplies	10
Module 13. Parametric Study - must be taken after pre-requisite modules 7 and 8	5
Module 14. GW Systems	15
Module 15. Research Project	70
ELECTIVE MODULES:	
N/A	
TOTAL:	**200**

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria
The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

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- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does not have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment on the first attempt for the significant majority of the taught assessments, noting that:
  o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
  o it is not permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. How is the course structured?

Full-time students register for the course in September and are expected to complete the course within 12 calendar months.

Part-time students register for the course in September and are expected to complete the course within 5 years. The maximum registration period for the Part-Time MSc programme is five years.

Each 10-credit module is taught over a single week, with the following week kept free of structured teaching to allow time for more independent learning and reflection, especially for the Full-time students. Most industrial visits, if appropriate, are also scheduled for the second week, with Part-Time students offered the opportunity to attend as far as practicably possible. The main exception is the 15-credit GW Systems module, which runs over two weeks.

A thesis workshop will be programmed into the course schedule in March, which will generally be suitable for all Full-time and most Part-time students. A separate workshop will be organised, in September, for Part-time students for which this scheduling is deemed to be unsuitable. The Full-time course is generally structured in three distinct and chronological phases: firstly "theory"

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[3] For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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modules, secondly "applications" modules and thirdly "systems" modules. Some modules may therefore only be taken after its relevant pre-requisite module has
been taken (and passed). The module descriptors will reflect all such pre-requisites. In particular, they are:

- EO/IR Systems 1 is a pre-requisite for EO/IR Systems 2.
- Radar Principles is a pre-requisite for Radar EW.
- GW Control Theory is a pre-requisite for GW Applications - Control & Guidance.
- GW Propulsion & Aerodynamics Theory is a pre-requisite for GW - Propulsion & Aerodynamics Applications and GW Control Theory.
- Both GW - Applications Control and Guidance and GW Propulsion & Aerodynamics Applications are prerequisites for the Parametric Study.

The course structure (module breakdown) for both the Full-time and Part-time versions of the PgCert, PgDip and MSc qualifications are as follows:

PgCert Guided Weapon Systems (60 credits)
- **Compulsory Modules**
  Module 1: Introductory & Foundation Studies (zero credits)
  Module 3. EO & IR Systems 1
  Module 4. Radar Principles
  Module 5. GW Propulsion & Aerodynamics Theory
  Module 6. GW Control Theory – must be taken after pre-requisite module 5
- **Elective Modules**
  Plus, any two of:
  Module 2. Signal Processing, Statistics & Analysis
  Module 7. GW Applications - Control & Guidance - must be taken after pre-requisite module 6
  Module 8. GW - Propulsion & Aerodynamics Applications - must be taken after prerequisite
  module 5
  Module 9. Radar EW - must be taken after pre-requisite module 4
  Module 10. EO & IR Systems 2 - must be taken after pre-requisite module 3
  Module 11. GW Warheads, Explosives & Materials
  Module 12. GW Structures, Aeroelasticity & Power Supplies

Typical 3 Year (Part-Time) PgCert Programme Plan
The following plan shows how a typical part-time student could complete the PgCert programme within a three year time-frame, though there are many other ways in which this could be done, dependent on an individual's elective module selection.

- Year 1:
  - Module 1: Introductory & Foundation Studies (September)
  - Module 5: GW Propulsion & Aerodynamics Theory (November)
  -
  - Module 7: GW Applications - Control & Guidance (February)
- Year 2:
  - Module 4: Radar Principles (October)
    Module 6: GW Control Theory (December)
  - Module 8: GW - Propulsion & Aerodynamics Applications (March)
- Year 3:
  - Module 3::EO & IR Systems 1 (October)
  - Module 10: EO & IR Systems 2 (November)

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PgDip Guided Weapon Systems Candidates (130 credits)
All of the above PgCert compulsory and elective modules, plus:
Module 13. Parametric Study - must be taken after pre-requisite modules 7 and 8
Module 14. GW Systems

MSc Guided Weapon Systems (200 credits)
All of the above PgDip modules plus an individual project

Typical 5 Year (Part-Time) MSc Programme Plan
The following plan shows how a part-time student could complete the MSc programme within a
five year time-frame.

- Year 1:
    - Module 1: Introductory & Foundation Studies (September)
    - Module 4: Radar Principles (October)
    - Module 5: GW Propulsion & Aerodynamics Theory (November)
    - Module 11: GW Warheads, Explosives & Materials (January)
    - Module 12: GW Structures, Aeroelasticity & Power Supplies (February)
- Year 2:
    - Module 2: Signal Processing, Statistics & Analysis (September)
    - Module 6: GW Control Theory (December)
    - Module 7: GW Applications - Control & Guidance (February)
    - Module 8: GW - Propulsion & Aerodynamics Applications (March)
- Year 3:
    - Module 3::EO & IR Systems 1 (October)
    - Module 9: Radar EW (January)
    - Module 10: EO & IR Systems 2 (November)
- Year 4:
    - Commence Individual Project (Sept to July)
    - Module 13: Parametric Study (March)
    - Module 14: GW Systems (April)
- Year 5:
    - Thesis workshop (Sept)
    - Complete Individual Project (Sept to July)

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Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
												Independent Assessment		Multi-part Assessment			Submission dates	
1	R-GWS-IFS	Introductory and Foundation Studies	Dr D Galvao-Wall	20		0	N	02/09/19	02/09/19	06/09/19	N/A	AO	N/A				N/A	
2	R-MES-SPSA	Signal Processing, Statistics & Analysis	Dr P Barker	30		10	Y	30/09/19	30/09/19	04/10/19	50			100	ICW	50	01/11/19 (FT&PT)	TBC
															ICW	50	01/11/19 (FT & PT)	TBC

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[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates fo32r both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar — Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Independent Assessment — Type of Assessment	Weighting within module[8] (%) of Independent assessments	Multi-part Assessment — Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
3	R-MES-EOIS1	Electro-Optics & Infrared Systems 1	Dr D B James	32		10	Y	18/11/19	18/11/19	22/11/19	50	EX	100				18/12/19 (FT & PT)	18/03/20
4	R-MES-RP	Radar Principles	Dr A Balleri	30		10	Y	14/10/19	14/10/19	18/10/19	50	ICW	100				15/11/19 (FT & PT)	TBC
5	R-GWS-GWPAT	Guided Weapons Propulsion & Aerodynamics Theory	Dr D Bray	28		10	N	16/09/19	16/09/19	20/09/19	50 / 50	OR / IPRAC	75 / 25				14-15/11/19 21/10/19 (FT) 11/11/19 (PT)	13/01/20 TBC
6	R-GWS-GWCT	Guided Weapons Control Theory	Dr D Galvao-Wall	30		10	N	28/10/19	28/10/19	01/11/19	50 / 50	OR / ICW	75 / 25				16-17/12/19 29/11/19 (FT) 20/12/19 (PT)	14/02/20 TBC
7	R-GWS-GWACG	Guided Weapons Applications – Control & Guidance	Dr J T Economou	30		10	N	17/02/20	17/02/20	21/02/20	50 / 50	EX / ICW	75 / 25				24/03/20 03/04/20 (FT) 28/04/20 (PT)	15/05/20 TBC

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
												Independent Assessment		**Multi-part Assessment**			**Submission dates**	
8	R-GWS-GWAPA	Guided Weapons Propulsion & Aerodynamics Applications	Dr D Bray	28		10	N	02/03/20	02/03/20	06/03/20	40 40	EX IPRAC	50 50				20/04/20 24/04/20 (FT) 18/03/20 (PT)	05/06/20 10/07/20 (FT & PT)
9	R-MES-REW	Radar Electronic Warfare	Mr I Vagias	30		10	Y	03/02/20	03/02/20	07/02/20	50	ICW	100				06/03/20 (FT & PT)	TBC
10	R-MES-EOIS2	Electro-Optics and Infrared Systems 2	Dr D B James	32		10	Y	06/01/20	06/01/20	10/01/20	40	ICW	100				07/02/20 (FT & PT)	TBC
11	R-GWS-GWA	Guided Weapons Warheads, Explosives & Materials	Dr G Kister	30		10	N	02/12/19	02/12/19	06/12/19	40 40	EX ICW	75 25				17/01/20 13/01/20 (FT) 03/02/20 (PT))	27/03/20 TBC
12	R-GWS-GWA2	Guided Weapons Structures, Aeroelasticity & Power Supplies	Dr A Saddington	29		10	N	20/01/20	20/01/20	24/01/20	40 40	EX ICW	75 25				27/02/20 10/03/20 (FT) 31/03/20 (PT)	20/04/20 TBC

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers [6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
13	R-GWS-PS	Parametric Study	Dr A J Saddington	34		5	N	16/03/20	16/03/20	20/03/20	50 50	GPRAC GPRES	75 25				24/04/20 (FT&PT) 20/03/20 (FT&PT)	TBC
14	R-GWS-GWSLSA	Guided Weapon Systems	Dr D Bray	48		15	N	30/03/20	30/03/20	03/04/20	50 50	OR ICW	50 50				29 & 30/04/20 05/05/20 (FT) 27/05/20(PT)	26/06/20 TBC
15	R-GWS-THESIS	Research Project	Dr D Galvao-Wall	3		70	N	06/01/20 (FT) 02/09/19 (PT)	06/01/20 (FT) 02/09/19 (PT)	28/07/20 (FT & PT)	50	THESIS	100				28/07/20 (FT & PT)	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
R-MES-SPSA	Signal Processing, Statistics & Analysis	Military Electronic Systems Engineering	Guided Weapon Systems
R-MES-EOIS1	Electro-Optics & Infrared Systems 1	Military Electronic Systems Engineering	Guided Weapon Systems
R-MES-RP	Radar Principles	Military Electronic Systems Engineering	Guided Weapon Systems
R-MES-REW	Radar Electronic Warfare	Military Electronic Systems Engineering	Guided Weapon Systems
R-MES-EOIS2	Electro-Optics & Infrared Systems 2	Military Electronic Systems Engineering	Guided Weapon Systems

7. How are the ILOs assessed?

The course uses a wide range of assessment types. Students can expect to have written examinations (both open-book and closed-book), oral examinations (in the subjects of propulsion, aerodynamics, control and GW systems) and a large number of submitted work assessments. There will also be some group activities, e.g. in the Parametric Study, Radar Principles and GW Systems modules. The individual project will be assessed via dissertation submission. This provides a balanced approach to the overall course assessment.

Assessment and ILO Mapping

A. Postgraduate Certificate & Postgraduate Diploma

The Award intended learning outcomes are assessed by the following module assessments:

	PgCert		PgDip			
Award ILOs Module No.	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1	AO	AO	AO			
2	ICW	ICW	ICW			
3	EX	EX	EX			
4	ICW	ICW	ICW			
5	OR & IPRAC	OR & IPRAC	OR & IPRAC			
6	OR & ICW	OR & ICW	OR & ICW			
7	EX & ICW	EX & ICW	EX & ICW			
8	EX &	EX &	EX &			

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Award ILOs / Module No.	PgCert		PgDip			
	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
	IPRAC	IPRAC	IPRAC			
9	ICW	ICW	ICW			
10	ICW	ICW	ICW			
11	EX & ICW	EX & ICW	EX & ICW			
12	EX & ICW	EX & ICW	EX & ICW			
13	GPRES & GPRAC	GPRES & GPRAC	GPRES & GPRAC	GPRES & GPRAC	GPRES & GPRAC	
14	OR & ICW	OR & ICW	OR & ICW	OR & ICW	OR & ICW	OR & ICW

B. MSc

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs / Module No.	ILO 7	ILO 8	ILO 9
15	THESIS	THESIS	THESIS

<u>**CROSS-MODULAR ASSESSMENT**</u> (including any assessment which rests outside an individual module)

Not applicable

Title	Modules Covered	Assessment	
		Type	Weight (%)
N/A			

8. <u>How will the University assure the quality of the provision?</u>

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for

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Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard;

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and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. What opportunities are graduates likely to have on completing the course?

Nearly all students in recent years have been directly sponsored to undertake the course with a subsequent specific weapons-related position in mind. It is envisaged that this will remain the case in the foreseeable near and mid-terms, though the availability of PgCert and PgDip exit routes, and the possibility for taking the course on a Part-Time basis, may eventually change the nature of the student profile. The field of guided weapon systems technology is ever-changing and there are many opportunities within industrial companies (such as Thales and MBDA in the UK) for successful GWS students.

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Guided Weapon Systems COURSE SPECIFICATION
Version 2.1 May 2019

COURSE SPECIFICATION

Cranfield University: Course Specifications

Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE: MSc in Information Capability Management

Date of first publication/latest revision: March 2019

1. What is the course?

Course information

Course Title	Information Capability Management
Course code	MSICMFTR – PDICMFTR – PCICMFTR – MSICMPTR - PDICMPTR- PCICMPTR - SPICMPTR
Academic Year	2019/20
Valid entry routes	MSc, PgDip, PgCert
Additional exit routes	PgDip, PgCert
Mode of delivery	Full time, part time and short course for credit
Location(s)[1] of Study	Shrivenham
School(s)	Cranfield Defence and Security
Theme	Defence and Security
Centre	Centre for Cyber Security and Information Systems
Course Director	Mr Ross Harris
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	Yes
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ level 7 (Masters)
Benchmark	Benchmarked against QAA Master's Benchmark Statements for

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

Information Capability Management COURSE SPECIFICATION
Version 2.0 March 2019

Statement(s)	Computing
Registration Period(s) available	A student who registers for the PgCert will have a registration period of 3 years. For the PgDip this will be 4 years, and for the MSc 5 years. A Full time student will have a registration period of 1 year.
Course Start Month(s)	Full-time & Part-time – September Part-time - January

Institutions delivering the course

This course is delivered by Cranfield Defence and Security, Centre of Cyber Security and Information Systems where the research interests include:

Information Management, Human Factors, Enterprise Architecture and Information Systems (IS)

Cranfield University interacts with the following institutions and in the following ways:

The course has no academic or industrial partners. Students will probably undertake their research for the dissertation stage through another organisation (often their sponsor).

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

The course is accredited formally by the British Computer Society (BCS) up to and including the 2021 intake. Successful completion of the MSc can lead to Chartered Professional Status. The course is also accredited by the Chartered Institute of Library and Information Professionals (CILIP).

2. <u>**What are the aims of the course?**</u>

Cranfield University offers this course in order:

- to provide students with a broad base of information system (IS) and management theories, concepts, applications and techniques in order to contribute to IS provision in support of an organisation's business goals
- to develop or enhance professional competence and agility in individuals who wish to become senior managers who can master the disciplines of both business and information.
- to develop students' ability through comprehensive analysis and synthesis of key issues and specific areas of interest that will enable them to be effective within the IS profession
- to provide students with a knowledge of information systems, management theories and enabling technologies along with the skills to critically analyse their practical application in order to support business goals.
- to develop the skills to work with others in a team based environment.
- to enable optimum effectiveness through conceptualisation, abstraction, and evaluation of complex often competing requirements, constraints and imperatives from a variety of stakeholders in order to exercise informed professional IS judgement.

Additional MSc Aims

- to enhance and synthesise independent learning abilities.

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Information Capability Management COURSE SPECIFICATION
Version 2.0 March 2019

- to apply critical appraisal skills to research and analyse a relevant information system issue, challenge or opportunity in an evidence based dissertation.

Postgraduate Diploma (PgDip) and Postgraduate Certificate (PgCert) entry routes are provided for students who wish to access only parts of the Course provided.
This programme is intended for the following range of students:

- personnel from the Ministry of Defence
- personnel from Government bodies
- employees from industry
- people wishing to develop the skills and knowledge associated with development of business systems.

3. **What should students expect to achieve in completing the course?**

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate/Postgraduate Diploma**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1.   analyse the conceptualisation of the information systems environment in the UK specifically and more generally in a global context

ILO 2.   compare contemporary IS methodology and their applicability to the development of strategy and systems

ILO 3.   distinguish the nature and impact of project management on the effective delivery and operation of information systems

ILO 4.   outline contemporary emerging technology and illustrate its application to a range of scenarios

ILO 5.   critically evaluate requirements within selected business environments (including legal, ethical) in order to best support business process with information systems

ILO 6.   demonstrate synthesis and evaluation in the consideration of key approaches to strategic information system development

ILO 7.   develop representational models of information system processes and apply them within the strategic information system development environment

ILO 8.   critically analyse information from disparate sources synthesising unique interpretation

ILO 9.   demonstrate the ability to work within teams, communicating and collaborating in order to develop solutions to information systems challenges

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ILO 10.   utilise value judgement to act as an informed customer in information system discussions

ILO 11.   apply relevant theories, concepts and techniques in the development of information systems in an integrated team based environment

ILO 12.   critically analyse risk and uncertainty, undertaking alleviation action (including system protection and security) in order to achieve cost effective and timely performance

ILO 13.   develop and prioritise strategies and approaches that develop and enhance effective information systems

ILO 14.   evaluate influences, and apply concepts and techniques in the production of strategy and development of information systems

B. MSc

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 15.   undertake analytical research, using appropriate research methodology, data collection and analysis into defined areas to produce evidence based meaningful and applicable recommendations for action to enhance information system development

ILO 16.   exercise self-direction, independent learning abilities and originality of thought in optimising, evaluating and presenting information system development recommendations and solutions

4. How is the course taught?

Students will be supported in their learning and personal development by:

- dedicated study skills sessions in the Foundations module
- access to materials on the Virtual Learning Environment (VLE) that support study skills development
- case studies that translate the theories into practical solutions
- lectures from subject matter experts both internal and external to the University
- visits to relevant organisations
- group-work involving investigation into a current subject area and presentation to peers
- access to a range of material through the University Library services

5. What do students need to achieve in order to graduate?

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

Information Capability Management COURSE SPECIFICATION
Version 2.0 March 2019

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A. Postgraduate Certificate

The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Foundations of IS	10
ELECTIVE MODULES:	
5 modules chosen from 2-12	50
TOTAL:	**60**

B. Postgraduate Diploma

The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Modules 1-12	120
ELECTIVE MODULES:	
N/A	
TOTAL:	**120**

C. MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Modules 1–12 Module 13 (Research Project)	120 80
ELECTIVE MODULES:	
N/A	
TOTAL:	**200**

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

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The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does not have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment on the first attempt for the significant majority of the taught assessments, noting that:
  - o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  - o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
  - o it is not permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6.   How is the course structured?

Full-time students register for the course in September and are expected to complete the course within 48 weeks. Full-time modules run in three week blocks with a week of directed study prior to a taught week and another directed study period after the taught week to allow time for more independent learning, reflection and completion of coursework. Two modules are run via the VLE over a period of approximately 14 weeks supported by face to face tutorials.

Part-time students have up to five years to complete the twelve modules and dissertation (on average four modules per year) but could complete in less than three years depending on student availability to study. Modules are taken with the full time students during the full-time delivery and via the virtual learning environment (VLE). Part time students typically complete each module over

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[3]   For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4]   Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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Information Capability Management COURSE SPECIFICATION
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a seven week period (sharing the same taught week with the full-time students but with six weeks of directed study; 3 weeks of directed study before the taught week and 3 weeks afterwards to allow time for more independent learning, reflection and completion of coursework).

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Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	R-SISD-F	Foundations of IS (A) Foundations of IS (B)	Ross Harris	30		10	Y		02/09/19 13/01/20	06/09/19 17/01/20	40	ICW	100				16/09/19 FT 30/09/19 PT 10/02/20 PT(B)	AY 20/21
2	R-SISD-PI	Professional Issues+	Nikki Williams	10		10	N	02/09/19		20/12/19 end of	40	ICW	100				20/12/19 FT/PT	AY 20/21

+ Distance learning module

[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated providing that the overall average is ≥50%.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis; MULTI – Multi-part assessment

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	Residential' Start Date	Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment (Independent Assessment)	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment (Multi-part)	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
										online module								
3	R-SISD-PM	Programme and Project Management for Information Systems	Simon Renfrey	30		10	Y	14/10/19 (PT) 28/10/19 (FT)	04/11/19	08/11/19	40	ICW	100				18/11/19 FT 02/12/19 PT	AY 20/21
4	R-SISD-MT	Methods and Tools for Information Systems Development	Ian Owens	30		10	Y	02/09/19 (PT) 16/09/19 (FT)	23/09/19	27/09/19	40 / 40	GPRES / ICW	25 / 75				27/09/19 FT/PT 07/10/19 FT 21/10/19 PT	AY 20/21
5	R-SISD-SE	Software Engineering	Pathmeswaran Raju	30		10	Y	23/09/19 (PT) 07/10/19 (FT)	14/10/19	18/10/19	40 / 40	GCW / ICW	25 / 75				18/10/19 FT/PT 28/10/19 FT 11/11/19 PT	AY 20/21
6	R-SISD-ISA	Systems Architecture	Rick Adcock	30		10	N	04/11/19 (PT) 18/11/19 (FT)	25/11/19	29/11/19	40 / 40	GCW / ICW	25 / 75				29/11/19 FT/PT 09/12/19 FT 06/01/19 PT	AY 20/21

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis; MULTI – Multi-part assessment

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Information Capability Management COURSE SPECIFICATION
Version 2.0 March 2019

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	Residential' Start Date	Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
7	R-SISD-SAIS	Digital Business Strategy	Ross Harris/ Ian Owens	30		10	N	06/01/20 (PT) 20/01/20 (FT)	27/01/20	31/01/20	40 / 40	GCW / ICW	25 / 75				31/01/20 FT/PT 10/02/20 FT 24/02/20 PT	AY 20/21
8	R-SISD-ETM	Emerging Technology Monitoring+	Ian Owens	7		10	Y	06/01/20	Compulsory 1 Day residential 04/03/2020	15/05/20 end of online module	40	ICW	100				15/05/19 FT/PT	AY 20/21
9	R-SISD-OD	Organisational Development	Jeremy Hilton	30		10	Y	27/01/20 (PT) 10/02/20 (FT)	17/02/20	21/02/20	40	ICW	100				02/03/20 FT 16/03/20 PT	AY 20/21
10	R-SISD-IAS	Cyber Security & Information Assurance	Darren Lawrence	30		10	N	17/02/20 (PT) 02/03/19 (FT)	09/03/20	13/03/20	40 / 40	GCW / ICW	25 / 75				13/03/20 FT/PT 23/03/20 FT 06/04/20 PT	AY 20/21
11	R-SISD-DMSM	Data Modelling, Storage and Management	Duncan Hodges	30		10	N	09/03/20 (PT) 23/03/20 (FT)	30/03/20	03/04/20	40 / 40	GCW / ICW	25 / 75				03/04/20 PT/FT 15/04/20 FT 29/04/20 PT	AY 20/21

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis; MULTI – Multi-part assessment

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment					Submission dates	
								Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date		Independent Assessment		Multi-part Assessment				
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
12	R-SISD-DLDS	Data-led Decision Support	Duncan Hodges	30		10	Y	06/04/20 (PT) 20/04/19 (FT)	27/04/20	01/05/20	40 40	GCW ICW	25 75				01/05/20 PT/FT 12/05/20 FT 27/05/19 PT	AY 20/21
13	R-ICM-THESIS	Dissertation[12]	Antoinette Caird-Daley	24		80	N	Workshop: A 18/05/20 B 30/09/19 C 31/03/20	09/12/19 22/06/20	11/12/19 24/06/20	50	Thesis	100				A 31/07/20 FT B 30/09/20 PT C 31/03/21 PT	

[12] Occurrence A is for Full time students. Occurrences B -E are for Part-time students who have completed the taught phase of the Course; Occurrence chosen is to be agreed in consultation with Course Director

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis; MULTI – Multi-part assessment

Information Capability Management COURSE SPECIFICATION
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Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
R-SISD-DLDS	Data Led Decision Support	ICM MSC	Defence Cyber Masters Programme Defence and Security Programme
R-SISD-ETM	Emerging Technology Monitoring	ICM MSC	Defence Cyber Masters Programme Defence and Security Programme
R-SISD-OD	Organisational Development	ICM MSC	Defence and Security Programme
R-SISD-PM	Programme and Project Management for Information Systems	ICM MSC	Defence and Security Programme
R-SISD-SE	Software Engineering	ICM MSC	Defence and Security Programme
R-SISD-MT	Methods and Tools for Information Systems Development	ICM MSC	Defence and Security Programme
R-SISD-F	Foundations of Information Systems	ICM MSC	Cyber Masters Programme

7. How are the ILOs assessed?

The Course uses a range of assessment types. Depending on the number and type of modules taken students can expect assessment by submitted work and elements of assessment by presentation or viva. Some of this assessed work will be completed in groups. For each module students will be invited to undertake one or more pieces of coursework which collectively will form a portfolio of work to be assessed.

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Information Capability Management COURSE SPECIFICATION

This approach has been adopted in order to present students with a variety of realistic problems that need to be solved using a variety of approaches which provide opportunities to demonstrate their ability to apply skills and knowledge developed on the course, many of which relate to situations that might be found in the workplace. To obtain an MSc, students must complete a dissertation, demonstrating their ability to apply the skills and knowledge gained on the course to a real world problem.

Assessment and ILO Mapping

A. Postgraduate Certificate/Diploma

Award ILOs / Module No.	ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO8	ILO9	ILO10	ILO11	ILO12	ILO13	ILO14	ILO15	ILO16
1	ICW							ICW								
2	ICW				ICW									ICW		
3		ICW	ICW		ICW		ICW		ICW		ICW					ICW
4	ICW GPRES	ICW GPRES			ICW GPRES			ICW GPRES	ICW GPRES		ICW GPRES		ICW GPRES	ICW GPRES	ICW GPRES	ICW GPRES
5		GCW/ICW			GCW	GCW/ICW	ICW		GCW		ICW					
6	ICW	ICW, GCW			ICW, GCW	ICW, GCW		ICW	GCW	ICW	GCW	ICW	GCW	GCW	ICW	ICW
7	GCW	ICW				ICW/GCW		ICW/GCW	GCW	GCW	GCW	GCW	ICW	GCW		
8				ICW												
9		ICW							ICW		ICW				ICW	
10								ICW	GCW			ICW				
11					ICW, GCW		ICW	ICW, GCW	GCW	ICW, GCW	GCW	ICW, GCW			ICW	ICW
12				GCW		GCW		GCW/ICW	GCW		GCW		ICW	ICW		

B. MSc

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs / Module No.	ILO15	ILO16
13	THESIS	THESIS

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

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Information Capability Management COURSE SPECIFICATION

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. What opportunities are graduates likely to have on completing the course?

On successful completion of the course the student will have a Masters' Degree in Information Capability Management accredited by two professional bodies, recognised by Government and industry, representing Information Professionals (CILIP) and IT Professionals (BCS).
The course will take students on to further senior management career opportunities with skills in appropriate areas including business strategy development and implementation, information management, information assurance/ cyber security, development of appropriate business.

COURSE SPECIFICATION

Cranfield University: Course Specifications	
Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.	

COURSE TITLE:	MSc in Investment Management

Date of first publication/latest revision:	July 2019

1. What is the course?

Course information

Course Title	MSc in Investment Management
Course code	MSIVMFTC, PDIVMFTC, PCIVMFTC
Academic Year	2019/2020
Valid entry routes	MSc
Additional exit routes	PgDip, PgCert
Mode of delivery	Full-time
Location(s)[1] of Study	Cranfield Campus
School(s)	School of Management
Theme	Leadership and Management
Centre	Finance and Economics
Course Director	Dr Nemanja Radić and Dr Matthias Nnadi (Deputy)
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ Level 7 (Masters)
Benchmark Statement(s)	N/A
Registration Period(s) available	Full-time MSc – one year
Course Start Month(s)	September

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

Institutions delivering the course

This course will primarily be delivered by Finance and Accounting group in School of Management. The course shares 80 credits on the core modules and 20 credits of specialism in core modules, with 20 credits being completed through 4 electives.

Cranfield University interacts with the following institutions and in the following ways:

- Teaching/instruction from external academic, industry and other guest speakers.
- Individual thesis

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is not formally accredited by any external bodies.

2. What are the aims of the course?

Cranfield University offers this course in order to provide students with an advanced-level conceptual foundation in various functional dimensions of the complex world of investment management. It will impart better understanding of investment issues and develop the necessary skills and knowledge in line with the requirements of the investment industry within the UK and worldwide.

The objectives are six-fold:
1. To prepare students for the world of employment in investment management through a high= quality teaching of specialised modules that will focus on developing a strong understanding of theory and its application in practice.
2. To provide a rich student learning experience through hands on teaching techniques that will utilise the application of data analysis using Bloomberg and other sources.
3. To enrich student learning experience by offering an opportunity to do independent research projects.
4. To impart advance study and understanding of the investment sector and the changing external context in which it operates.
5. To develop a range of finance knowledge and skills, together with self-awareness and personal development appropriate for successful career in the investment industry.
6. To enhance lifelong learning through the development of transferable intellectual and study skills to enable self-direction and creativity, in order to contribute to business, the economy and society at large.

The proposed programme will be equally attractive to new graduates and those looking to develop a career in the investment industry such as investment specialists, traders, fund managers, risk managers, analysts and brokers.

3. What should students expect to achieve in completing the course?

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate**
In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1.   Be able to appraise key investment and management issues.
ILO 2.   Be able to interpret and apply accounting and financial information effectively.

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ILO 3.   Originality in the application of firm valuation and application of financial modeling for practical decision making.

ILO 4.   Apply key investment management skills required for decision making.

B. Postgraduate Diploma

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 5.   Be able to critically assess current research in finance and investment together with the capacity to evaluate its relevance to practice.

ILO 6.   A conceptual understanding that enables the student to evaluate contemporary issues and methods for financial analysis and, where appropriate, adapt them in the context of both advanced scholarship and their selected elective subjects.

ILO 7.   Be able to acquire and use information effectively in any appropriate medium, including the increasing range of analytical tools for investment decision making.

ILO 8.   Be able to advance their knowledge and develop new financial and management skills to a high level.

C. MSc

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 9.   Be confidently able to apply investment management theories, tools and techniques in a variety of contexts including case studies, trading simulations and the individual thesis project.

ILO 10.   Evaluate appropriate theoretical frameworks for an issue or situation under consideration and to apply the technique(s) correctly.

ILO 11.   Display practical capabilities in self-directed research, data gathering, data analysis and interpretation, report writing and presentation skills.

ILO 12.   Carry out research using appropriate techniques and draw justifiable inferences from the data obtained.

ILO 13.   Critically evaluate and synthesis the published literature in finance and investment.

ILO 14.   Produce a high-quality thesis and critically evaluate the interpretations of the data.

4. How is the course taught?

Overall the aim is to provide a varied, stimulating and experiential learning environment. All taught modules consist of formal lectures, in-class discussions, group and self-study. Group project work, reflective practice and class exercises are used to develop problem solving skills. The course will be supported by an electronic learning environment (VLE - Blackboard) which will be the central repository for all information relating to the course and available to the students at all times. This will be supplemented by online module case packs. Additional practical expertise will be provided by visiting fellows and guest speakers. Each core module comprises 20 hours of class contact time with a further 80 hours of study time to consolidate learning and carry out assignments, giving 100 notional learning hours per module. Each elective module has 50 notional hours consisting of 15 class contact hours and a further 35 private study hours. The thesis component of the module is a total of 80 credits.

The teaching methods, as laid out in section 2, include:

- Lectures
- Student centred learning/reflection
- Exercises/Case studies
- Trading Simulations
- Thesis supported by academic supervision

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In addition to the teaching methods outlined above, students are supported in their learning and personal development by:

- Personal development lectures delivered by the head of the careers development service
- Help with preparation of CVs
- Help through mock interviews

The MSc in Investment Management will be differentiated from our existing Finance and Management MSc by:

- By targeting students with strong quantitative skills looking for careers in investment industry
- By offering a number of new and unique electives with a global perspective
- By making suitable changes to the existing Finance and Management programme contents and making it more corporate finance-oriented MSc
- By orientating career development towards investment industry

Students will be supported in their learning and personal development by:

- Two-week orientation program in accounting, finance and statistics aimed at students with quantitative background but have little or no prior background in accounting and finance and statistics
- Library induction, referencing and plagiarism sessions
- PDP specifically supported through SOM careers development sessions
- Organisation Behaviour and Personal Development module
- A Virtual Learning Environment
- Learning teams supported by an academic tutor
- Provision of language classes. Mandatory for those with only one language and optional for those with more

5. **What do students need to achieve in order to graduate?**

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A. Postgraduate Certificate
The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
6 modules from 1-10 including 20 credits from modules 7, 8 or 9	60
ELECTIVE MODULES:	
N/A	N/A
TOTAL:	**60**

B. Postgraduate Diploma
The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

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Description	Credits
COMPULSORY MODULES:	
Modules 1-10	100
ELECTIVE MODULES:	
4 modules from 11-21	20
TOTAL:	**120**

C.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Modules 1-10 Thesis 22	100 80
ELECTIVE MODULES:	
4 modules from 11-21	20
TOTAL:	**200**

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
  - if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit

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[3] For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);

- o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
- o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. **How is the course structured?**

The course will be offered on a full-time basis only. Full-time students register for the course in September and are expected to complete the course within 12 calendar months.

The core modules will be taught in a series of 10x2 hour lectures in the first two terms. The elective modules will be taught in 6x2 and 1x3 hours lectures in the third term. The individual research-based thesis is undertaken during terms 3 and 4.

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Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment						Submission dates	
								Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date		Independent Assessment		Multi-part Assessment					
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]		Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	M-F/COF	Corporate Finance	Dr Yacine Belghitar	20		10	Y	07/10/19	07/10/19	18/11/19	40	EX	100					w/c 16/12/19	TBC
2	M-F/SAF	Statistical Analysis in Finance	Dr Nemanja Radic	20		10	Y	9/10/19	9/10/19	20/11/19	40	EX	100					w/c 16/12/19	TBC
3	M-F/ACC	Accounting	Dr Matthias Nnadi	20		10	Y	07/10/19	07/10/19	03/12/19	40	Ex	100					w/c 16/12/19	TBC
4	M-F/ECO	Economics for Financial Markets	Dr Constantinos Alexiou	20		10	Y	08/10/19	08/10/19	28/11/19	40	EX	100					w/c 16/12/19	TBC
5	M-F/ORG	Organisational Management	Dr Valentina Battista	20		10	Y	09/10/19	09/10/19	27/11/19	40	ICW	100					20/12/19	TBC

[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Version 1.0 July 2019

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	Calendar — Residential' Start Date	Calendar — Residential' End Date	Minimum Mark[7] - 40% or 50%	Assessment — Independent Assessment — Type of Assessment	Assessment — Independent Assessment — Weighting within module8 (%) of Independent assessments	Assessment — Multi-part Assessment — Weighting within module of multi-part assessments[9] (100%)	Assessment — Multi-part Assessment — Type of Assessment	Assessment — Multi-part Assessment — Weighting of individual elements of multi-part assessment[10]	Submission dates — Assessment Submission and/or exam date[11]	Submission dates — Assessment / Exam Retake date
6	M-F/VFM	Valuation and Financial Modelling	Dr Vineet Agarwal	20		10	Y	13/01/20	13/01/20	12/02/20	40	EX	100				23/03/20	TBC
7	M-F/FMRE	Financial Markets, Regulation and Ethics	Dr Walt Gontarek	20	14 / 6	10	Y	16/01/20	16/01/20	04/03/20	40 40	IPRAC GPRES	70 30				04/03/20 04/03/20	TBC
8	M-I/IPM	Investment and Portfolio Management	Prof Sunil Poshakwale/ Dr Peter Yallup	20		10	N	14/01/19	14/01/19	10/03/20	40	EX	100				w/c 23/03/20	TBC
9	M-I/DFR	Derivatives and Financial Risk Management	Dr Peter Yallup	20		10	N	15/01/20	15/01/20	02/03/20	40	EX	100				w/c 23/03/20	TBC
10	M-F/RMF	Research Methods in Finance	Dr Vineet Agarwal	20		10	Y	11/02/20	11/02/20	11/03/20	40	ICW	100				01/04/20	TBC
11	M-F/FEC	Applied Financial Econometrics	Dr Yacine Belghitar, Dr Peter Yallup	15		5	Y	14/04/20	14/04/20	20/05/20	40	ICW	100				15/06/20	TBC
12	M-F/BDM	Bigdata Management and Cybersecurity	Dr Andrea Moro	15		5	Y		**Not running for 2019/2020**		40	ICW	100				TBC	TBC
13	M-F/BCS	Blockchain, Cryptocurrencies, and Small Contracts	Dr Andrea Moro Dr Walt Gontarek	15		5	Y	20/04/20	20/04/20	15/05/20	40	ICW	100				23/06/20	TBC
14	M-I/FNM	Fund Management	Jane Vessey	15		5	Y	23/04/20	23/04/20	20/05/20	40	EX	100				08/06/20	TBC
15	M-F/MAD	Mergers and Acquisitions	Dr Andrea Moro	15		5	Y	14/04/20	14/04/20	19/05/20	40	ICW	100				16/06/20	TBC

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Version 1.0 July 2019

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers [6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	Calendar 'Residential' Start Date	Calendar 'Residential' End Date	Minimum Mark[7] - 40% or 50%	Independent Assessment Type of Assessment	Independent Assessment Weighting within module8 (%) of Independent assessments	Multi-part Assessment Weighting within module of multi-part assessments [9](100%)	Multi-part Assessment Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Submission dates Assessment Submission and/or exam date[11]	Submission dates Assessment / Exam Retake date
16	M-I/FIS	Fixed Interest Securities	Dr Vineet Agarwal	15		5	Y	20/04/20	20/04/20	26/05/20	40	EX	100				08/06/20	TBC
17	M-F/PEQ	Private Equity	Dr Benoit Chevalier-Roignant	15		5	Y	21/04/20	21/04/20	28/05/20	40	ICW	100				02/07/20	TBC
18	M-I/TATS	Technical Analysis and Trading Systems	Dr Peter Yallup	15		5	Y	15/04/20	15/04/20	19/05/20	40	ICW	100				23/06/20	TBC
19	M-I/IEM	International Investment and Emerging Markets	Prof Sunil Poshakwale	15		5	Y	14/04/20	14/04/20	06/05/20	40	ICW	100				03/06/20	TBC
20	M-F/CRS	Corporate Restructuring	Dr Yacine Belghitar	15		5	Y	16/04/20	16/04/20	21/05/20	40	ICW	100				02/07/20	TBC
21	M-F/IFF	Infrastructure Finance	Ian Alexander	15		5	Y	15/04/20	15/04/20	06/05/20	40	EX	100				w/c 08/06/20	TBC
22	M-F/ENF	Entrepreneurial Finance	Dr Andrea Moro	15		5	Y	14/04/20	14/04/20	21/05/20	40	EX	100				w/c 08/06/20	TBC
23	M-F/SMA	Strategic Management Accounting and Control	Prof Michael Bourne	15		5	Y	04/05/20	04/05/20	21/05/20	40	ICW	100				03/07/20	TBC
24	M-F/THS	Thesis	Dr Nemanja Radić	50		80	Y	29/04/20	29/04/20	03/09/20		THESIS	100				03/09/20	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Version 1.0 July 2019

Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
M-F/COF	Corporate Finance	Finance and Management	Finance and Management
M-F/SAF	Statistical Analysis in Finance	Finance and Management	Finance and Management
M-F/ACC	Accounting	Finance and Management	Finance and Management
M-F/ECO	Economics for Financial Markets	Finance and Management	Finance and Management
M-F/ORG	Organisational Management	Finance and Management	Finance and Management
M-F/VFM	Valuation and Financial Modelling	Finance and Management	Finance and Management
M-F/FMRE	Financial Markets, Regulation and Ethics	Finance and Management	Investment Management Retail and Digital Banking
M-F/RMF	Research Methods in Finance	Finance and Management	Finance and Management
M-F/MAD	Mergers and Acquisitions	Finance and Management	Finance and Management
M-F/BCS	Blockchain, Cryptocurrencies, and Smart Contracts	Finance and Management	Investment Management
M-F/FEC	Applied Financial Econometrics	Finance and Management	Finance and Management
M/F/BDM	Bigdata Management and Cybersecurity	Finance and Management	Finance and Management
M-F/PEQ	Private Equity	Finance and Management	Finance and Management
M-I/FNM	Fund Management	Investment Management	Finance and Management
M-I/FIS	Fixed Income Securities	Investment Management	Finance and Management
M-I/TATS	Technical Analysis and Trading Systems	Investment Management	Finance and Management
M-I/IEM	International Investment and Emerging Markets	Investment Management	Finance and Management
M-F/CRS	Corporate Restructuring	Finance and Management	Finance and Management
M-F/IFF	Infrastructure Finance	Finance and Management	Finance and Management
M-F/ENF	Entrepreneurial Finance	Finance and Management	Finance and Management

Investment Management COURSE SPECIFICATION
QA&E USE ONLY: Version 1.0 July 2019   Course / SAS Version:

M-F/SMA	Strategic Management Accounting and Control	Finance and Management	Finance and Management
M-F/THS	Thesis	Finance and Management	Finance and Management

7. How are the ILOs assessed?

The course uses a range of assessment types: exams, group and individual assignments and an 80 credit thesis at the end of the programme.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.

Award ILOs / Module No.	ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO8	ILO9	ILO10	ILO11	ILO12	ILO13	ILO14
	Postgraduate Certificate				Postgraduate Diploma				MSc					
1	✔	✔	✔	✔										
2			✔	✔										
3		✔		✔										
4	✔			✔										
5	✔			✔										
6	✔	✔	✔	✔		✔	✔	✔						
7	✔			✔										
8	✔	✔		✔										
9	✔	✔		✔										
10	✔	✔		✔										
11							✔	✔						
12					✔		✔	✔						
13			✔		✔		✔	✔						
14				✔	✔		✔	✔						
15					✔	✔	✔	✔						
16						✔	✔	✔						
17					✔	✔		✔						
18					✔		✔	✔						
19					✔		✔	✔						
20					✔	✔	✔	✔						
21					✔	✔		✔						
22					✔	✔	✔	✔						
23					✔		✔	✔						
24									✔	✔	✔	✔	✔	✔

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)
N/A	N/A	N/A	N/A
		N/A	N/A

Investment Management COURSE SPECIFICATION
QA&E USE ONLY: Version 1.0 July 2019   Course / SAS Version:

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising from at least the following member: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may also include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

Investment Management COURSE SPECIFICATION
QA&E USE ONLY: Version 1.0 July 2019   Course / SAS Version:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.

2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. What opportunities are graduates likely to have on completing the course?

Investment management is one of the fastest growing industries and the potential for recruitment is very promising. The rapid growth and developmental needs of investment expertise, especially in emerging countries, will demand people with necessary knowledge and skills. Therefore, our graduates can expect to work in top investment banks, hedge funds, major consulting firms and other financial and banking sectors around the world.

COURSE SPECIFICATION

Cranfield University: Course Specifications Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.	

COURSE TITLE:	MSc in Logistics and Supply Chain Management

Date of first publication/latest revision:	April 2019

1. What is the course?

Course information

Course Title	MSc in Logistics and Supply Chain Management
Course code	MSLSOFTC, MSLOSPTC, PDLSOFTC, PDLSOPTC, PCLSOFTC, PCLSOPTC
Academic Year	2019-20
Valid entry routes	MSc
Additional exit routes	PgDip, PgCert
Mode of delivery	Muscat
Location(s)[1] of Study	Muscat University
School(s)	School of Management
Theme	Leadership and Management
Centre	Centre for Demand Chain Management
Course Director	Dr Denyse Julien
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FEHQ Level 7 (Masters)
Benchmark Statement(s)	N/A
Registration Period(s) available	Full-time MSc - one year Part-time MSc – up to three years
Course Start Month(s)	September

Institutions delivering the course

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

This course is delivered by the School of Management/Centre for Demand Chain Management, where the research interests include procurement, logistics, supply chain management and marketing.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited formally by The Chartered Institute of Logistics & Transport until 2021 and The Chartered Institute of Purchasing and Supply until August 2018.

2. What are the aims of the course?

Cranfield University offers this course in order to fulfil a market demand for highly capable graduates in the field of Logistics and Supply Chain Management. This is addressed through the aims of the course which are to provide students with:

- An overall appreciation of logistics and supply chain management and their importance to modern business.
- Appropriate technical knowledge in the key areas of logistics and supply chain management.
- Analytical, managerial and critical thinking skills that will enable them to apply this knowledge within a business environment.
- A critical understanding of the need to manage and plan supply chains within an overall business environment in an integrated and co-ordinated manner.
- Development in their ability to manage in complex and uncertain situations by focusing on soft skills such as communication, team-working and negotiation.
- Development in their ability to analyse, synthesise and critically evaluate information to take more effective management decisions.
- An understanding of the ethical and environmental implications of logistics and supply chain management decisions.

3. What should students expect to achieve in completing the course?

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1.   Possess a systematic understanding of logistics and supply chain knowledge, and a critical awareness of current supply chain problems and new thinking at the forefront of the discipline.
ILO 2.   Be able to identify appropriate techniques to address specific challenges in supply chain management.
ILO 3.   Analyse and solve supply chain problems systematically.
ILO 4.   Make reasoned judgements in the absence of complete data.
ILO 5.   Critically evaluate the application of current logistics and supply chain management research and evaluate its relevance to organisational practice.
ILO 6.   Communicate their conclusions clearly to specialist and non-specialist audiences.
ILO 7.   Demonstrate transferrable skills, including; time management, general communication, reflection, report writing and presentational and team working.

B. **Postgraduate Diploma**

2

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 8.   Be able to be original in the application of knowledge, together with a practical understanding of the analytical and managerial skills that will enable them to apply this knowledge within an overall business environment in a logical and coherent manner.

ILO 9.   Be able to analyse and solve complex logistics and supply chain problems systematically and creatively.

ILO 10. Demonstrate self-direction and originality in solving supply chain problems and to act professionally in planning and implementing tasks and projects.

ILO 11. Demonstrate additional transferrable skills, including; consultancy, project management, negotiation, cultural awareness and leadership.

C. MSc

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 12. Independently and confidently be able to apply logistics and supply management theories, tools and techniques to a variety of situations.

ILO 13. Demonstrate the ability to adapt appropriate logistics and supply management frameworks and contextualise for a specific organisational issue accurately.

ILO 14. Display practical ability in self-directed research, data gathering, data analysis and interpretation, report writing and presentation skills.

ILO 15. Judge appropriate research methodologies for conducting research, and draw justifiable inferences from the data and analysis generated.

ILO 16. Critically evaluate and synthesise the published literature.

ILO 17. Undertake independent study on a relevant logistics and supply management subject, demonstrating the ability to plan, manage and execute an industrial (private or public sectors) or research based project with specified time scales.

ILO 18. Produce a high quality thesis and critically evaluate the interpretations of the data.

4. **How is the course taught?**

The aim is to provide a varied, stimulating and experiential learning environment. All taught modules consist of formal lecturers, in-class case discussions, group and self-study.   Group project work, reflective practice and class exercises are used to develop problem solving skills.

The teaching methods are:
- Lectures
- Student centred learning/reflection
- Case studies
- Video and audio materials
- Simulation
- Tutorials
- Problem based learning projects
- Individual research project with academic supervisors

In addition to these methods the programme offers:
- Induction Programme
- Learning teams supported by an academic tutor
- Extensive use of BlackBoard (VLE) as a means of delivering material to support and augment classroom learning
- Library induction, referencing and plagiarism sessions

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5. **What do students need to achieve in order to graduate?**

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A.   Postgraduate Certificate
The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Module 1	10
50 credits from the taught modules (2-14)	50
ELECTIVE MODULES:	
N/A	N/A
TOTAL:	**60**

B.   Postgraduate Diploma
The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Modules 1 to 10	100
Modules 11 to 14	20
ELECTIVE MODULES:	
N/A	
TOTAL:	**120**

C.   MSc
In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Modules 1 to 10	100
Modules 11 to 14	20
Module 15	0
Thesis Module 16	80
ELECTIVE MODULES:	
N/A	
TOTAL:	**200**

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If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
    o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
    o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
    o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. How is the course structured?

All students register for the course in September. Full-time students are expected to complete the course in September in the following year. The part-time course is structured over two years and students are expected to complete the following modules in each year:

Year 1	Year 2
1. Supply Chain Strategy and Sustainability	1. Freight Transport
2. Principles of Strategic Procurement	2. Inventory and Operations Management
3. Accounting and Finance	3. Information Systems and e-Business
4. Analytical Techniques for Supply Chain Management	4. Physical Network Design

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[3]   For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4]   Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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5. Project Management Introduction 6. Performance Measurement in the Supply Chain 7. Retail Logistics	5. Warehousing 6. Six Sigma 7. Sales and Operations Planning 8. Research Methods 9. Thesis

6

Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Logistics and Supply Chain Management (Muscat)

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers [6]	Credits	Is the module shared? Y/N	Calendar Module Start Date (eg Pre-course task)	Calendar ' Residential' Start Date	Calendar ' Residential' End Date	Minimum Mark[7] – 40% or 50%	Assessment – Independent Assessment Type of Assessment	Assessment – Independent Assessment Weighting within module8 (%) of Independent assessments	Assessment – Multi-part Assessment Weighting within module of multi-part assessments [9] (100%)	Assessment – Multi-part Assessment Type of Assessment	Assessment – Multi-part Assessment Weighting of individual elements of multi-part assessment[10]	Assessment – Submission dates Assessment Submission and/or exam date[11]	Assessment – Submission dates Assessment / Exam Retake date
1	M-L/SCSS Occ B	Supply Chain Strategy and Sustainability	Dr Denyse Julien	20		10	Y	FT/PT 06/10/19	FT/PT 06/10/19	FT/PT 13/11/19	40 40	ICW	100				FT/PT 26/10/19	
2	M-L/PSP Occ B	Principles of Strategic Procurement	Dr Farooq Habib	20		10	Y	FT/PT 23/02/20	FT/PT 23/02/20	FT/PT 26/02/20	40	ICW	100				FT/PT 14/03/20	
3	M-L/ACF Occ B	Accounting and Finance	TBC	20		10	Y	FT/PT 12/01/20	FT/PT 12/01/20	FT/PT 16/01/20	40	EX	100				Exam Week 2	
4	M-L/ATSM Occ B	Analytical Techniques for Supply Chain Management	Dr Anurag Tewari	20		10	N	FT/PT 10/11/19	FT/PT 10/11/19	FT/PT 12/11/19	40	ICW	100				FT/PT 30/11/19	

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[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%. This will be at the Board of Examiners discretion.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

7

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
								Calendar				Independent Assessment		Multi-part Assessment			Submission dates	
5	M-L/FRT Occ B	Freight Transport	Prof Melvyn Peters	20		10	Y	FT 27/10/19	FT 27/10/19	FT 30/10/19	40	ICW	100				FT/ 20/11/19	
6	M-L/IOM Occ B	Inventory and Operations Management	Dr Anurag Tewari Dr Syed Imran Ali	20		10	Y	FT 02/03/20	FT 02/03/20	FT 05/02/	40	GCW	100				FT 10/04/20	
7	M-L/ISBM Occ B	Information Systems and e-Business	Dr Abhijeet Ghadge, Dr Syed Imran Ali	20		10	N	FT 15/03/20	FT 15/03/20	FT 18/03/20	40	GCW	100				FT 10/04/20	
8	M-L/PMI Occ B	Project Management Introduction	Carl Kuhl	20		10	Y	FT/PT 29/03/20	FT/PT 29/03/20	FT/PT 02/04/20	40			MULTI 100	GCW GPRAC	75 25```	FT/PT 02/04/20 02/04/20	
9	M-L/PND Occ B	Physical Network Design	Dr Nicky Yates	20		10	N	FT 01/12/19	FT 01/12/19	FT 04/12/19	40	ICW	100				FT 06/01/20	
10	M-L/WHS Occ B	Warehousing	Dr Hendrik Reefke	20		10	Y	FT 12/07/20	FT 12/07/20	FT 15/07/20	40	ICW	100				FT 31/08/20	
11	M-L/SXS Occ B	Six Sigma	Hamid Moradlou	12		5	Y	FT 09/06/20	FT 09/06/20	FT 11/06/20	40	GCW	100				FT 07/07/20	
12	M-L/PFM Occ B	Performance Measurement in the Supply Chain	Dr Andrey Pavlov	12		5	Y	FT/PT 23/06/20	FT/PT 23/06/20	FT/PT 25/06/20	40	ICW	100				FT/PT 01/08/20	
13	M-L/SOP Occ B	Sales and Operations Planning	Dr Heather Skipworth	12		5	Y	FT 07/06/20	FT 07/06/20	FT 09/06/20	40	ICW	100				FT 30/06/20	

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
14	M-L/RLO Occ B	Retail Logistics	Prof Michael Bourlakis	12		5	Y	FT/PT 21/06/20	FT/PT 21/06/20	FT/PT 23/06/20	40	ICW	100				FT/PT 19/07/20	
15	M-L/RSM Occ B	Research Methods	Denyse Julien / Muscat	12		0	Y	FT 08/04/20	FT 08/04/20	FT 02/06/20	N/A	AO	N/A				N/A	
16	M-L/THS Occ B	Thesis	Denyse Julien	0		80	Y	FT 08/04/20	FT 08/04/20	FT 02/06/20		THESIS	100				FT 05/09/20	

9

Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
M-L/SCSS	Supply Chain Strategy and Sustainability	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/PSP	Principles of Strategic Procurement	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/ACF	Accounting and Finance	Logistics and Supply Chain Management	Procurement and Supply Chain Management; Management; Management and Corporate Sustainability; Management and Entrepreneurship; Exec LSCM
M-L/FRT	Freight Transport	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/IOM	Inventory and Operations Management	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/PMI	Project Management Introduction	Logistics and Supply Chain Management	Procurement and Supply Chain Management, Design Strategy and Leadership, Digital Design and Strategic Communication, Innovation and Creativity in Industry
M-L/PND	Physical Network Design	Logistics and Supply Chain Management	Exec LSCM
M-L/WHS	Warehousing	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/SXS	Six Sigma	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/PFM	Performance Measurement in the Supply Chain	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/SOP	Sales and Operations Planning	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-LRLO	Retail Logistics	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/RSM	Research Methods	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/THS	Thesis	Logistics and Supply Chain Management	Procurement and Supply Chain Management

7. How are the ILOs assessed?

The course uses a range of assessment types including both individual and group coursework, exams and a thesis.

This approach has been adopted in order to ensure that students demonstrate their understanding through a wide range of learning techniques, but are not disadvantaged through any one approach.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.

Award ILOs / Module No.	ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO8	ILO9	ILO10	ILO11	ILO12	ILO13	ILO14	ILO15	ILO16	ILO17	ILO18
	PG Certificate in Supply Chain Management							PG Diploma in Logistics and Supply Chain Management				MSc in Logistics and Supply Chain Management						
1	✓		✓	✓	✓	✓	✓			✓	✓		✓					
2	✓	✓	✓		✓	✓	✓				✓		✓					
3				✓					✓									
4	✓	✓	✓	✓	✓		✓	✓	✓				✓					
5	✓		✓		✓	✓												
6	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓					
7		✓			✓						✓							
8		✓		✓		✓	✓			✓	✓							
9	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓						
10	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓						
11	✓			✓		✓					✓	✓	✓					
12	✓	✓	✓	✓		✓		✓	✓		✓	✓						
13	✓	✓				✓					✓	✓						
14	✓	✓				✓	✓				✓	✓						
16	✓	✓				✓	✓				✓	✓						

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)
N/A	N/A	N/A	N/A
		N/A	N/A

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

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New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review

known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. **What opportunities are graduates likely to have on completing the course?**

Graduates of the course are much sought after by employers. They include organisations from the 'not for profit' sector as well as a wide range of companies from the 'for profit' sector. Career progression for many of the graduates is often very rapid and a number have become logistics or supply chain directors for major international organisations.

COURSE SPECIFICATION

Cranfield University: Course Specifications
Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	MSc in Logistics and Supply Chain Management

Date of first publication/latest revision:	July 2019

1. What is the course?

Course information

Course Title	MSc in Logistics and Supply Chain Management
Course code	MSLOSFTC, PDLOSFTC, PCLOSFTC
Academic Year	2019-20
Valid entry routes	MSc
Additional exit routes	PgDip, PgCert
Mode of delivery	Full-time (Cranfield only)
Location(s)[1] of Study	Cranfield Campus
School(s)	School of Management
Theme	Leadership and Management
Centre	Centre for Demand Chain Management
Course Director	Dr Denyse Julien
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FEHQ Level 7 (Masters)
Benchmark Statement(s)	N/A
Registration Period(s) available	Full-time MSc - one year (Cranfield),
Course Start Month(s)	September

Institutions delivering the course

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

Version 1.0 July 2019

This course is delivered by the School of Management/Centre for Demand Chain Management, where the research interests include procurement, logistics, supply chain management and marketing.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited formally by The Chartered Institute of Logistics & Transport until 2021 and The Chartered Institute of Purchasing and Supply until August 2018.

2. What are the aims of the course?

Cranfield University offers this course in order to fulfil a market demand for highly capable graduates in the field of Logistics and Supply Chain Management. This is addressed through the aims of the course which are to provide students with:

- An overall appreciation of logistics and supply chain management and their importance to modern business.
- Appropriate technical knowledge in the key areas of logistics and supply chain management.
- Analytical, managerial and critical thinking skills that will enable them to apply this knowledge within a business environment.
- A critical understanding of the need to manage and plan supply chains within an overall business environment in an integrated and co-ordinated manner.
- Development in their ability to manage in complex and uncertain situations by focusing on soft skills such as communication, team-working and negotiation.
- Development in their ability to analyse, synthesise and critically evaluate information to take more effective management decisions.
- An understanding of the ethical and environmental implications of logistics and supply chain management decisions.

3. What should students expect to achieve in completing the course?

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1.   Possess a systematic understanding of logistics and supply chain knowledge, and a critical awareness of current supply chain problems and new thinking at the forefront of the discipline.

ILO 2.   Be able to identify appropriate techniques to address specific challenges in supply chain management.

ILO 3.   Analyse and solve supply chain problems systematically.

ILO 4.   Make reasoned judgements in the absence of complete data.

ILO 5.   Critically evaluate the application of current logistics and supply chain management research and evaluate its relevance to organisational practice.

ILO 6.   Communicate their conclusions clearly to specialist and non-specialist audiences.

ILO 7.   Demonstrate transferrable skills, including; time management, general communication, reflection, report writing and presentational and team working.

B. **Postgraduate Diploma**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 8.   Be able to be original in the application of knowledge, together with a practical understanding of the analytical and managerial skills that will enable them to apply this knowledge within an overall business environment in a logical and coherent manner.

ILO 9.   Be able to analyse and solve complex logistics and supply chain problems systematically and creatively.

ILO 10.   Demonstrate self-direction and originality in solving supply chain problems and to act professionally in planning and implementing tasks and projects.

ILO 11.   Demonstrate additional transferrable skills, including; consultancy, project management, negotiation, cultural awareness and leadership.

C. MSc

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 12.   Independently and confidently be able to apply logistics and supply management theories, tools and techniques to a variety of situations.

ILO 13.   Demonstrate the ability to adapt appropriate logistics and supply management frameworks and contextualise for a specific organisational issue accurately.

ILO 14.   Display practical ability in self-directed research, data gathering, data analysis and interpretation, report writing and presentation skills.

ILO 15.   Judge appropriate research methodologies for conducting research, and draw justifiable inferences from the data and analysis generated.

ILO 16.   Critically evaluate and synthesise the published literature.

ILO 17.   Undertake independent study on a relevant logistics and supply management subject, demonstrating the ability to plan, manage and execute an industrial (private or public sectors) or research based project with specified time scales.

ILO 18.   Produce a high quality thesis and critically evaluate the interpretations of the data.

4. <u>How is the course taught?</u>

The aim is to provide a varied, stimulating and experiential learning environment. All taught modules consist of formal lecturers, in-class case discussions, group and self-study.   Group project work, reflective practice and class exercises are used to develop problem solving skills.

The teaching methods are:
• Lectures
• Student centred learning/reflection
• Case studies
• Video and audio materials
• Simulation
• Tutorials
• Problem based learning projects
• Individual research project with academic supervisors

In addition to these methods the programme offers:
• Induction Programme
• Learning teams supported by an academic tutor
• Extensive use of BlackBoard (VLE) as a means of delivering material to support and augment classroom learning
• Library induction, referencing and plagiarism sessions

5. What do students need to achieve in order to graduate?

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A.   Postgraduate Certificate

The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Module 1 50 credits from the taught modules (2-10)	10 50
ELECTIVE MODULES:	
N/A	N/A
TOTAL:	**60**

B.   Postgraduate Diploma

The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Modules 1 to 10	100
ELECTIVE MODULES:	
4 Modules from 11 to 25	20
TOTAL:	**120**

C.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Modules 1 to 10 Module 26 Thesis	100 0 80
ELECTIVE MODULES:	
4 Modules from 11 to 25	20
TOTAL:	**200**

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria
The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
  - o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  - o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
  - o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. <u>How is the course structured?</u>

All students register for the course in September. Full-time students are expected to complete the course in September in the following year.
The course is structured around four eleven week terms. In the first from September to December the students are given a thorough grounding in procurement and supply chain management through a series of six compulsory core elements, including the participation in a supply chain game, which integrates students' learning from the course and develops their team working skills.

In the second term from January to March, students study the remaining four compulsory 10 credit modules, two procurement 5 credit modules and two 5 credit options. The electives allow the students to start to specialise and to tailor their learning to their own interests within procurement and supply chain management.

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[3] For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

The third and fourth terms are effectively merged and during this period the students undertake an individual thesis project. It is expected that the majority of students will undertake this thesis project within an organisation, which can be in the profit or not for profit sector. Alternatively, students can undertake a Cranfield led research based thesis project.

Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Logistics and Supply Chain Management (Cranfield)

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] – 40% or 50%	Independent Assessment			Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date	
1	M-L/SCSS	Supply Chain Strategy and Sustainability	Dr Heather Skipworth	20		10	Y	07/10/19	07/10/19	07/11/19	40	ICW	100				18/11/19		
2	M-L/PSP	Principles of Strategic Procurement	Dr Farooq Habib	20		10	Y	12/11/19	12/11/19	10/12/19	40	ICW	100				13/01/20		
3	M-L/ACF	Accounting and Finance	Dr Simon Templar	20		10	Y	30/10/19	30/10/19	10/12/19	40	EX	100				EW 16/12/19		
4	M-L/ATS	Analytical Techniques for Supply Chain Management	Prof Emel Aktas	20		10	Y	08/10/19	08/10/19	05/12/19	40	ICW	100				06/12/19		

[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Independent Assessment		Multi-part Assessment			Submission dates	
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date		Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
5	M-L/FRT	Freight Transport	Prof Melvyn Peters	20		10	Y	04/11/19	04/11/19	12/01/20	40	ICW	100				20/01/20	
6	M-L/IOM	Inventory and Operations Management	Dr Anurag Tewari	20		10	Y	10/10/19	10/10/19	12/11/19	40	GCW	100				28/11/19	
7	M-L/ISB	Information Systems and e-Business	Dr Syed Imran Ali	20		10	Y	13/02/20	13/02/20	25/03/20	40	GCW	100				02/05/20	
8	M-L/PMI	Project Management Introduction	Dr Denyse Julien	20		10	Y	Occ-A 03/02/20	03/02/20	05/02/20	40 40			MULT 100	GCW GPRAC	75 25	05/02/20 05/02/20	
								Occ-C 10/02/20	12/02/20	12/02/20	40 40			MULTI 100I	GCW GPRAC	75 25	12/02/20 12/02/20	
								Occ-D 17/02/20	19/02/20	19/02/20	40 40			MULTI 100	GCW GRPAC	75 25	19/02/20 19/02/20	
9	M-L/PND	Physical Network Design	Dr Nicky Yates	20		10	N	13/01/20	13/01/20	12/02/20	40	ICW	100				04/03/20	
10	M-L/WHS	Warehousing	Dr Hendrik Reefke	20		10	N	13/01/20	13/01/20	18/02/20	40	ICW	100				17/03/20	
11	M-P/BPO	Business Process Outsourcing	Dr Soroosh Saghiri	12		5	Y	16/02/20	16/02/20	20/03/20	40			MULTI	GCW ICW	75 25	19/04/20 19/04/20	
12	M-P/RSC	Designing and Managing Resilient Supply Chains	Dr Uta Jüttner	12		5	Y	16/03/20	16/03/20	19/03/20	40	GCW	100				16/04/20	
13	M-L/OUT	Logistics Outsourcing	Prof Melvyn Peters	12		5	Y	20/01/20	20/01/20	22/01/20	40	ICW	100				16/02/20	

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
14	M-L/PRR	Planning and Resourcing Road Freight Transport	Prof Melvyn Peters	12		5	Y	02/03/20	02/03/20	04/03/20	40			MULTI	GPRES GCW ICW	10 40 50	03/04/20 03/04/20 03/04/20	
15	M-L/HLR	Humanitarian Logistics	Dr Hendrik Reefke	12		5	Y	17/02/20	17/02/20	19/02/20	40	ICW	100				01/04/20	
16	M-L/SIM	Simulation	Dr Nicky Yates	12		5	Y	23/03/20	23/03/20	25/03/20	40	ICW	100				09/05/20	
17	M-L/SXS	Six Sigma	Dr Farooq Habib	12		5	Y	13/02/20	13/02/20	14/02/20	40	GCW	100				09/03/20	
18	M-L/PFM	Performance Measurement in the Supply Chain	Dr Andrey Pavlov	12		5	Y	27/01/20	27/01/20	29/01/20	40	GCW	100				23/02/20	
19	M-L/SOP	Sales and Operations Planning	Dr Heather Skipworth	12		5	Y	26/03/20	26/03/20	27/03/20	40	ICW	100				28/04/20	
20	M-L/RLO	Retail Logistics	Prof Michael Bourlakis	12		5	Y	20/02/20	20/02/20	21/02/20	40	ICW	100				20/03/20	
21	M-L/SNCC	Social Network Analysis in a Supply Chain Context	Dr Leila Alinaghian	12		5	Y	03/02/20	03/02/20	05/02/20	40	ICW	100				26/02/20	
22	M-L/BMG	Business Model Generation	Dr Denyse Julien	12		5	Y	24/02/20	24/02/20	26/02/20	40	GCW	100				29/03/20	
23	M-P/FDP	Future of Digital Procurement	Dr Farooq Habib	12		5	Y	09/03/20	09/03/20	10/03/20	40	GCW	100				06/04/20	

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Module Number	Module code	Title	Module Leader	Contact hours5	Total hours delivered by Visiting Lecturers6	Credits	Is the module shared? Y/N	Calendar			Minimum Mark7 - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments9(100%)	Type of Assessment	Weighting of individual elements of multi-part assessment10	Assessment Submission and/or exam date11	Assessment / Exam Retake date
24	M-L/BDA	Big Data Analytics for Supply Chain Management	Prof Emel Aktas	12		5	Y	24/02/20	24/02/20	26/02/20		ICW	100				29/03/20	
25	M-L/CSC	Circular Supply Chains	Dr Denyse Julien	12		5	Y	13/01/20	13/01/20	17/01/20				MULTI	GCW GPRC	60 40	09/02/20 09/02/20	
26	M-L/RSM	Research Methods	Dr Denyse Julien	12		0	Y	27/03/20	27/03/20	04/09/20	N/A	AO	N/A				N/A	
27	M-L/THS	Thesis	Dr Denyse Julien	0		80	Y	08/04/20	08/04/20	02/06/20	50	THESIS	100				05/09/20	

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Logistics and Supply Chain Management

Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
M-L/SCSS	Supply Chain Strategy and Sustainability	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/PSP	Principles of Strategic Procurement	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/ACF	Accounting and Finance	Logistics and Supply Chain Management	Procurement and Supply Chain Management; Management; Management and Corporate Sustainability; Management and Entrepreneurship; Exec LSCM
M-L/ATS	Analytical Techniques for Supply Chain Management	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/FRT	Freight Transport	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/IOM	Inventory and Operations Management	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/ISB	Information Systems and e-Business	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/PMI	Project Management Introduction	Logistics and Supply Chain Management	Procurement and Supply Chain Management, Design Strategy and Leadership, Digital Design and Strategic Communication, Innovation and Creativity in Industry
M-P/BPO	Business Process Outsourcing	Procurement and Supply Chain Management	Procurement and Supply Chain Management
M-P/RSC	Designing and Managing Resilient Supply Chains	Procurement and Supply Chain Management	Procurement and Supply Chain Management
M-L/OUT	Logistics Outsourcing	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/PRR	Planning and Resourcing Road Freight Transport	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/HLR	Humanitarian Logistics	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/SIM	Simulation	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/SXS	Six Sigma	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/PFM	Performance Measurement in the Supply Chain	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/SOP	Sales and Operations Planning	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/RLO	Retail Logistics	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/SNCC	Social Network Analysis in a Supply Chain Context	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/BMG	Business Model Generation	Logistics and Supply	Procurement and Supply Chain

M-L/...		Chain Management	Management
M-L/FDP	Future of Digital Procurement	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/BDA	Big Data Analytics for Supply Chain Management	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/CSC	Circular Supply Chains	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/RSM	Research Methods	Logistics and Supply Chain Management	Procurement and Supply Chain Management
M-L/THS	Thesis	Logistics and Supply Chain Management	Procurement and Supply Chain Management

7. How are the ILOs assessed?

The course uses a range of assessment types including both individual and group coursework, exams and a thesis.

This approach has been adopted in order to ensure that students demonstrate their understanding through a wide range of learning techniques, but are not disadvantaged through any one approach.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.

Award ILOs / Module No.	ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO8	ILO9	ILO10	ILO11	ILO12	ILO13	ILO14	ILO15	ILO16	ILO17	ILO18
	PG Certificate in Supply Chain Management							PG Diploma in Logistics and Supply Chain Management				MSc in Logistics and Supply Chain Management						
1	✓		✓	✓	✓	✓	✓			✓	✓		✓					
2	✓	✓	✓		✓	✓	✓				✓		✓					
3				✓					✓									
4	✓	✓	✓	✓	✓		✓	✓	✓				✓					
5	✓		✓		✓	✓												
6	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓					
7		✓		✓							✓							
8		✓		✓		✓	✓			✓	✓							
9	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓						
10	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓						
11	✓			✓		✓					✓	✓	✓					
12	✓	✓	✓	✓		✓		✓	✓		✓	✓						
13	✓	✓				✓					✓	✓						
14	✓	✓				✓	✓				✓	✓						
16	✓	✓				✓	✓				✓	✓						
17	✓	✓	✓	✓		✓	✓				✓	✓	✓					
18	✓					✓					✓	✓		✓				
19	✓	✓	✓	✓		✓					✓	✓						

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20	✓	✓					✓	✓		✓	✓					
21	✓	✓	✓			✓	✓	✓		✓	✓					
22		✓				✓	✓	✓			✓					
23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓		
25	✓	✓	✓	✓			✓	✓		✓	✓	✓				
26					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
27					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)
N/A	N/A	N/A	N/A
		N/A	N/A

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

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Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. **What opportunities are graduates likely to have on completing the course?**

Graduates of the course are much sought after by employers. They include organisations from the 'not for profit' sector as well as a wide range of companies from the 'for profit' sector. Career progression for many of the graduates is often very rapid and a number have become logistics or supply chain directors for major international organisations.

COURSE SPECIFICATION

Cranfield University: Course Specifications
Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	MSc in Management and Corporate Sustainability

Date of first publication/latest revision:	March 2019

1. What is the course?

Course information

Course Title	Management and Corporate Sustainability
Course code	MSMPSFTC, PDMPSFTC, PCMPSFTC
Academic Year	2019/20
Valid entry routes	MSc
Additional exit routes	PgDip, PgCert
Mode of delivery	Full-time
Location(s)[1] of Study	Cranfield
School(s)	School of Management
Theme	Leadership and Management
Centre	Policy, Sustainability and Performance
Course Director	Dr Richard Adams
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ – Level 7 (Masters)
Benchmark Statement(s)	N/A
Registration Period(s) available	1 year
Course Start Month(s)	September

Institutions delivering the course

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

This course is delivered by the School of Management, Leadership and Management Theme, Centre for Policy, Sustainability and Performance where the research interests include business sustainability and risk management.

There are no academic partners for this course.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited by The Chartered Management Institute (CMI)

2. What are the aims of the course?

Cranfield University offers this course to add value to first degrees in Business and Management, Applied Science fields, Humanities and the Social Sciences. It seeks to develop candidates from different academic disciplines and backgrounds, with perhaps some relevant experience, who want to undertake a sustainability related qualification and future career.

The aim of the MSc in Management and Corporate Sustainability is to add value to applicants' first degrees by providing individuals with an integrated and critical awareness of management and organisations (e.g. private, public and third sector) and subsequently develop a specialised focus in corporate sustainability, and assisting them in pursing entry level managerial careers within those organisations. More specifically it seeks to ensure the:

- Provision of a comprehensive and advanced understanding of the range of global sustainability challenges facing organisations in public, private and third sectors.
- Integration and application of in-depth knowledge and understanding of management sub-disciplines to support the development of corporate responsibility and sustainability initiatives.
- Ability of students to synthesise large elements of data to inform management decision making.
- Development of students to apply management and applied science concepts for improving the effectiveness of organisations in addressing sustainability issues.
- Coalescence of previous work experience and knowledge, concepts and theories creatively to enhance corporate sustainability policy and practice.
- Development of student capabilities to manage complex sustainability agendas and apply them in a practical and pragmatic way within a specific organisational context.
- Enhancement of lifelong learning through the development of management, sustainability, communication, team working, negotiation, project planning capabilities and self-direction, so students acquire the necessary high-level skills employers favour for making contributions to business, public service and society.

This is a predominantly pre-work experience programme intended for graduates from a wide range of backgrounds who are interested in developing a sustainability management related career. This course may also appeal to candidates with first degrees that are not in a business academic discipline but, have some relevant sustainability experience and would benefit from obtaining a post-graduate qualification as a developmental step in their career.

3. What should students expect to achieve in completing the course?

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1. Demonstrate a systematic understanding of the principles of management and how these apply to corporate sustainability.
ILO 2. Use new management skills to support decision making in the development of corporate sustainability strategy.
ILO 3. Identify the appropriate sustainability management frameworks and methodologies to address specific sustainability issues.
ILO 4. Show ability for independent learning and an interest in advancing knowledge and understanding.
ILO 5. Demonstrate transferrable skills, including:- time management, general communication, negotiation, reflection, report writing and presentational and team working.

B. Postgraduate Diploma

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:
ILO 6. Integrate their learning from the PgCert.
ILO 7. Critically review the application of current corporate responsibility and sustainability management research and evaluate its relevance to organisational practice.
ILO 8. Exhibit originality and self-direction in the application of knowledge, including data and information collected by the student.
ILO 9. Comprehensively appraise leading corporate responsibility and sustainability academic literature.
ILO 10. Demonstrate additional transferrable skills, including; effective communication, consultancy, cultural awareness and interpersonal team working and leadership.

C. MSc

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:
ILO 11. Integrate their learning from the PgCert and PgDip and apply it to a research project.
ILO 12. Independently and confidently apply management and corporate sustainability theories, tools/techniques to a variety of situations including case studies, business simulations and the individual project.
ILO 13. Demonstrate the ability to create and adapt appropriate sustainability management frameworks and contextualise for a specific organisational issue accurately.
ILO 14. Display practical ability in self-directed research, data gathering, data analysis and interpretation, report writing and presentation skills.
ILO 15. Judge appropriate research methodologies for conducting research, and draw justifiable inferences from the data and analysis generated.
ILO 16. Critically synthesise and evaluate the academic research within and from related sustainability management disciplines.
ILO 17. Undertake independent study (including empirical work) on a relevant corporate sustainability domain, demonstrating the ability to plan, manage and execute an industrial (private, public or charitable sectors) or research based project with specified time scales.
ILO 18. Produce a thesis and critically evaluate the interpretations of the findings.

4. How is the course taught?

Overall the aim is to provide a varied, stimulating and experiential learning environment. All taught modules consist of formal lecturers, in-class case discussions, group and self-study. Group project work, reflective practice and class exercises are used to develop problem solving skills. Additional practical expertise will be provided by visiting fellows and guest speakers.

Each assessed module comprises 25 hours of class contact time with a further 75 hours of study time to consolidate learning and carryout assignments, giving a 100 notional learning hours.

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The teaching methods are:
- Lectures
- Student centred learning/reflection
- Case studies
- Video and audio materials
- Simulation
- Tutorials
- Problem based learning projects
- Individual research project with academic supervisors

In addition students will be supported in their learning and personal development by:
- Orientation week
- Library induction, referencing and plagiarism sessions
- PDP specifically supported through SOM careers development sessions and 2 modules specifically
  - Understanding and managing people and organisations
  - Management consulting
- Virtual Learning Environment
- Learning teams supported by an academic tutor

5. **What do students need to achieve in order to graduate?**

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A.   Postgraduate Certificate
The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Six modules from 1-12 which must include 2 of the following: • Leading Corporate Sustainability (8) • Creating Sustainable Organisations (9)* • Sustainability in Practice (10)* • Applied Science and Technology for Environmental Sustainability (11) * Modules 9 and 10 share an integrated assessment and therefore both must be taken to be considered towards the Award.	60
ELECTIVE MODULES:	
N/A	N/A
TOTAL:	**60**

B.   Postgraduate Diploma
The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits

COMPULSORY MODULES:	
Modules 1-12	120
ELECTIVE MODULES:	
N/A	N/A
TOTAL:	120

C.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Modules 1-12 Thesis 13	120 80
ELECTIVE MODULES:	
N/A	N/A
TOTAL:	200

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does not have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment on the first attempt for the significant majority of the taught assessments, noting that:
  - o   if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);

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[3]   For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4]   Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

- if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
- it is not permissible for you to fail an elective module and then proceed to take a different elective module in its place.

- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. How is the course structured?

The course will be offered on a full-time basis only. Full-time students register for the course in September and are expected to complete the course within 12 calendar months.

Each assessed module is based on 100 notional learning hours, comprising 25 class contact hours with a further 75 hours of private study to consolidate learning and to carry our assessments.

The majority of the course modules will be taught as a series of lectures within 1 or 2 week blocks within in first 3 terms of the 4 term framework. The integrating Research Methods course will be taught in term 3. The international study tour is also planned for term 3 (yet to be confirmed). The individual thesis project is undertaken during terms 3 and 4. Please note there may be some variation to module dates due to the scheduling of timetables across a number of academic programmes.

Course modules– all Occ A unless specified

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment							
								Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates		
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	M-T/MMT	Marketing Management	Dr Ahmed Shaalan	20		10	Y	28/01/2020	28/01/2020	12/02/2020	40	ICW	100				13/03/2020	
2	M-T/OBA	Organisational Behaviour: Application	Dr Richard Kwiatkowski	20		10	Y	15/10/2019	15/10/2019	08/11/2019	40	ICW	100				04/12/2019	
3	M-L/ACF Occ C	Accounting and Finance	Dr Simon Templar	20		10	Y	08/10/2019	08/10/2019	13/12/2019	40	EX	100				W/C 16/12/2019	
4	M-E/SEM	Social Entrepreneurship	Dr Richard Adams	20		10	Y	14/04/2020	14/04/2020	21/04/2020	40			MULTI 100	GRES50 RP	50 50	07/05/2020 22/05/2020	

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment (Independent Assessment)	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment (Multi-part)	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
5	M-T/ECM	Economics for Managers	Prof Catarina Figueira	20		10	Y	18/11/2019	18/11/2019	03/12/2019	40	GCW	100				12/12/2019	
6	M-T/MNO	Managing Operations	Dr Abdelkader Aoufi	20		10	Y	14/10/2019	14/10/2019	01/11/2019	40	GCW	100				22/11/2019	
7	M-T/STG	Strategic Management	Dr Richard Schoenberg	20		10	Y	17/02/2020	17/02/2020	10/03/2020	40	EX	100				W/C 23/03/2020	
8	M-T/LCSB19	Leading Corporate Sustainability	Dr Rosina Watson	20	5	10	Y	11/11/2019	11/11/2019	18/11/2019	40	ICW	100				06/12/2019	
9	M-C/CSO	Creating Sustainable Organisations	Prof David Grayson	20		10	N	13/01/2020	13/01/2020	21/01/2020	40			Integrated Assessment MULTI 100	GPRES	70	14/02/2020	
10	M-C/SIP	Sustainability in Practice	Prof David Grayson	20		10	N	23/01/2020	23/01/2020	29/01/2020					ICW	30	28/02/2020	
11	M-C/AST	Applied Science and Technology for Environmental Sustainability	Prof Phil Longhurst	20		10	N	25/11/2019	25/11/2019	29/11/2019	50	ICW	100				24/01/2020	
12	M-T/EBM	Evidence-based Management	Dr Valentina Battista	20		10	Y	27/04/2020	27/04/2020	20/05/2020	40	GCW	100				19/06/2020	
13	M-C/THS	Thesis	Dr Richard Adams	10		80	N	06/04/2020	06/04/2020	02/09/2020	50	THESIS	100				11/09/2020	

Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Course(s)/programme(s) that share the module
M-L/ACF	Accounting and Finance	Logistics and Supply Chain Management	Procurement and Supply Chain Management; Business and Strategic Leadership; Management; Management and Entrepreneurship
M-T/MMT	Marketing Management	Management	Management, Management and Entrepreneurship
M-T/OBA	Organisational Behaviour: Application	Management	Management, Management and Entrepreneurship
M-E/SEM	Social Entrepreneurship	Management and Entrepreneurship	Management and Corporate Sustainability
M-T/ECM	Economics for Managers	Management	Management and Corporate Sustainability
M-T/MNO	Strategic Operations Leadership	Management	Management and Corporate Sustainability, Management and Entrepreneurship
M-T/STG	Strategic Management	Management	Management and Corporate Sustainability, Management and Entrepreneurship
M-T-LCS	Leading Corporate Sustainability	Management	Management and Corporate Sustainability
M-T/EBM	Evidence based Management	Management	Management, Management and Entrepreneurship

7. How are the ILOs assessed?

The following assessment types are utilised:

The course uses a range of assessment types. Students can expect to have 3 written examinations, 13 pieces of assessment by submitted work and one assessment by presentation (although there are formative assessment by presentation and debate) or no assessment by viva.

This mixed approach of assessment combined with examinations has been adopted in order to adopt a range of assessment with presentations which are not formally assessed.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.

Module No. \ Award ILOs	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6	ILO 7	ILO 8	ILO 9	ILO 10	ILO 11	ILO 12	ILO 13	ILO 14	ILO 15	ILO 16	ILO 17	ILO 18
	Postgraduate Certificate					Postgraduate Diploma					MSc							
1	√				√	√				√								
2	√				√	√				√								
3	√				√	√				√								
4						√	√	√	√	√	√							
5	√				√	√				√								
6	√				√	√				√								

#																	
7	√				√	√			√								
8	√		√		√	√	√		√	√							
9	√		√		√	√	√		√	√							
10	√	√	√	√	√	√	√	√	√	√							
11	√	√	√		√	√	√		√	√							
12													√	√	√		√
13		√	√	√			√	√	√	√	√	√	√	√	√	√	√

(Module numbers should correspond with those used in the Course module table above.)

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)
Integrated Assignment 1 • Group Presentation	• Module 9 - Creating Sustainable Organisations • Module 10 - Sustainability in Practice	GPRES	70%
• Individual Reflection		Individual Reflection	30%

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review. For collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focussed Review which looks at each course in depth. In addition occasional site inspection visits are made.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

9. **What opportunities are graduates likely to have on completing the course?**

The course will provide a comprehensive and integrated understanding/knowledge of sustainability management with the practical skill set commensurate with entry to a first line managerial post. As such, many of the students may pursue graduate entry schemes but will equally be attractive to large and SME commercial, public sector and charitable sectors where the managerial component will add value to the student's technology based or single disciplined first degree. Evidence from current recruitment patterns for our young MSc students (on specialist MSc) already shows the trend toward graduate entry schemes and many companies transferring their talent search to post-graduates rather than fresh graduates alone.

COURSE SPECIFICATION

Cranfield University: Course Specifications
Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	MSc in Management and Entrepreneurship

Date of first publication/latest revision:	March 2019

1. What is the course?

Course information

Course Title	MSc in Management and Entrepreneurship
Course code	MSMERFTC, PDMERFTC, PCMERFTC, MSMEOPTC, MSMEOFTC
Academic Year	2019-20
Valid entry routes	MSc
Additional exit routes	PgDip, PgCert
Mode of delivery	Full-time, Part-time
Location(s)[1] of Study	Cranfield Campus and Muscat University, Oman
School(s)	School of Management
Theme	Leadership and Management
Centre	Bettany Centre for Entrepreneurship
Course Director	Dr Oksana Koryak
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ level 7 (Masters)
Benchmark Statement(s)	N/A
Registration Period(s) available	Full-time MSc – one year, Part-time MSc – up to three years
Course Start Month(s)	September

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

Version 1.0 April 2019

Institutions delivering the course
This course is delivered by the Bettany Centre for Entrepreneurship at the School of Management (SOM) where the research interests include:

- Growth of entrepreneurial ventures
- Forecasting the entrepreneurial sector
- Entrepreneurial finance and de-risking ventures
- Intellectual property rights and market performance
- The impact of business planning on new venture performance
- Entrepreneurial Strategy
- Family business management
- Corporate entrepreneurship
- Women's entrepreneurship

Teaching and/or assessment is provided by SOM Faculty as well as selected visiting fellows (already teaching on the MSc in Management (MiM) programme or working in other renowned universities in the field of Entrepreneurship and Enterprise Development). Thesis projects will be mainly supervised by Bettany Centre for Entrepreneurship faculty and those PhD students who have a Recognised Teacher Status. The studnets will have an option either to do a research project or to create a business plan for a new entrepreneurial venture or to conduct a growth audit for an existing entrepreneurial venture.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited by The Chartered Management Institute (CMI).

2. <u>What are the aims of the course?</u>

In this world of downsizing, restructuring and technological change, notions of traditional careers have been challenged. More and more individuals are aspiring to create their own world of unlimited opportunities. Not only individuals, but governments have recognised the positive impact of entrepreneurship on the economic development. There's no single Government (in either the developed or the developing world), which is not paying at least lip service to entrepreneurship promotion and enterprise development. Because they have realised that entrepreneurs are empowering change through new business models and bringing hope to millions of people world-wide. The research shows that majority of entrepreneurial ventures fail in the first few years of their existence. The most of the failures are because their owner-managers lack basic management skills.

They do things on hit and trial basis, by learning these skills in the wild - and that's where Cranfield's MSc Management and Entrepreneurship Course makes a difference – by equipping our students with both the entrepreneurial characteristics and traits as well as management skills so that they can start and run their businesses in an effective and efficient manner.

Cranfield University offers this course in order to add value to first degrees in Business and Management, Economics, Applied Science fields, Humanities and Social Sciences. It seeks to develop candidates from different academic disciplines and backgrounds, with perhaps some relevant although limited experience, who want to either start their own business or grow their family business entrepreneurially, or manage a large organisation in an entrepreneurial manner.

The aim of the MSc in Management and Entrepreneurship is to add value to applicants' first degrees by providing individuals with an integrated and critical awareness of management and organisations (e.g. private, public and third sector) and subsequently, develop a specialised focus in entrepreneurship, and assisting them in pursing an entrepreneurial career.   More specifically it seeks to ensure the:

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- Provision of a comprehensive and advanced understanding of the impact of entrepreneurship and entrepreneurial processes at international, regional and national levels, the community level and the level of firm and individual.
- Integration and application of in-depth knowledge and understanding of management sub-disciplines to support the start-up and growth of entrepreneurial ventures.
- Provision of opportunities for students to develop critical perspectives on theories and to review and evaluate the appropriateness and potential value of concepts, models and techniques that underpin the constituent entrepreneurship and management subjects.
- Development of student capabilities to critically analyse the current issues in the field of management and entrepreneurship.
- Enhancement of lifelong learning through the development of management and entrepreneurship knowledge, communication, team working, negotiation, project planning capabilities and self-direction, so students acquire the necessary high-level skills employers favour for making contributions to their own and/or family businesses, social enterprises, or large organisations interested to introduce entrepreneurial culture as a tool for business growth.

This is a predominantly pre-work experience programme intended for graduates from a wide range of backgrounds including science, engineering and technology who are interested in developing a career in entrepreneurship and enterprise development. This course may also appeal to candidates with first degrees that are not in a business academic discipline but that would benefit from obtaining a post-graduate qualification that combines management and entrepreneurship as a developmental step in their career.

This course has been designed not only to teach 'about' theory of entrepreneurship. We aim to prepare our student 'for' spotting opportunities, generating ideas and being creative and innovative enough to raise resources to implement those ideas successfully. We will achieve this goal 'through' a range of inclusive and interactive teaching pedagogies and learning methods – delivered by a team of entrepreneurial faculty members, who have either started and managed their own businesses or have been engaged with real-life entrepreneurs, either through conducting research, or by providing consultancy, coaching, and mentoring.

3. <u>What should students expect to achieve in completing the course?</u>

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1. Demonstrate a systematic application and a critical awareness of current management and entrepreneurship research and to evaluate its relevance to industrial and commercial practice.

ILO 2. Show a conceptual understanding that enables the student to evaluate critically current research and/or methodologies, develop critiques of them, and, where appropriate, adapt them.

ILO 3. Demonstrate the ability to identify the appropriate management and entrepreneurship frameworks for an issue or situation under consideration, and to apply the tool or technique accurately.

ILO 4. Undertake and show an ability for independent learning and an interest in advancing their knowledge and understanding and developing new skills to a high level.

ILO 5. Justify and defend the ability for independent learning and an interest in advancing knowledge and understanding and developing new skills to a high level demonstrated through critical thinking, strategic comparison and review.

ILO 6. Evaluate the entrepreneurial characteristics, entrepreneurial processes, and the entrepreneurial event in different social, economic, political and legal environments.

B. **Postgraduate Diploma**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 7. Select and apply different tools available for creating new business opportunities, and of different forms of support available to entrepreneurs and how to utilise that support in an effective manner.

ILO 8. Independently apply entrepreneurship theories, concepts, models, tools and techniques to a variety of situations including case studies, business simulations and the individual project.

ILO 9. Adapt appropriate management and entrepreneurship frameworks and contextualise them for specific issues accurately in start-up and growth stages of entrepreneurial ventures.

ILO 10. Exhibit originality in the application of knowledge, together with a practical understanding of how established techniques of research and inquiry in entrepreneurship are used to create and interpret knowledge in the discipline.

ILO 11. Show self-direction and originality in tackling and solving problems both in the start-up and growth stages of entrepreneurial ventures.

C. **MSc**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 12. Integrate their learning from the PgCert and PgDip and apply it to a research project or to prepare a business plan.

ILO 13. Critically evaluate and synthesise the published literature within and across the entrepreneurship and management disciplines either for their research project or for preparing a business plan.

ILO 14. Conduct independent study on a relevant entrepreneurship/management domain, demonstrating the ability to plan, manage and execute a research-based project with specified timescales, or prepare a detailed business plan for a new entrepreneurial venture demonstrating an ability to plan, access and mobilise resources for new venture.

ILO 15. Produce a high-quality thesis or a business plan and critically evaluate the interpretations of the data available.

4. **How is the course taught?**

Overall the aim is to provide a varied, stimulating and experiential learning environment. All taught modules consist of formal lectures, in-class case discussions, group and self-study. Group project work, reflective practice and class exercises are used to develop problem-solving skills. Additional practical expertise will be provided by guest speakers.

Each assessed module comprises 20 hours of class contact time with a further 80 hours of study time to consolidate learning and carry out assignments, giving a 100 notional learning hours.

The teaching methods are:
• Lectures
• Student centred learning/reflection
• Case studies
• Video and audio materials
• Simulation
• Tutorials
• Problem-based learning projects
• Individual research project with academic supervisors

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In addition to the teaching methods outlined above, students will be supported in their learning and personal development by:
- Orientation week
- Library induction, referencing and plagiarism sessions
- Virtual Learning Environment
- Learning teams supported by an academic tutor

5. **What do students need to achieve in order to graduate?**

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

Management and Entrepreneurship (Cranfield) (Full-time only)

A.   MSc

An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Modules 1–12 Module 13 Thesis 14 (Thesis)	120 0 80
ELECTIVE MODULES:	
N/A	N/A
TOTAL:	**200**

Management and Entrepreneurship (Muscat) (Full-time and Part-time)
B.   MSc

An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Modules 1- 12 Module 13 Module 14 (Thesis)	120 0 80
ELECTIVE MODULES:	
N/A	N/A
TOTAL:	**200**

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
  - o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  - o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
  - o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. <u>How is the course structured?</u>

Full-time students register for the course in September and are expected to complete the course within 12 calendar months.

Each assessed module is based on 100 notional learning hours, comprising 20 class contact hours with a further 80 hours of private study to consolidate learning and to carry our assessments.

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[3] For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

Course modules – all Occ A unless specified

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Management and Entrepreneurship (Cranfield)

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Assessment							
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	M-T/MMT	Marketing Management	Dr Ahmed Shaalan	20		10	Y	28/01/2020	28/01/2020	12/02/2020	40	ICW	100				13/03/2020	
2	M-T/OBA	Organisational Behaviour: Application	Dr Richard Kwiatkowski	20		10	Y	15/10/2019	15/10/2019	08/11/2019	40	ICW	100				04/12/2019	
3	M-L/ACF Occ C	Accounting and Finance	Dr Simon Templar	20		10	Y	08/10/2019	08/10/2019	13/12/2019	40	EX	100				W/C 16/12/2019	
4	M-E/ENT	Entrepreneurship	Dr Oksana Koryak	20		10	N	11/11/2019	11/11/2019	14/11/2019	40	ICW	100				09/12/2019	

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[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
5	M-E/ENF	Entrepreneurial Finance	Dr Stephanie Hussels	20		10	Y	18/11/2019	18/11/2019	02/12/2019	40 40	GCW	100				12/12/2019	
6	M-E/MBG	Managing Business Growth	Dr Oksana Koryak	20		10	Y	13/01/2020	13/01/2020	17/01/2020	40	ICW	100				21/02/2020	
7	M-T/MNO	Managing Operations	Dr Abdelkader Aoufi	20		10	Y	14/10/2019	14/10/2019	01/11/2019	40	GWC	100				22/11/2019	
8	M-T/STG	Strategic Management	Dr Richard Schoenberg	20		10	Y	17/02/2020	17/02/2020	10/03/2020	40	EX	100				W/C 23/03/20	
9	M-T/DIN	Disruptive Innovation	Dr Leon Williams	20		10	Y	02/03/2020	02/03/2020	05/03/2020	40			100 MULTI	GCW ICW	40 60	01/05/20 01/05/20	
10	M-E/CEN	Corporate Entrepreneurship	Dr Oksana Koryak	20		10	N	27/01/2020	27/01/2020	31/01/2020	40	ICW	100				28/02/200	
11	M-E/FBM	Family Business Management	Dr Stephanie Hussels	20		10	N	20/01/2020	20/01/2020	13/02/2020	40	GCW	100				06/03/20	
12	M-E/SEM	Social Entrepreneurship	Prof Richard Adams	20		10	N	14/04/2020	14/04/2020	21/04/2020	40			100 MULTI	GPRES RP	50 50	07/05/20 22/05/20	
13	M-T/EBMA	Evidence-based Management	Dr Valentina Battista	20		0	Y	27/04/2020	27/04/2020	20/05/2020	N/A	AO	N/A				N/A	

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment							
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
14	M-E/THS	Thesis (Business Plan)	Dr Oksana Koryak	10		80	N	06/04/2020	06/04/2020	31/08/2020	50	THESIS	100				11/09/20	

Management and Entrepreneurship (Muscat)

Module Number	Module code	Title	Module Leader	Contact hours[12]	Total hours delivered by Visiting Lecturers [13]	Credits	Is the module shared? Y/N	Calendar Module Start Date (eg Pre-course task)	Calendar 'Residential' Start Date	Calendar 'Residential' End Date	Minimum Mark[14] - 40% or 50%	Assessment: Independent Assessment Type of Assessment	Weighting within module[15] (%) of Independent assessments	Multi-part Assessment: Weighting within module of multi-part assessments[16]	Type of Assessment	Weighting of individual elements of multi-part assessment[17]	Submission dates: Assessment Submission and/or exam date[18]	Assessment / Exam Retake date
1	M-T/MMT Occ B	Marketing Management	Dr Ahmed Shaalan	20		10	Y	FT/PT 01/12/2019	FT/PT 01/12/2019	FT/PT 05/12/2019	40	ICW	100				02/01/2020	
2	M-T/OBA Occ B	Organisational Behaviour: Application	Dr Deirdre Anderson	20		10	Y	FT/PT 27/10/2019	FT/PT 27/10/2019	FT/PT 31/10/2019	40	ICW	100				28/11/2019	
3	M-L/ACF Occ B	Accounting and Finance	Dr Zeina Al-Ahmed (Delivered locally)	20		10	Y	FT/PT 12/01/2020	FT/PT 12/01/2020	FT/PT 16/01/2020	40	EX	100				Exam Week W/C 09/03/2020	
4	M-E/ENT Occ B	Entrepreneurship	Dr Oksana Koryak	20		10	Y	FT/PT 07/10/2019	FT/PT 07/10/2019	FT/PT 10/10/2019	40	ICW	100				07/11/2019	
5	M-E/ENF Occ B	Entrepreneurial Finance	Dr Stephanie Hussels	20		10	Y	FT/PT 02/02/2020	FT/PT 02/02/2020	FT/PT 06/02/2020	40 40	GCW	100				05/03/2020	

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[12] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[13] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[14] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[15] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[16] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[17] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[18] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

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Module Number	Module code	Title	Module Leader	Contact hours[12]	Total hours delivered by Visiting Lecturers [13]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[14] - 40% or 50%	Independent Assessment: Type of Assessment	Weighting within module[15] (%) of Independent assessments	Weighting within module of multi-part assessments	Multi-part Assessment: Type of Assessment	Weighting of individual elements of multi-part assessment[17]	Assessment Submission and/or exam date[18]	Assessment / Exam Retake date
6	M-E/MBG Occ B	Managing Business Growth	Dr Sergey Portyanko	20		10	Y	FT/PT 15/03/2020	FT/PT 15/03/2020	FT/PT 19/03/2020	40	ICW	100				23/04/2020	
7	M-T/MNO Occ B	Managing Operations	Dr Abdelkader Aoufi	20		10	Y	FT/PT 10/11/2019	FT/PT 10/11/2019	FT/PT 14/11/2019	40	GCW	100				12/12/2019	
8	M-T/STG Occ B	Strategic Management	Dr Richard Schoenberg	20		10	Y	FT/PT 10/05/2020	FT/PT 10/05/2020	FT/PT 14/05/2020	40	EX	100				Exam week W/C 08/06/2020	
9	M-T/DIN Occ B	Disruptive Innovation	Dr Leon Williams	20		10	y	FT/PT 19/01/2020	FT/PT 19/01/2020	FT/PT 23/01/2020	40			100 MULTI	GCW ICW	40 60	20/02/2020 20/02/2020	
10	M-E/CEN Occ B	Corporate Entrepreneurship	Dr Oksana Koryak	20		10	N	FT/PT 09/02/2020	FT/PT 09/02/2020	FT/PT 13/02/2020	40 40	ICW	100				12/03/2020	
11	M-E/FBM Occ B	Family Business Management	Dr Stephanie Hussels	20		10	N	FT/PT 23/03/2020	FT/PT 23/03/2020	FT/PT 27/02/2020	40 40	GCW	100				16/04/2020	
12	M-E/SEM Occ B	Social Entrepreneurship	Dr Richard Adams	20		10	N	FT/PT 19/04/2020	FT/PT 19/04/2020	FT/PT 23/04/2020	40			100 MULTI	GPRES RP	50 50	21/05/2020 21/05/2020	
13	M-T/EBMA Occ B	Evidence-based Management	Dr Nicholas Hubbard (Delivered locally)	20		0	Y	FT/PT 24/11/2019	FT/PT 24/11/2019	FT/PT 27/11/2019	N/A	AO	N/A					
14	M-E/THS Occ B	Thesis (Business Plan)	Dr Oksana Koryak (Lead)	10		80	N	FT 19/04/2020	FT 19/04/2020	FT 31/08/2020	50	THESIS	100				11/09/2020	

Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
M-L/ACF	Accounting and Finance	Logistics and Supply Chain Management	Procurement and Supply Chain Management; Business and Strategic Leadership; Management; Management and Corporate Sustainability, Management and Entrepreneurship
M-T/MST	Marketing Strategy	Management	Management and Corporate Sustainability, Management
M-T/OBA	Organisational Behaviour: Application	Management	Management and Corporate Sustainability, Management
M-T/MNO	Managing Operations	Management	Management and Corporate Sustainability, Management
M-T/STG	Strategic Management	Management	Management and Corporate Sustainability, Management
M-T/DIN	Disruptive Innovation	Management	Management
M-T/EBMA	Evidence-based Management	Management	Management and Corporate Sustainability, Management

7. **How are the ILOs assessed?**

The course uses a range of assessment types. Students can expect to have 4 written examinations and 11 assignments, of which one is the thesis. No elements of assessment are done by presentation (although there are formative assessments by presentation and debate) or by viva.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.

A. Postgraduate Certificate

Award ILOs / Module No.	ILO 1.	ILO 2.	ILO 3.	ILO 4.	ILO 5.	ILO 6.	ILO 7.	ILO 8.	ILO 9.	ILO 10.	ILO 11.	ILO 12.	ILO 13.	ILO 14.	ILO 15.
1	√	√	√	√	√										
2	√	√	√	√	√										
3	√	√	√	√	√										
4	√	√	√	√	√	√	√	√							
5	√	√	√	√	√	√	√	√							
6	√	√	√	√	√	√	√	√							

B. Postgraduate Diploma

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Module No.	ILO 1.	ILO 2.	ILO 3.	ILO 4.	ILO 5.	ILO 6.	ILO 7.	ILO 8.	ILO 9.	ILO 10.	ILO 11.	ILO 12.	ILO 13.	ILO 14.	ILO 15.
7	√	√	√	√	√										
8	√	√	√	√	√										
9	√	√	√	√	√		√								
10						√	√	√	√	√	√				
11						√	√	√	√	√	√				
12						√	√	√	√	√	√				

C. MSc

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Module No.	ILO 1.	ILO 2.	ILO 3.	ILO 4.	ILO 5.	ILO 6.	ILO 7.	ILO 8.	ILO 9.	ILO 10.	ILO 11.	ILO 12.	ILO 13.	ILO 14.	ILO 15.
13	NOT ASSESSED														
14	√				√	√	√	√	√		√	√	√	√	√

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. What opportunities are graduates likely to have on completing the course?

The course will provide a comprehensive and integrated understanding/knowledge of entrepreneurship and management with the practical skill set suitable for either business start-up/growth or working in a large organisation as an intrapreneur. Once graduate, many of the students may be able to launch and grow their own businesses or may become actively involved in the management of their family's business. In addition, there is even a possibility to pursue a career as a social entrepreneur or a corporate entrepreneur/intrapreneur to lead and mange a larger organisation in an executive/employee capacity.

COURSE SPECIFICATION

Cranfield University: Course Specifications

Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	MSc in Management and Information Systems

Date of first publication/latest revision:	July 2019

1. What is the course?

Course information

Course Title	MSc in Management and Information Systems
Course code	MSMGIFTC, MSMGIPTC, PDMGIFTC, PDMGIPTC, PCMGIFTC, PCMGIPTC
Academic Year	2019/20
Valid entry routes	MSc, PgDip, PgCert
Additional exit routes	PgDip, PgCert
Mode of delivery	Full-time, Part-time
Location(s)[1] of Study	Cranfield University
School(s)	School of Aerospace, Transport and Manufacturing
Theme	Manufacturing
Centre	Through-life Engineering Services Institute
Course Director	Dr Ip-Shing Fan
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ Level 7 (Masters)
Benchmark Statement(s)	Not Applicable
Registration Period(s)	Full-time MSc - one year, Part-time MSc - up to three years, Full-time

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[1] If any part of this course is delivered at another site, please note which one(s) here
[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

available	PgDip - one year, Part-time PgDip - two years, Full-time PgCert - one year, Part-time PgCert - two years
Course Start Month(s)	Full-time: October. Part-time: throughout the year

Institutions delivering the course

This course is delivered by The School of Aerospace, Transport and Manufacturing, Manufacturing Theme, Sustainable Manufacturing Systems Centre where the research interests include:
- Manufacturing Systems Engineering
- Product-Service Systems
- Supply Chain Management
- Enterprise Scale IT Systems
- Simulation and Modelling
- Innovation Management

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited formally by Institution of Mechanical Engineers (IMechE) up to and including Academic year 2019-20, Institution of Engineering and Technology (IET) up to and including Academic year 2019-20, Royal Aeronautical Society (RAeS) up to and including Academic year 2019-20.

2. **What are the aims of the course?**

The aim of this course is:

- To provide graduates with knowledge and skills required to enable them to apply management and information systems in an effective way to solve management problems in industrial, commercial and governmental organisations.
- To further develop suitably trained and qualified individuals, and enable them to make an immediate contribution to a company's performance and operation, and to progress into senior management positions.

Cranfield University offers this course in order to:

- Provide graduates with the knowledge and skills necessary to enable them to understand the theories behind the major tools and techniques available for problem solving within Management and Information Systems.
- Equip students to understand the needs addressed by the above tools and techniques.
- Expose students to tools and techniques to identify and analyse management problems, propose solutions and to select and implement a solution to support the business need.
- Develop students' ability to demonstrate, through group project and individual thesis, expertise in solving management problems.

Postgraduate Diploma (PgDip) and Postgraduate Certificate (PgCert) exit routes are provided for students who wish to access only parts of the course provided.

This programme is intended for the following range of students:

- Those wishing to work nationally or internationally to practice effective technology enabled management.
- Those wishing to work in information technology solution vendors and implementation consultancy.
- Those wishing to work in the public/government sector on industry competitiveness and productivity issues.

3. What should students expect to achieve in completing the course?

Award intended learning outcomes (ILOs) (skills and knowledge).

A. Postgraduate Certificate
In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1.   Demonstrate an awareness of the principles and theories behind the major techniques and tools available for problem solving in the areas of Management and Information Systems.

ILO 2.   Critically evaluate the theory behind; and the selection of appropriate analysis, design and development tools and apply them to solve business problems in terms of Information Systems and/or organisations.

ILO 3.   Critically evaluate previous and current research and methodologies, and determine their relevance to a given manufacturing, industrial, business or commercial problem.

ILO 4.   Acquire and use Data, Information and Knowledge effectively, and apply appropriate techniques and tools to identify and analyse management problems and to propose solutions.

ILO 5.   Use independent learning skills to continuously advance their knowledge and understanding of Management and Information Systems.

B. Postgraduate Diploma
In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 6.   Demonstrate key management and personal management skills needed to influence and implement change.

ILO 7.   Demonstrate team based project skills to develop IT enabled management solutions (Group project participants only).

C. MSc
In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 8.   Undertake independent research on a subject relevant to management and information systems involving project planning, development of new skills, critical evaluation of literature, evaluation of results, and discussion of findings and writing a thesis

4. How is the course taught?

The MSc course has three components: taught modules (40%), group projects (20%), and an individual research project (40%). The taught modules are typically delivered in one-week blocks between October and February.

The teaching methods include lectures, case studies, group exercises, field visits, seminars and computer-based demonstrations and exercises. All students attend a week of introductory

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lectures (given during the first week of the course). Within this induction week, students will be introduced to personal development planning and asked to reflect on their transferable skills and to take ownership of their personal development during the course. Induction is followed by 8 assessed modules, each module has a one week residential component plus pre-work and post-study.

All MSc students undertake a Group Project (. The Group projects are group-based activities typically undertaken for 12 weeks between February and April. The projects are designed to integrate knowledge, understanding and skills from the taught modules in a real-life situation. The Group Project will typically involve a team of between 5 and 8 students, working to investigate a business opportunity or solve a business problem. Part-time Students are encouraged to take the Group Project component and only in exceptional circumstances, and with approval from the Group Project Co-ordinator, will be permitted to replace the Group Project with an individual dissertation. The topic is to be agreed between the University and the student.

All MSc students will undertake an individual research project (thesis project) under the supervision of a member of academic staff. For the individual research project, each student is allocated a supervisor. Guidance sessions are provided as to what is required from the thesis and oral presentation.

5. **What do students need to achieve in order to graduate?**

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A.   **Postgraduate Certificate**
The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Modules 2, 3, 4 and 6	40
ELECTIVE MODULES:	
Modules 5, 7, 8 and 9 (Select 2)	20
RECOMMENDED MODULE:	
Induction	0
TOTAL:	60

B.   **Postgraduate Diploma**
The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

        FULL TIME STUDENTS

Description	Credits

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COMPULSORY MODULES:	
Modules 2-9 Group Project (10a)	80 40
ELECTIVE MODULES:	
None	
RECOMMENDED MODULE:	
Induction	0
TOTAL:	120

PART TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 2-9	80
ELECTIVE MODULES:	
Group Project (10a) or Dissertation (10b)	40
RECOMMENDED MODULE:	
Induction	0
TOTAL:	120

C.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

FULL TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 2-9 Group Project (10a) Individual Research Project (11)	80 40 80
ELECTIVE MODULES:	
None	
RECOMMENDED MODULE:	
Induction	0
TOTAL:	200

PART TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 2-9 Individual Research Project (11)	80 80
ELECTIVE MODULES:	
Group Project (10a) or Dissertation (10b)	40
RECOMMENDED MODULE:	
Induction	0

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TOTAL:	200

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
  - o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  - o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
  - o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. <u>How is the course structured?</u>

Full-time students register for the course in October and are expected to complete the course within 12 calendar months.

This course is also offered on a part-time basis. In such a situation, students typically complete the various components of the course over two or three years. The typical case is to complete

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[3] For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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four taught modules plus a Dissertation in year 1 and the remainder of the modules plus the Thesis in year two and/or year 3.

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Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	I-MAN-INWK	Induction	Dr Konstantinos Salonitis	18		0	Y	30/09/19	30/09/19	04/09/19	N/A	AO	N/A				N/A	
2	I-MNU-A1031	Enterprise Systems	Dr Essam Shehab	32		10	Y	21/10/19	21/10/2019	25/10/2019	40	EX	100				16/12/19	Manufacturing resit exams will be during week commencing: 11/05/20.

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[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%..

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
3	I-MNU-A1034	Operations Management	John Patsavellas	32		10	Y	07/10/19	07/10/19 Occ A	11/10/19	40	EX	100				11/12/19	Manufacturing resit exams will be during week commencing 11/05/20
4	I-MNU-A1074	Business Process Analysis and Engineering	Dr Ip-Shing Fan	32		10	Y	04/11/19	04/11/19	08/11/19	40	ICW	100				02/12/19	Re-assessment date to be set by agreement of the Module Leader as/when required.
5	I-MNU-A1018	General Management	Mr Matthew Caffrey	32		10	Y	02/12/19	02/12/19	06/12/18	40	EX	100				10/01/20	Manufacturing resit exams will be during week commencing 11/05/20
6	I-MNU-A1035	Business Change Management	Dr Ip-Shing Fan	32		10	N	11/11/19	11/11/19	15/11/19	40	ICW	100				09/12/19	Re-assessment date to be set by agreement of the Module Leader as/when required.
7	I-MNU-A1007	Business Data Analytics	Dr Ip-Shing Fan	32		10	N	13/01/20	13/01/20	17/01/20	40	ICW	100				10/02/20	Re-assessment date to be set by agreement of the Module Leader

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	Calendar		Minimum Mark[7] - 40% or 50%	Independent Assessment		Multi-part Assessment			Submission dates	
									'Residential' Start Date	'Residential' End Date		Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
																		as/when required.
8	I-KME-A1037	Enterprise Modelling	Dr John Ahmet Erkoyuncu	32		10	Y	25/11/19	25/11/2019	29/11/19	40			100 MULTI	ICW GCW	60 40	06/01/20 06/12/19	Re-assessment date to be set by agreement of the Module Leader as/when required.
9	I-MNU-A1037	Project and Programme Management	Dr Ip-Shing Fan	32		10	Y	27/01/20	27/01/20	31/01/20	40			100 MULTI	GCW ICW	30 70	10/02/20 24/02/20	Re-assessment date to be set by agreement of the Module Leader as/when required.
10a	I-MAT-GRPP	Group Project	Dr David Ayre	20		40	Y	10/02/20	10/02/20 Occ A FT	28/04/20 FT	50	GCW ICW	80 20		GPRES GPROJ ICW Observed behaviour	80 20 50 50	28/04/20 05/05/20 05/05/20 05/05/20	
			Dr Supriyo Ganguly						10/02/20 Occ B PT	28/08/20 PT	50	GCW ICW	80 20		GPRES GPROJ ICW Observed behaviour	80 20 50 50	31/08/20 02/09/20 02/09/20 02/09/20	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers [6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
10b	I-MAT-DISS	Dissertation for Part Time Students	Dr Konstantinos Salonitis	20		40	Y	10/02/20	10/02/20	28/08/20	50	ICW	100				28/08/20	
11	I-MNU-THESIS	Individual Research Project	Dr Muhammad Khan	20		80	Y	10/02/20	Occ A = PT 10/02/20	PT 28/08/20	50	THESIS OR	90 10				28/08/20 01/09/20	
			Dr Muhammad Khan					01/05/20	Occ B = FT 01/05/20	FT 28/08/20	50	THESIS OR	90 10				28/08/20 01/09/20	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
I-MAN-INWK	Induction	Manufacturing Systems and Management Programme	Engineering & Management of Manufacturing Systems, Aerospace Manufacturing, Global Product Development and Management, Cyber-Secure Manufacturing
I-MNU-A1031	Enterprise Systems	Management and Information Systems	Engineering & Management of Manufacturing Systems,
I-MNU-A1074	Business Process Analysis and Engineering	Management and Information Systems	Engineering Competence
I-MNU-A1034	Operations Management	Engineering and Management of Manufacturing Systems	Global Product Development and Management, Aerospace Manufacturing, Cyber-Secure Manufacturing, Engineering Competence
I-MNU-A1018	General Management	Engineering and Management of Manufacturing Systems	Advanced Materials, Manufacturing Technology and Management, Global Product Development and Management, , Engineering Competence, Metal Additive Manufacturing
I-KME-A1037	Enterprise Modelling	Management and Information Systems	Global Product Development and Management
I-MNU-A1037	Project and Programme Management	Management and Information Systems	Engineering Competence
I-MAT-DISS	Dissertation for Part Time Students	Advanced Materials	Aerospace Materials, Manufacturing Technology & Management, Aerospace Manufacturing, Engineering & Management of Manufacturing Systems, Global Product Development and Management, Cyber-Secure Manufacturing, Welding Engineering, Metal Additive Manufacturing
I-MAT-GRPP	Group Project	Advanced Materials	Aerospace Materials, Manufacturing Technology & Management, Engineering & Management of Manufacturing Systems, Aerospace Manufacturing, Global Product Development and Management, Cyber-Secure Manufacturing, Welding Engineering, Metal Additive

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			Manufacturing
I-MNU-THESIS	Individual Research Project	Advanced Materials	Engineering & Management of Manufacturing Systems, Global Product Development and Management, Cyber-Secure Manufacturing, Aerospace Materials, Manufacturing Technology and Management, Welding Engineering, Aerospace Manufacturing, Metal Additive Manufacturing

7. **How are the ILOs assessed?**

The following assessment types are utilised:

The course uses a range of assessment types. Students can expect to have three written examinations, five pieces of assessment by submitted work, one piece of group project work (including an assessment of personal contribution to group work), and one element assessed by a thesis and an oral presentation.

This approach has been adopted in order to perform formative and summative assessments of the students to demonstrate their ability in a range of contexts. Part time students will be assessed by dissertation in place of the group project.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.

(Module numbers should correspond with those used in the Course module table above.)

A. Postgraduate Certificate

Award ILOs Module No.	ILO 1.	ILO 2.	ILO 3.	ILO 4.	ILO 5.
2	EX	EX		EX	EX
3	EX	EX		EX	
4	ICW	ICW		ICW	ICW
5	EX	EX		EX	
6	ICW	ICW	ICW	ICW	ICW
7	ICW	ICW	ICW	ICW	
8	ICW	ICW	ICW	ICW	ICW
9	ICW	ICW	ICW	ICW	ICW

B. Postgraduate Diploma

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

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Award ILOs Module No.	ILO 1.	ILO 2.	ILO 3.	ILO 4.	ILO 5.	ILO 6.	ILO 7.
10a	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW
10b	ICW	ICW	ICW	ICW	ICW	ICW	ICW

C. MSc

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs Module No.	ILO 1.	ILO 2.	ILO 3.	ILO 4.	ILO 5.	ILO 6.	ILO 7.	ILO.8
11	THESIS OR	THESIS OR	THESIS OR	THESIS OR	THESIS OR	THESIS OR	THESIS OR	THESIS OR

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review. For collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focussed Review which looks at each course in depth. In addition occasional site inspection visits are made.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

9. What opportunities are graduates likely to have on completing the course?

The intention of the course is to provide students with knowledge and understanding and associated transferrable skills to make a contribution to industry on graduation. Graduates will typically seek employment in IT users and vendors industries, consultancies or research institutions. Common starting roles are junior managers, business analyst, implementation consultant, project manager and PhD researcher. With time (quicker for those with more background experience) graduates progress to senior positions with significant responsibility for people, budgets and projects.

COURSE SPECIFICATION

Cranfield University: Course Specifications	
Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.	

Date of first publication/latest revision:	April 2019

1. What is the course?

Course information

Course Title	Management and Leadership
Course code	MSMMLPTC, MSMMLPAC
Academic Year	2019/20
Valid entry routes	MSc
Additional exit routes	PgCert PgDip
Mode of delivery	Part-time
Location(s)[1] of Study	Cranfield University; London (Grant Thornton Premises)
School(s)	School of Management
Theme	Management and Leadership
Centre	Centre for Management
Course Director	Professor Michael Dickmann
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ Level 7 (Masters)
Benchmark Statement(s)	Not Applicable
Registration Period(s) available	MSc - part-time - maximum of 5 years PG Certificate – 3 years PG Diploma – 4 years
Course Start Month(s)	March and September

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

Institutions delivering the course

This course is delivered by the School of Management where the research interests consist of a wide range of management functions.

All teaching and assessment is provided by the School of Management, at times in cooperation with other parts of the university or through external collaborators who have recognised teacher status (RTS). The principal external collaborator is Grant Thornton, one of the major professional service organizations in the UK. Some modules are being taught at the premises of Grant Thornton in London. Grant Thornton's RTS staff also delivers some accounting teaching. In addition, Grant Thornton's accredited coaching will engage with the students and deliver individualized coaching sessions in close alignment with Cranfield and the Leading with Impact: Organizational Behaviour module.

Furthermore, Cranfield University interacts with the following institutions and in the following ways:

- All students will undertake a consulting project, normally in an external organisation, presenting findings to senior managers from the organisation involved
- Each module will incorporate input from senior managers/practitioners where appropriate
- Some students undertake research and/or project work off campus, within organisations. In some cases this may take the form of a short term internship assessed by individual project.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is not accredited by any external bodies.

2. <u>**What are the aims of the course?**</u>

The Cranfield MML aims to provide a distinctive and collaborative learning experience centred on a process of intense, interactive classroom sessions where the combination of the professional experience of a diverse student cohort and the faculty's direct involvement with global businesses ensures graduates have a deep understanding of contemporary business issues and the capacity to assume active leadership roles. This experience is founded on the integration of five aims:

- To develop a group of influential future leaders who will make a significant impact on their organisations, industries and the wider community.
- To create an understanding as to how to develop leadership capabilities in self and others in order to meet modern societal and business challenges.
- To deliver a contemporary and comprehensive knowledge of core business functions enabling students to show leading-edge insights and knowledge to experts and non-experts in a variety of management areas.
- To create a strategic mindset capable of viewing organisations as consisting of functions and groups whose actions must be motivated and aligned to meet objectives.
- To generate the self-awareness and confidence to lead and/or operate effectively as a member of a team drawn from a diverse variety of cultures, business experiences and personalities.

This programme is intended for the following range of students:

- Early-career professionals who want a "real-world" business education which they can apply directly back to their workplace.
- Self-motivated managers who are keen to improve themselves, enhance their skills, knowledge and abilities, and become more effective leaders.

3. <u>What should students expect to achieve in completing the course?</u>

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate in Management and Leadership**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1. Articulate a critical awareness of the global environment within which organisations operate and the socio-cultural, political, institutional, managerial, technical and ethical ambiguities and risks that this gives rise to.

ILO 2. Demonstrate appropriate and flexible qualities of leadership. Critically evaluate their personal strengths, weaknesses and preferences when working with others or leading them.

ILO 3. Exhibit a critical, conceptual understanding of the main areas of management and a systematic knowledge of the relevant literature.

ILO 4. Critically analyse and creatively manage the career development of themselves and others.

B. **Postgraduate Diploma in Management and Leadership**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 5. Evidence the mastery of a wide range of management techniques that successfully address complex problems in a world characterized by high degrees of uncertainty and change. These techniques allow students to identify and analyse business challenges and to develop and implement appropriate solutions. .

ILO 6. Build strong working relationships as leaders and team members. Demonstrate an ability to work effectively with colleagues through leadership and persuasive influencing skills.

C. **Masters in Management and Leadership**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 7. Engage and carry out an evidence-led management project and critically discuss and reflect on it in a substantial project report, developing justified recommendations and action plans.

4. <u>How is the course taught?</u>

Students will be supported in their learning and personal development by:

- Intensive classroom interaction combined with a high proportion of team work, group projects, business simulations and private study.

In addition to the teaching methods outlined above, students will be supported in their learning and personal development by:

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- being placed in a diverse leaning team and supervised by a learning team tutor;
- being exposed to a range of psychometric tests and an assessment centre exercise;
- one-to-one coaching from professionals.
- peer coaching elements

5. **What do students need to achieve in order to graduate?**

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 6. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

MSc

The accumulation of 200 credits through the assessment of taught modules and the work-based project report as detailed below:

Description	Credits
COMPULSORY MODULES:	
Module 1 - 11 Module 12 (attendance only)	130
WORK-BASED PROJECT:	
THESIS	70
TOTAL:	**200**

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee); [3]

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[3] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a

- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
  - o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  - o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
  - o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. <u>How is the course structured?</u>

Part-time students register for the course in September or March and are expected to complete the course within 2 years.

The MML programme comprises a number of residential phases and a work-based project phase. Students start with an orientation day at Cranfield and have, on average, two modules in their block weeks every three months. After 12 modules (the 7th residential week) students embark on a work-based project for which they are supervised by Cranfield academics. After this project which has a minimum duration of 12 weeks the students return to have a last residential phase. This last face-to-face interaction is designed to explore and facilitate the integration of learning, encourages, where possible, the students to share their work-based project experiences (e.g. through a capstone conference) and to help students prepare for their EPAs.

From year 1 of their studies students engage in peer coaching which is complemented by professional coaching sessions in year 2. Throughout their MML degree students are in learning teams to support each other.

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student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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Course modules MML (October) - all 'K' Occurrences

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[4]	Total hours delivered by Visiting	Credits	Is the module shared? Y/N	Calendar Module Start Date (eg Pre-course task)	Calendar 'Residential' Start Date	Calendar 'Residential' End Date	Minimum Mark[6] – 40% or 50%	Assessment Independent Assessment Type of Assessment	Assessment Independent Assessment Weighting within module7 (%) of Independent	Assessment Multi-part Assessment Weighting within module of multi-part assessments [8](100%)	Assessment Multi-part Assessment Type of Assessment	Assessment Multi-part Assessment Weighting of individual elements of multi part	Assessment Submission dates Assessment Submission and/or exam date[10]	Assessment Submission dates Assessment / Exam Retake date
1	MML-LBO K19	Leading with Impact: Organisational Behaviour	Dr Deirdre Anderson	32		20	N	17/09/19	17/09/19	19/06/20	40			MULTI 100	ICW ICW	50 50	01/05/2020 08/07/2020	
2	M-T/ECM	Economics for Managers	Prof Catarina Figueira	16		10	Y	18/09/19	18/09/19	20/09/19	40	GCW	100				18/10/19	

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[4] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[5] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[6] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%. This will be at the Board of Examiners discretion.

[7] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[8] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[9] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[10] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Management and Leadership COURSE SPECIFICATION
QA&E USE ONLY: Version 1 April 2019   Course / SAS Version:

Module Number	Module code	Title	Module Leader	Contact hours[4]	Total hours delivered by Visiting	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[6] - 40% or 50%	Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module[7] (%) of Independent	Weighting within module of multi-part assessments [8] (100%)	Type of Assessment	Weighting of individual elements of multi-part	Assessment Submission and/or exam date[10]	Assessment / Exam Retake date
3	MML/LSO	Leading Strategic Operations	Dr Abdelkader Aoufi	16		10	N	11/12/19	11/12/19	13/12/19	40	ICW	100				24/01/20	
4	MML/MST	Marketing Strategy	Dennis Esch	16		10	N	09/12/19	09/12/19	10/12/19	40	ICW	100				7/02/20	
5	MXM/ACT	Accounting	Dr Matthias Nnad	16		10	Y	09/03/20	09/03/20	11/03/2020	40	EX	100				15/6/20	
6	M-T/LCS	Leading Corporate Sustainability	Dr Rosina Watson	16		10	Y	10/03/2020	10/03/2020	13/03/2020	40	ICW	100				24/04/2020	
7	MML/SML	Strategic Management and Leadership	Dr Richard Schoenberg	16		10	N	16/06/2020	16/06/2020	18/06/2020	40 40	GPRES GCW	50 50				10/08/2020 10/08/2020	
8	MML/EPRM	Enterprise Performance and Risk Management	Prof Michael Bourne	16		20	N	14/09/2020	14/09/2020	11/12/2020	40			MULTI 100	GCW ICW	70 30	12/02/2021 12/02/2021	
9	M-T/MAC	Management Consulting	Dr Monica Franco Santos	16		10	Y	07/12/20	07/12/20	11/12/2020	40 40	GPRES ICW	50 50				19/03/2021 19/03/2021	
10	M-T/DIN	Disruptive Innovation	Dr Leon Williams	16		10	Y	15/03/2021	15/03/2021	18/03/2021	40			MULTI 100	GCW ICW	40 60	30/04/2021 30/04/2021	
11	M-T/PML	People Management and Leadership	Prof Michael Dickmann	16		10	Y	14/09/2020	14/09/2020	17/09/2020	40	EX	100				07.12.20	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

Management and Leadership COURSE SPECIFICATION
QA&E USE ONLY: Version 1 April 2019   Course / SAS Version:

Module Number	Module code	Title	Module Leader	Contact hours[4]	Total hours delivered by Visiting	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	Residential Start Date	Residential End Date	Minimum Mark[6] - 40% or 50%	Independent Assessment — Type of Assessment	Independent Assessment — Weighting within module7 (%) of Independent	Multi-part Assessment — Weighting within module of multi-part assessments [8] (100%)	Multi-part Assessment — Type of Assessment	Multi-part Assessment — Weighting of individual elements of multi-part	Submission dates — Assessment Submission and/or exam date[10]	Assessment / Exam Retake date
12	M-T/EBM	Evidence-based Management	Dr Valentina Battista	16		0	Y	15/03/2021	15/03/2021	18/03/2021	N/A	AO	N/A					
13	MML / THS	Management and Leadership Thesis (Work-based project)	Robby Allen	10		70	N	16/09/2019	16/09/2019	19/06/2020	50 50	THESIS RP	70 30				30/08/2021 30/08/2021	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Management and Leadership COURSE SPECIFICATION
QA&E USE ONLY: Version 1 April 2019   Course / SAS Version:

Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
M-T/ECM	Economics for Managers	Management	Management and Corporate Sustainability; Management and Leadership
M-T/LCS	Leading Corporate Sustainability	Management	Management and Corporate Sustainability; Management and Leadership
M-T/DIN	Disruptive Innovation	Management	Management and Entrepreneurship; Management and Leadership
M-T/MAC	Management Consulting	Management	Management and Corporate Sustainability; Management and Leadership
M-T/MPL	People Management and Leadership	Management	Management and Corporate Sustainability; Management and Entrepreneurship; Management and Leadership
M-T/EBM	Evidence-based Management	Management	Management and Corporate Sustainability; Management and Entrepreneurship; Management and Leadership; Executive Logistics and Supply Chain Management
MXM/ACT	Accounting	Executive MBA	Management and Leadership

7. How are the ILOs assessed?

The programme uses a range of assessment types. In addition to closed book and open book written examinations, students undertake a wide range of projects. A more unusual type of assessment is the simulation. Here students – again working in teams – might be required to build a warehouse or an electrical product – within a limited period of time, where information may be given and/or changed at intervals. Many projects involve working with a company on a live project. Towards the end of the programme there will be the opportunity for some students to work on company based projects or short term internships, assessed through a written report.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.

Award ILOs / Module No.	ILO1.	ILO2.	ILO3.	ILO4.	ILO5.	ILO6.	ILO7.
01		Multi	Multi	Multi			
02	GCW						
03	ICW		ICW		ICW		
04	ICW		ICW		ICW		

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Module No. \ Award ILOs	ILO1.	ILO2.	ILO3.	ILO4.	ILO5.	ILO6.	ILO7.
05			EX		EX		
06	ICW	ICW	ICW		ICW	ICW	
07	GPRES/ GCW		GPRES/ GCW		GPRES/ GCW	GPRES/ GCW	
08	Multi		Multi		Multi		
09	GPRES/I CW	GPRES/ ICW	GPRES/ ICW		GPRES/ ICW	GPRES/I CW	
10	Multi	Multi	Multi		Multi	Multi	
11	EX		EX		EX		
12							AO
13 (WBP)	THS		THS		THS	THS	THS

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the

University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. **What opportunities are graduates likely to have on completing the course?**

The list of opportunities available to our Masters students after graduating is extremely wide. Drawing on recent surveys of our graduates the most popular functions were as follows:

- General Management
- Engineering and R & D Management
- Consultancy
- Business Development
- Strategy
- Sales/Marketing

- Finance/Accounting
- Operations
- IT Project Management

In addition a small but growing number of students set-up their own businesses, though this number increases after two to three years post-graduation.

COURSE SPECIFICATION

Cranfield University: Course Specifications
Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	MSc in Management

Date of first publication/latest revision:	March 2019

1. What is the course?

Course information

Course Title	MSc in Management
Course code	MSMGTFTC, PDMGTFTC, PCMGTFTC
Academic Year	2019/20
Valid entry routes	MSc
Additional exit routes	PgDip, PgCert
Mode of delivery	Full-time
Location(s)[1] of Study	Cranfield Campus
School(s)	School of Management
Theme	Leadership and Management
Centre	Centre for Management
Course Director	Professor Michael Dickmann
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ level 7 (Masters)
Benchmark Statement(s)	N/A
Registration Period(s) available	Full-time MSc
Course Start Month(s)	September

Institutions delivering the course

This course is delivered by the School of Management (SOM), Leadership and Management Theme, Centre for Management across its four Communities where the research interests include a wide range of Management areas. The modules are either existing or combinations of modules

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[1] If any part of this course is delivered at another site, please note which one(s) here
[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

already taught on existing MSc courses offered by SOM. Teaching is provided by SOM Faculty and selected lectures and case studies provided by Visiting Fellows/Professors. Company based thesis projects and internships will involve external organisations. However, Cranfield University School of Management remains fully responsible for the quality of delivery of the course and the assessment of the course. It also provides a core set of management modules which can be offered to the University and the opportunity to jointly develop MSc in Management plus programmes with other Schools.

Interactions with outside organisations currently take the form of:

- Teaching/instruction from external academic, industry and other guest speakers.
- Individual thesis and particularly internship projects will be offered to and by various organisations (including not-for-profit and voluntary organisations).

To develop the above internship projects we have outsourced the internship development function to a specialist internship company (e.g. Instant Impact Ltd) and to support this with an administrator to manage the relationship between the university and the students.

The course director has also developed a practice advisory board. Members have been drawn from recommendations made by module convenors and Directors of Community.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited by The Chartered Management Institute (CMI)

2. <u>What are the aims of the course?</u>

Cranfield University offers this course in order to add value to first degrees by developing in individuals a critical awareness of management and organisations, and assist them in taking effective roles within them at managerial career entry level.

The objectives are fivefold:

1. To prepare students for the world of employment in management, partly through a strong balanced focus between theoretical perspectives and simulation in the curriculum and partly through the thesis which is normally linked to the internship.
2. The advanced study of organisations, their management and the changing external context in which they operate.
3. Development of a range of business knowledge and skills, together with self-awareness and personal development appropriate for managerial career entry.
4. Development of the ability to apply concepts and theories to complex management issues, both systematically and creatively, to advance the effectiveness and competitiveness of the employing organisation.
5. Enhancement of lifelong learning through the development of transferable intellectual and study skills, personal development to enable self-direction and creativity, in order to contribute to business, the economy and society at large.

This programme is intended for the following range of students:

> This is a pre-work experience programme intended for graduates from a non-business/ management subject looking to develop key managerial skills commensurate with managerial career entry opportunities. We also anticipate that some students who already have a higher educational degree in a technical area but lack managerial experience and would not meet the relevant work experience qualification for the MBA might also be interested in joining the MSc in Management (MiM) programme.

3. <u>What should students expect to achieve in completing the course?</u>

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1. Demonstrate a systematic application and a critical awareness of current management research and to evaluate its relevance to industrial and commercial practice.

ILO 2. Have a conceptual understanding that enables the student to evaluate critically current research and/or methodologies, develop critiques of them, and where appropriate adapt them.

ILO 3. Demonstrate the ability to identify the appropriate management frameworks for an issue or situation under consideration, and to apply the tool or technique accurately.

ILO 4. Make informed judgements in the absence of complete data.

ILO 5. Undertake and show an ability for independent learning and an interest in advancing their knowledge and understanding and developing new skills to a high level.

ILO 6. Demonstrate transferrable skills, including; time management, report writing and presentational and team working.

B. **Postgraduate Diploma**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 7. Integrate their learning from the PgCert.

ILO 8. Demonstrate originality in the application of knowledge, including data and information collected by the student.

ILO 9. Show self-direction and originality in tackling and solving problems.

ILO 10. Possess a comprehensive understanding of the leading management literature.

ILO 11. Demonstrate additional transferrable skills, including; consultancy, effective communication, cultural awareness and interpersonal team working and leadership.

C. **MSc**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 12. Integrate their learning from the PgCert and PgDip and apply it to a research project.

ILO 13. Understand, have experience with, and confidently be able to apply management theories, tools and techniques and will have practised implementing theories and tools in a variety of situations including case studies, business simulations and the individual project.

ILO 14. Demonstrate the ability to identify the appropriate management frameworks for an issue or situation under consideration, to apply the tool or technique accurately.

ILO 15. Display practical capabilities in self-directed research, data gathering, data analysis and interpretation, report writing and presentation skills.

ILO 16. Carry out research using appropriate techniques and draw justifiable inferences from the data obtained.

ILO 17. Critically evaluate and synthesis the published literature within and across management disciplines.

ILO 18. Produce a high quality thesis and critically evaluate the interpretations of the data.

ILO 19. Undertake independent research on a relevant management subject, demonstrating the ability to plan, manage and execute an industrial, research based or internship project to realistic time scales.

4. How is the course taught?

Overall the aim is to provide a varied, stimulating and experiential learning environment. All taught modules consist of formal lectures, in-class case discussions, group and self-study. A management consultancy simulation will allow students to test their accumulated management understanding in a non-threatening environment. Group project work, reflective practice and class exercises are used to develop problem solving skills. The course will be supported by an electronic learning environment (VLE - Blackboard) which will be the central repository for all information relating to the course and available to the students at all times. This will be supplemented by online module case packs. Additional practical expertise will be provided by visiting fellows and guest speakers. All modules will be taught in block format. Each assessed module comprises 25 hours of class contact time with a further 75 hours of study time to consolidate learning and carry out assignments, giving 100 notional learning hours per module. The thesis component of the module is in total 90 credits to reflect the fact that many students will be undertaking a 3 month internship over the May-September period.

The MSc in Management will be strongly differentiated from our existing MBA programmes. This will be achieved in a number of ways as follows by:

- Targeting the course at pre-work experienced graduates
- Utilising module material principally from, or developed for, existing MSc programmes
- Incorporating a multi-option thesis at the end of the programme
- Orientating career development towards a first line management position.
- Using a greater mix of theoretical input and simulation (for the MiM) as opposed to practical workshops and the case method (for the MBA).

5. What do students need to achieve in order to graduate?

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A. Postgraduate Certificate
The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
6 modules from modules 1-9	60
ELECTIVE MODULES:	
N/A	N/A
TOTAL:	**60**

B. Postgraduate Diploma
The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	

Modules 1-9	90
ELECTIVE MODULES:	
3 modules from modules 10-15	30
TOTAL:	**120**

C.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 220 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Modules 1-9	90
Module 16	10
Masters of Management Thesis (Internship) 17 or Masters of Management Thesis (Non-internship) 18	90
ELECTIVE MODULES:	
3 modules from modules 10-15	30
TOTAL:	**220**

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
  - o   if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  - o   if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your

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[3]   For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4]   Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);

- o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. <u>How is the course structured?</u>

The course will be offered on a full-time basis only. Full-time students register for the course in September and are expected to complete the course within 13 calendar months.

The course modules will be taught over terms 1, 2 and 3. The individual thesis project is undertaken during terms 3 and 4. In addition to the teaching methods outlined in section 3 above, students will be supported in their learning and personal development by:

- Orientation week
- Library induction, referencing and plagiarism sessions
- PDP specifically supported through SOM careers development sessions and 2 modules specifically
  - · Organisation Theory & Behaviour
  - · Management Consulting
- A Virtual Learning Environment
- Learning teams supported by an academic tutor
- Provision of language classes. Mandatory for those with only one language and optional for those with more.

Course modules – all Occ A unless specified

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment							
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates		
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	M-T/MMT	Marketing Management	Dr Ahmed Shaalan	20		10	Y	28/01/2020	28/01/2020	12/02/2020	40	ICW	100				13/03/2020	
2	M-T/OBA	Organisational Behaviour: Application	Dr Richard Kwiatkowski	20		10	Y	15/10/2019	15/10/2019	08/11/2019	40	ICW	100				04/12/2019	
3	M-L/ACF Occ C	Accounting and Finance	Dr Simon Templar	20		10	Y	08/10/2019	08/10/2019	13/12/2019	40	EX	100				W/C 16/12/2019	
4	M-T/PML	People Management and Leadership	Prof Michael Dickmann	20		10	Y	18/11/2019	18/11/2019	06/12/2019	40	GCW	100				17/01/2020	
5	M-T/ECM	Economics for Managers	Dr Catarina Figueira	20		10	Y	18/11/2019	18/11/2019	03/12/2019	40	GCW	100				12/12/2019	
6	M-T/MNO	Managing Operations	Dr Abdelkader Aoufi	20		10	Y	14/10/2019	14/10/2019	01/11/2019	40	GCW	100				22/11/2019	

[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
7	M-T/STG	Strategic Management	Dr Richard Schoenberg	20		10	Y	17/02/2020	17/02/2020	10/03/2020	40	EX	100				W/C 23/03/2020	
8	M-T/MAC	Management Consulting	Dr Monica Franco-Santos	20		10	Y	01/05/19	01/05/19	05/06/19	40 40	GPRES ICW	50 50				26/06/2020	
9	M-T/LCS	Leading Corporate Sustainability	Dr Rosina Watson	20	5	10	Y	13/01/2020	13/01/2020	24/01/2020	40	ICW	100				14/02/2020	
10	M-T/ORP	Organisational Performance: Direction Control and Measurement	Prof Mike Bourne	20		10	N	11/05/2020	11/05/2020	13/05/2020	40	ICW	100				15/06/20	
11	M-T/SCM	Supply Chain Management	Dr Leila Alinaghian	20		10	N	10/02/2020	10/02/2020	28/02/2020	40			100 MULTI	ICW GCW	50 50	20/03/20 20/03/20	
12	M-T/DIN	Disruptive Innovation	Prof Leon Williams	20		10	Y	02/03/2020	02/03/2020	05/03/2020	40			100 MULTI	GCW ICW	40 60	01/05/20 01/05/20	
13	M-T/ENT	Entrepreneurship	Dr Oksana Koryak	20		10	N	24/02/2020	24/02/2020	27/02/2020	40	GCW	100				17/04/2020	
14	M-T/MPM	Mastering Project Management	Dr Elmar Kutsch	20		10	N	Occ A 11/03/2020 Occ B 05/05/2020	Occ A 11/03/2020 Occ B 05/05/2020	Occ A 13/03/2020 Occ B 07/05/2020	40			100 MULTI 100 MULTI	GPRAC GCW GPRAC GCW	70 30 70 30	Occ A 13/03/20 Occ B 07/05/20	
15	M-T/ECC	Effective Cross-Cultural Management	Prof Michael Dickmann	20		10	N	Occ A 11/11/2019 Occ B	Occ A 11/11/2019 Occ B	Occ A 15/11/2019 Occ B 24/04/20	40			100 MULTI 100	GCW ICW GCW	70 30 70	OccA 13/12/19 Occ B	

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers [6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
									Calendar			Independent Assessment		Multi-part Assessment			Submission dates	
								20/04/20	20/04/20					MULTI	ICW	30	22/05/20	
16	M-T/EBM	Evidence-Based Management	Dr Valentina Battista	20		10	Y	27/04/2020	27/04/2020	20/05/2020	40	GCW	100				19/06/20	
17	M-T/THS	Masters of Management Thesis (Internship)	Prof Michael Dickmann	10		90	N	06/04/20	06/04/20	16/10/2020	40 50	ICW THESIS	30 70				16/10/20 16/10/20	
18	M-T/THSNI	Masters of Management Thesis (Non-internship)	Prof Michael Dickmann	10		90	N	06/04/20	06/04/20	16/10/2020	50	THESIS	100				23/10/20	

Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
M-L/ACF	Accounting and Finance	Logistics and Supply Chain Management	Procurement and Supply Chain Management; Business and Strategic Leadership; Management; Management and Corporate Sustainability; Management and Entrepreneurship
M-T/MMT	Marketing Management	Management	Management and Corporate Sustainability, Management and Entrepreneurship
M-T/OBA	Organisational Behaviour: Application	Management	Management and Corporate Sustainability, Management and Entrepreneurship
M-T/ECM	Economics for Managers	Management	Management and Corporate Sustainability; Management and Leadership
M-T/MNO	Managing Operations	Management	Management and Corporate Sustainability, Management and Entrepreneurship
M-T/STG	Strategic Management	Management	Management and Corporate Sustainability, Management and Entrepreneurship
M-T/MAC	Management Consulting	Management	Management and Leadership
M-T-LCS	Leading Corporate Sustainability	Management	Management and Corporate Sustainability; Management and Leadership; Future Food Sustainability
M-T/DIN	Disruptive Innovation	Management	Management and Entrepreneurship; Management and Leadership;
M-T/EBM	Evidence-based Management	Management	Management and Corporate Sustainability, Management and Entrepreneurship; Management and Leadership
M-T/PML	People Management and Leadership	Management	Management and Corporate Sustainability; Management and Leadership

7. How are the ILOs assessed?

The following assessment types are utilised:

This is a full-time course conforming to the University's system of 10 credits (100 NLH) per module taken over 13 months comprising 220 credits in total. It will be assessed by conventional means: written assessment of cases (WACs), exams and group and individual assignments and a

thesis project at the end of the programme. This thesis project will comprise 90 credits in total and will normally be linked to the 3 month internship. In the event that a student is unable to secure an internship or the internship is curtailed, for whatever reasons, there is an option to direct a student towards an empirical or systematic literature review similar to existing MSc students but the length of the thesis should reflect the additional credits and time available for the thesis.

This approach has been adopted because it is impossible to preclude the risk of companies curtailing an internship or that some students are not able to gain an internship.

Assessment and ILO Mapping

Module No.	ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO8	ILO9	ILO10	ILO11	ILO12	ILO13	ILO14	ILO15	ILO16	ILO17	ILO18	ILO19
	Postgraduate Certificate						Postgraduate Diploma					MSc							
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								
2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								
3	✓	✓	✓	✓			✓	✓	✓	✓	✓								
4	✓	✓	✓	✓			✓	✓	✓	✓	✓								
5	✓	✓	✓	✓			✓	✓	✓	✓	✓								
6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								
7	✓	✓	✓	✓			✓	✓	✓	✓	✓								
8	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓								
9	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓								
10							✓	✓	✓	✓	✓								
11							✓	✓	✓	✓	✓								
12							✓	✓	✓	✓	✓								
13							✓	✓	✓	✓	✓								
14							✓	✓	✓	✓	✓								
15							✓	✓	✓	✓	✓								
16							✓	✓	✓	✓	✓								
17													✓	✓	✓		✓		
18			ICW	ICW	ICW		ICW		ICW			THESIS	THESIS	THESIS	THESIS ICW	THESIS	THESIS ICW	THESIS	THESIS
19			ICW	ICW	ICW		ICW		ICW			THESIS	THESIS	THESIS	THESIS ICW	THESIS	THESIS ICW	THESIS	THESIS

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)
N/A	N/A	N/A	N/A
		N/A	N/A

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10

(Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to

assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. What opportunities are graduates likely to have on completing the course?

The course will provide a comprehensive understanding/knowledge of management with the practical skill set commensurate with entry to a first line managerial post. As such, many of the students will go into large organisations' graduate entry schemes but will equally be attractive to SMEs where the managerial component will add value to the student's technology or single discipline first degree. Evidence form current recruitment patterns for our young MSc students (on specialist MSc) already shows the trend toward graduate entry schemes and many companies are transferring their search to post-graduates rather than fresh graduates. Students are therefore typically recruited for early-career roles and graduate schemes in industry, banks, consultancies and other large organisations. However, this Masters programme is also ideal for recent graduates seeking a conversion path into business management in order to give them an edge in today's job market. For example, employers want an engineer who can grasp marketing or an arts graduate with an ability to devise business plans. Finally, some students will want to develop their own businesses and the flexibility of the programme is that it can provide pathways for such students who want to move in this direction, e.g. by taking the entrepreneurship elective and opting to do an entrepreneurship internship or company-based project.

COURSE SPECIFICATION

Cranfield University: Course Specifications
Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	MSc in Manufacturing Technology and Management

Date of first publication/latest revision:	July 2019

1. What is the course?

Course information

Course Title	MSc in Manufacturing Technology and Management
Course code	MSMTMFTC, MSMTMPTC, PDMTMFTC, PDMTMPTC, PCMTMFTC, PCMTMPTC
Academic Year	2019/20
Valid entry routes	MSc, PgDip, PgCert
Additional exit routes	PgDip, PgCert
Mode of delivery	Full-time, Part-time
Location(s)[1] of Study	Cranfield University
School(s)	School of Aerospace, Transport and Manufacturing
Theme	Manufacturing
Centre	Surface Engineering and Precision Institute
Course Director	Dr Jeff Rao
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ Level 7 (Masters)
Benchmark Statement(s)	N/A
Registration Period(s) available	One year full-time, three years part-time
Course Start Month(s)	Full-time: October. Part-time: throughout the year

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[1] If any part of this course is delivered at another site, please note which one(s) here

[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

Institutions delivering the course

This course is delivered by the School of Aerospace, Transport and Manufacturing, Manufacturing Theme, where the research interests include Manufacturing Technology and Materials Engineering. Specific areas of expertise include:

> Enhanced Composites and Advanced Structures
> Surface Engineering and Precision Engineering
> Welding Engineering and Laser Processing
> Through Life Engineering Services
> Additive Manufacturing

This capability is complemented by the manufacturing management research undertaken through the Manufacturing Theme and the School of Management.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited formally by the Institution of Mechanical Engineers (IMechE), Institution of Engineering and Technology (IET), Royal Aeronautical Society (RAeS) and The Welding Institute (TWI).

Students completing an accredited degree are deemed to have met part or all of the academic requirements for registration as a Chartered or Incorporated Engineer and are in a strong position to move on to achieve professional engineering status after a period of initial professional development in industry.

2. <u>What are the aims of the course?</u>

Cranfield University offers this course in order to:

- Prepare science and engineering graduates to meet the increasing demand of industry, consultancies and the public sector for manufacturing engineers in the aerospace, automotive, health technologies, energy, defense and consumer products sectors.
- Ensure manufacturing engineers acquire an advanced theoretical and specialist understanding of manufacturing technologies, the role of materials and the management of technology in these sectors.
- Enable manufacturing engineers to select and use appropriate technologies in different manufacturing sectors to minimise operational risks and maximise process reliability and capability based on the application of appropriate scientific, technical and engineering principles.
- Ensure manufacturing engineers develop the capacity to undertake successful research and innovation projects using appropriate methods of critical analysis.

Postgraduate Diploma (PgDip) and Postgraduate Certificate (PgCert) exit routes are provided for students who wish to access only parts of the course provided.

This programme is intended for the following range of students:

- Graduates with science or related engineering degrees keen to pursue careers in manufacturing.
- Graduates currently in employment keen to extend their qualifications or to pursue a career change.

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- Individuals with other qualifications but who possess considerable relevant experience.

3. **What should students expect to achieve in completing the course?**

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1.	Describe the key concepts and issues relating to manufacturing processes, the enabling technologies, together with the engineering principles that underpin the design and operation of manufacturing systems.
ILO 2.	Describe of the influence of materials in manufacturing processes in terms of process reliability, operational risks and system efficiencies
ILO 3.	Analyse manufacturing technology challenges and design appropriate solutions taking account of environmental, technical, regulatory and commercial constraints
ILO 4.	Communicate effectively their work via oral and written presentations and reports.

B. **Postgraduate Diploma**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 5.	Demonstrate skills in team working and project management.
ILO 6.	Define, analyse and solve problems faced by manufacturing engineers.
ILO 7.	Apply knowledge to address future manufacturing technology challenges.
ILO 8.	Demonstrate practical skills required within the manufacturing sector.

C. **MSc**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 9.	Identify research problems relevant to appropriate public and private sector organisations, implement a programme of relevant research and collect, analyse and interpret the resultant data to draw appropriate conclusions.

4. **How is the course taught?**

Students will be supported in their learning and personal development by:
- Comprehensive course materials are provided, as well as a web-site using the Blackboard Victual Learning Environment (VLE). Students are guided through the use of exercises, group and individual discussion.
- Students engage in class activities to practice the techniques taught.
- Group working is encouraged with the core modules.

5. What do students need to achieve in order to graduate?

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A. Postgraduate Certificate
The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
Modules 1 and 3	20
ELECTIVE MODULES:	
Four modules from modules 2, 4 and 5 - 15	40
TOTAL:	60

B. Postgraduate Diploma
The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

FULL TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 1, 3 and 4 Group Project (16a)	30 40
ELECTIVE MODULES:	
Five modules from modules 2, and 5 - 15	50
TOTAL:	120

PART TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 1, 3 and 4	30
ELECTIVE MODULES:	
Five modules from modules 2, and 5 – 15. Group Project (16a) or Dissertation (16b)	50 40
TOTAL:	120

C. MSc
In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

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FULL TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 1, 3 and 4	30
Group Project (16a)	40
Individual Research Project (17)	80
ELECTIVE MODULES:	
Five modules from modules 2, and 5 - 15	50
TOTAL:	200

PART TIME STUDENTS

Description	Credits
COMPULSORY MODULES:	
Modules 1, 3 and 4	30
Individual Research Project (17)	80
ELECTIVE MODULES:	
Five modules from modules 2, and 5 – 15.	50
Group Project (16a) or Dissertation (16b)	40
TOTAL:	200

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does not have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]

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[3] For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range

- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
  - o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  - o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
  - o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. <u>How is the course structured?</u>

Full-time students register for the course in October and are expected to complete the course within 12 calendar months.

The course also targets part-time candidates and such students are expected to complete the course within 2 to 3 years. Part-time students are not restricted to starting in October. Instead they are offered individual guidance on the best sequence of study based on their prior knowledge and availability to attend.

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of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar Module Start Date (eg Pre-course task)	Calendar ' Residential' Start Date	Calendar ' Residential' End Date	Minimum Mark[7] - 40% or 50%	Independent Assessment Type of Assessment	Independent Assessment Weighting within module8 (%) of Independent assessments	Multi-part Assessment Weighting within module of multi-part assessments [9](100%)	Multi-part Assessment Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Submission dates Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	I-MTM-A2028	Introduction to Manufacturing, Materials and Research Techniques	Dr Sue Impey/Dr Kostas Georgarakis/Dr Jeff Rao	25		10	Y	30/09/19	30/09/19	18/10/19	40			100 MULTI	GCW GPRES	80 20	25/11/19 18/10/19	Re-assessment date to be set by agreement of the Module Leader as/when required.
2	I-MAT-A1009	Introduction to Materials Engineering	Dr David Ayre	30		10	Y	07/10/19	07/10/19	11/10/19	40	EX	100				16/12/19	Manufacturing resit exams will be during week commencing 11/05/20

[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
												Independent Assessment		Multi-part Assessment			Submission dates	
3	I-GPD-A1505	Lean Product Development	Dr Ahmed Al-Ashaab	32		10	Y	20/01/20	20/01/20	24/01/20	40	GCW	100				17/02/20	Re-assessment date to be set by agreement of the Module Leader as/when required.
4	I-MNU-A1018	General Management	Mr Matthew Caffrey	32		10	Y	02/12/19	02/12/19	06/12/19	40	EX	100				10/01/20	Manufacturing resit exams will be during week commencing 11/05/20
5	I-MAT-A1013 –	Composites Manufacturing for High Performance Structures	Andrew Mills	35		10	Y	18/11/19	18/11/19 Occ A	22/11/19	40	ICW	100				06/01/20	Re-assessment date to be set by agreement of the Module Leader as/when required.
								02/12/19	02/12/19 Occ B	06/12/19	40	ICW	100				13/01/20	
6	I-MNU-A1034 occ A	Operations Management	Dr Harris Makatsoris	32		10	Y	07/10/19	07/10/2019 occ A	11/10/19	40	EX	100				11/12/19	Manufacturing resit exams will be during week 11/05/20
7	I-MNU-A1029 occ A	Operations Analysis	Dr Kostas Salonitis	32		10	Y	28/10/19	28/10/19 occ A	01/11/19	40	EX	100				13/12/19	Manufacturing resit exams will be during week 11/05/20

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	Residential' Start Date	Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment (Independent)	Weighting within module[8] (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment (Multi-part)	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
8	I-WEE-A1110	Advanced Welding Processes	Dr Wojciech Suder	32		10	Y	18/11/19	18/11/19	22/11/19	40	EX	100				03/01/20	Manufacturing resit exams will be during week commencing 11/05/20
9	I-MAT-A1011	Additive and Subtractive Manufacturing Technologies	Dr Isidro Durazo-Cardenas	30		10	Y	21/10/19	21/10/19	25/10/19	40			100 MULTI	ICW GPRES	70 30	18/11/19 25/10/19	Re-assessment date to be set by agreement of the Module Leader as/when required.
10	I-MAT-A1016	Surface Science and Engineering	Prof John Nicholls	30		10	Y	27/01/20	27/01/20	31/01/20	40	ICW	100				24/02/20	Re-assessment date to be set by the Module Leader as/when required.
11	I-UPT-A1186	Functional Coatings and Thin Films	Dr Jeff Rao	32		10	N	27/01/20	27/01/20	31/01/20	40	ICW	100				24/02/20	Re-assessment date set by Module Leader as/when required.
12	I-MAT-A1014	Finite Element Analysis	Dr Muhammad Khan/Dr Hamed Yazdani Nezhad	35		10	Y	11/11/19	11/11/19	15/11/19	40			100 MULTI	PRES ICW	10 90	09/12/19 02/12/19	Re-assessment date to be set by the Module Leader as/when required.
13	N-AEN-M	Manufacturing	Dr Kostas Salonitis	25		10	Y	28/10/19	28/10/19	01/11/19	40	ICW	100				20/12/19	Re-assessment date to be set by the Module Leader as/when required.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
									Calendar			Independent Assessment		Multi-part Assessment			Submission dates	
14	I-MTM-CRS (New module)	Composites Joining, Repair and Serviceability	Dr Hamed Yazdani Nezhad	30		10	N	13/01/20	13/01/20	17/01/20	40	ICW	100				10/02/20	Re-assessment date to be set by agreement of the Module Leader as/when required.
15	I-MTM-NAC (New module)	Nanomaterials and Advanced Composites	Dr Sameer Rahatekar	30		10	N	21/10/19	21/10/19	25/10/19	40	ICW	100				25/11/19	Re-assessment date to be set by agreement of the Module Leader as/when required.
16a	I-MAT-GRPP	Group Project	Dr David Ayre	20		40	Y	10/02/20	10/02/20 occ A	28/04/20	50	GCW / ICW	80 / 20		GPRES GPROJ ICW Observed behaviour	80 20 50 50	28/04/20 05/05/20 05/05/20 05/05/20	
			Dr Supriyo Ganguly						10/02/20 occ B	28/08/20	50	GCW / ICW	80 / 20		GPRES GPROJ ICW Observed behaviour	80 20 50 50	31/08/20 02/09/20 02/09/20 02/09/20	
16b	I-MAT-DISS	Dissertation for Part Time Students	Dr Sue Impey/Dr David Ayre	20		40	Y	10/02/20	10/02/20	28/08/20	50	ICW	100				28/08/20	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers [6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
												Independent Assessment		**Multi-part Assessment**			**Submission dates**	
17	I-MNU-THESIS	Individual Research Project	Dr Muhammad Khan	20		80	Y	10/02/20	Occ A = PT 10/02/20	PT 28/08/20	50	THESIS OR	90 10				28/08/20 01/09/20	
			Dr Muhammad Khan					01/05/20	Occ B = FT 01/05/20	FT 28/08/20	50	THESIS OR	90 10				28/08/20 01/09/20	

† Dates for Full time students only. Part time students have flexibility with dates in these components.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
I-MTM-A2028	Introduction to Manufacturing, Materials and Research Techniques	Manufacturing Technology and Management	EngD in Sustainable Manufacturing Systems,
I-MAT-A1009	Introduction to Materials Engineering	Advanced Materials	Aerospace Materials,
I-GPD-A1505	Lean Product Development	Global Product Development and Management	Engineering Competence
I-MNU-A1018	General Management	Engineering and Management of Manufacturing Systems	Global Product Development and Management, Management and Information Systems, Advanced Materials, Engineering Competence, Metal Additive Manufacturing
I-MAT-A1013	Composites Manufacturing for High Performance Structures	Advanced Materials	Aerospace Manufacturing, Aerospace Materials, Renewable Energy Marine Structures EngD
N-AEN-M	Manufacturing	Aircraft Engineering	Airworthiness
I-MAT-A1016	Surface Science and Engineering	Advanced Materials	Aerospace Materials
I-MAT-A1014	Finite Element Analysis	Advanced Materials	Aerospace Materials, Metal Additive Manufacturing
I-WEE-A1110	Advanced Welding Processing	Welding Engineering	Aerospace Manufacturing, Renewable Energy Marine Structures EngD
I-MNU-A1034	Operations Management	Engineering and Management of Manufacturing Systems	Aerospace Manufacturing, Cyber-Secure Manufacturing, Global Product Development and Management, Management and Information Systems, Engineering Competence
I-MNU-A1029	Operations Analysis	Engineering and Management of Manufacturing Systems	Aerospace Manufacturing, Manufacturing Technology and Management
I-MAT-GRPP	Group Project	Advanced Materials	Aerospace Materials, Aerospace Manufacturing, Engineering and Management of Manufacturing Systems, Global Product Development and Management, Management and Information Systems, Cyber-Secure Manufacturing, Welding Engineering, Metal Additive Manufacturing

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I-MAT-DISS	Dissertation for Part Time Students	Advanced Materials	Aerospace Materials, Aerospace Manufacturing, Engineering and Management of Manufacturing Systems, Global Product Development and Management, Management and Information Systems, Cyber-Secure Manufacturing, Welding Engineering, Metal Additive Manufacturing
I-MNU-THESIS	Individual Research Project	Advanced Materials	Cyber-Secure Manufacturing, Engineering and Management of Manufacturing Systems, Global Product Development and Management, Management and Information Systems, Aerospace Materials, Welding Engineering, Metal Additive Manufacturing, Aerospace Manufacturing

7. How are the ILOs assessed?

The following assessment types are utilised:

The course uses a range of assessment types. Students can expect to have typically 3 written examinations, 5 pieces of assessment by submitted work and several elements of assessment by presentation or viva.

This approach has been adopted in order to ensure that both the fundamental and applied aspects of the course are considered and that the important multi-disciplinary aspects of the subject can be assessed.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.

(Module numbers should correspond with those used in the Course module table above.)

A. Postgraduate Certificate

Award ILOs / Module No.	ILO 1	ILO 2	ILO 3	ILO4
1	GCW		GCW	GCW/ GPRES
2	EX		EX	EX
3	GCW	GCW	GCW	GCW
4			EX	EX
5	ICW	ICW	ICW	ICW
6		EX	EX	
7			EX	EX

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Award ILOs / Module No.	ILO 1	ILO 2	ILO 3	ILO4
8	EX	EX	EX	EX
9	ICW/ GPRES	ICW/ GPRES	ICW/ GPRES	ICW/ GPRES
10	ICW	ICW	ICW	ICW
11	ICW	ICW	ICW	ICW
12	PRES ICW	PRES ICW	PRES ICW	PRES ICW
13	ICW	ICW		ICW
14	ICW	ICW	ICW	ICW
15	ICW		ICW	ICW

B. Postgraduate Diploma

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs / Module No.	ILO 5	ILO 6	ILO 7	ILO 8
16a	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW	GPRES GPROJ ICW
16b	ICW	ICW	ICW	ICW

C. MSc

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs / Module No.	ILO 9
17	THESIS OR

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)

8. **How will the University assure the quality of the provision?**

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New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review. For collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focussed Review which looks at each course in depth. In addition occasional site inspection visits are made.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

9. **What opportunities are graduates likely to have on completing the course?**

The Government's manufacturing strategy is focused on high value manufacturing and central to this agenda is the development and application of disruptive technologies that will drive forward the dramatic changes in manufacturing that will take place over the next 15-20 years. This relies on a significant number of highly trained manufacturing engineers who will be essential to provide the leadership necessary to drive UK high value manufacturing forward and provide the vision for future prosperity. The MSc in Manufacturing Technology and Management is designed to educate

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manufacturing engineers to ensure they possess the skills needed for the high value manufacturing agenda. SEMTA, the Sector Skills Council for science, engineering and technologies estimates that by 2014 another 33,000 engineers will be required to replace those retiring or leaving the profession and most of these new recruits will be from full time education. The rapid developments in manufacturing technology also dictate that sections of the current workforce will require re-skilling and therefore a significant number of part time students should be attracted to this course whilst remaining in employment.

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COURSE SPECIFICATION

Cranfield University: Course Specifications

Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE:	Master of Business Administration

Date of first publication/latest revision:	April 2019

1. What is the course?

Course information

Course Title	Master of Business Administration Master of Business Administration (Energy)
Course code	MBFTMFTC, (Energy Route: ENEF) (Chilean Route: MBACHLF)
Academic Year	2019-20
Valid entry routes	MBA
Additional exit routes	PgCert in Business Administration PgDip in Business Administration
Mode of delivery	Full-time
Location(s)[1] of Study	Cranfield University
School(s)	School of Management
Theme	Leadership and Management
Centre	Centre for Management
Course Director	Dr Andrew Angus
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	No
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	• A minimum of three years' post-qualification work experience. • A good degree and / or professional qualification. • Applicants who do not have a degree are welcomed provided they can demonstrate high levels of achievement, exceptional career progression or evidence of leadership potential.

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[1] If any part of this course is delivered at another site, please note which one(s) here
[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

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Course / SAS Version:

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	If you are an international student you will need to provide evidence that you have achieved a satisfactory test result in an English qualification. The minimum standard expected from a number of accepted courses are as follows: IELTS – 7, TOEFL – 100, Pearson PTE Academic- 68, Cambridge English Scale – 190, Cambridge English: Advanced – A, Cambridge English: Proficiency – B.
UK Qualifications Framework Level	QAA FHEQ Level 7 (Masters)
Benchmark Statement(s)	N/A
Registration Period(s) available	1 year
Course Start Month(s)	October

Institutions delivering the course

This course is delivered by the School of Management, where the research interests consist of a wide range of management functions.

Cranfield University interacts with the following institutions and in the following ways:

- All students will undertake a group consulting project in an external organisation, presenting findings to senior managers from the organisation involved
- Each module will incorporate input from senior managers/practitioners where appropriate
- Some of the modules require learning teams to visit an organisation to audit their approach
- some students undertake research and/or project work off campus, within organisations. In some cases this will take the form of a short term internship, again assessed by project submission;

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited formally by the Association to Advance Collegiate Schools of Business (AACSB) and the Association of MBAs (AMBA). It is also accredited by the European Quality Improvement System (EQUIS).

2. **What are the aims of the course?**

The Cranfield MBA aims to provide a distinctive and collaborative learning experience centred on a process of intense, interactive classroom sessions where the combination of the professional experience of a diverse student cohort and the faculty's direct involvement with global businesses ensures graduates have a deep understanding of contemporary business issues and the capacity to assume active leadership roles. This experience is founded on the integration of four aims:

- To develop a group of influential leaders who will make a significant impact on their organisations and the wider community.
- To deliver a contemporary and comprehensive knowledge of core business functions enabling students to talk knowledgeably to experts in these areas.

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- To create a strategic mind set capable of viewing organisations as consisting of functions and groups whose actions must be motivated and aligned to meet objectives.
- To generate the self-awareness and confidence to operate effectively as a member of and/or leader of a team drawn from a variety of cultures, business experience and personalities.
- To create an understanding as to how to develop leadership capabilities in self and others in order to meet the increasing challenge of change.

This programme is intended for the following range of students:

Experienced professionals who want a "real-world" business education which they can apply directly back to the workplace. Self-motivated managers both from profit and non-for profit organisations who are keen to improve themselves, enhance their skills, knowledge and abilities, and become more effective leaders. Energetic entrepreneurs who want support to start a new business or grow their existing business.

3. **What should students expect to achieve in completing the course?**

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **MBA**

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1. Demonstrate robust yet flexible qualities of leadership and an understanding of a wide range of management techniques.

ILO 2. Exhibit a conceptual understanding of the main functional areas of management and a systematic knowledge of the relevant literature.

ILO 3. How a thorough understanding of the importance of strategy, cross-function working and managing core business processes.

ILO 4. Articulate a critical awareness of the global environment within which organisations operate and the cultural, political, managerial and ethical ambiguities and risks that this gives rise to.

ILO 5. Display the capability to identify, analyse and implement appropriate conclusions for complex problems in the context of uncertainty and change.

ILO 6. Critically evaluate their personal strengths, weaknesses and preferences.

ILO 7. Present confidence in working with others and an ability to argue and present coherently and persuasively influence.

ILO 8. Develop an ability to work with peers in order to create and implement effective strategies.

ILO 9. Demonstrate robust qualities of leadership.

ILO 10. Deal with challenging individuals and situations effectively.

ILO 11. Understand how to manage their career development.

Students following the Energy pathway will also be able to contextualise the above ILOs from an Energy perspective.

4. **How is the course taught?**

The programme is delivered through classroom interaction combined with a high proportion of team work, group projects and private study.

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Students will be supported in their learning and personal development by:

- being placed in a diverse leaning team and supervised by a learning team tutor;
- being exposed to a range of psychometric tests and an assessment centre exercise;
- One to one coaching from professionals.

5. What do students need to achieve in order to graduate?

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A. MBA

An MBA will be awarded on successful completion of 260 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
Module 1 - 15	170
ELECTIVE MODULES:	
70 credits from Modules 16-43	70
TOTAL:	**240**

B. MBA (Energy)

Description	Credits
COMPULSORY MODULES:	
Module 1 - 15	170
Modules 40-43	60
ELECTIVE MODULES:	
10 credits from Modules 16-34a, and 36	10
TOTAL:	**240**

C. MBA (Chilean Collaboration)

Description	Credits
COMPULSORY MODULES:	
Credits awarded for University of Chile (APL)	80
Modules 8-13, 14a-15, 34	90
ELECTIVE MODULES:	
70 credits from Modules 16-33, 35-42	70
TOTAL:	**240**

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If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

Each assessment is awarded a mark out of 100 per cent. Where a module is assessed with more than one assessment e.g., a group project and an examination, marks are awarded separately for each assessment and then weighted together to determine the mark for the module. A student will be deemed to have passed a module if he/she achieves a mark of 50 per cent or more. Each module carries a number of credits which are used as the weightings to calculate an overall weighted average mark for each part of the Programme. Part I and Part II of the Programme are assessed separately and a student will be regarded as having failed either if he/she:

(1) achieve an overall weighted average of less than 50 per cent;
or (2) achieve a mark of less than 50 per cent on more than 30 credits
or (3) achieve a mark of less than 30 per cent on more than 10 credits.

These conditions apply separately to Part I and Part II of the Programme.

In any compulsory module a mark of less than 40 per cent for the individual assessment – it may be an exam or a project – will result in the module receiving a maximum mark of 49 per cent irrespective of the marks gained in any assessed group work. In short you will be deemed to have failed the module

MBA (Energy) - The pass criterion for the MBA (Energy) is the same as the MBA above except that MBA (Energy) students have to select modules 38 to 43.

MBA (Chilean Collaboration) The pass criteria is the same as for the MBA; however in Part I a student will be regarded as having failed if he/she achieves a mark of less than 50 per cent on more than 20 credits. The Chilean students join at the start of Term 2 and are awarded 80 credits for prior learning providing they pass their Masters in Global Management programme at the University of Chile (UoC). In order to meet these criteria the students must return to the UoC, when they finish their Cranfield MBA studies.

Resit Policy

If the mark for Part I indicates failure students you will have the opportunity to resit examinations or individual assessments up to a maximum of 30 credits (Chilean students resit up to 20 credits) in Part I. If the individual element of the module failed was an examination the resit will be an examination and if it was an individual written project, the student will be required to resubmit a project. However, in both cases the module leader can (with the permission of the Academic Programme Director) change the nature of the resit. Resits will be scheduled early in Term 3. The main purpose of resits is to give students who would otherwise fail Part I a final opportunity to pass it but in a manner that does not create an unfair opportunity for students to increase their overall module average. Therefore:
- students will only be allowed to take resits if they are deemed to have failed Part I due to one of the three criteria set above; and
- all resit marks will be capped at 50 per cent; and
- students can only resit an examination once.

In determining whether or not having taken resits a student is deemed to have passed Part I, the highest of the following will stand, subject to a maximum mark of 50 per cent:
- the resit exam mark;
- the overall module mark with the resit exam mark substituted for, and given the same weighting as, the original individual assessment mark;

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- the original overall module mark.

6. How is the course structured?

Full-time students register for the programme at the end of September and are expected to complete the course within thirteen calendar months.

The MBA programme is in two parts. Part I lasts for six months on the full-time programme and consists of compulsory modules designed to provide students with a contemporary understanding of basic business functions e.g., accounting and marketing. Part I is spread over terms 1 and 2. In Part II, which is spread over terms 3 and 4, students gain discretion over their learning by choosing from a range of electives, the subjects they believe will be most beneficial to their learning and future careers.

Throughout the whole programme i.e., Part I and II, the Developing Leadership theme is emphasised through four compulsory modules dealing with self-awareness, leadership skills and contemporary leadership challenges. In term 3, students are also completing their Data Analytics and Decision Making module, which runs throughout the Part I and II and includes classes on qualitative and quantitative research methods before they have to apply this to a real world consulting project. Moreover, at the end of term 3 students join together for the International Business Assignment. During this period students choose a traditional "study tour" consisting of a visit to a business school and companies in a country chosen from a short-list, or field trips where small groups of students work with small companies or charities in a different culture.

Course modules

The following modules outline all parts of the programme leading to an **MBA**. Other awards associated with the course include some or all of these modules.

FTMBA is all 'A' Occurences

Module Number	Module code	Title	Module Leader	Contact hours[3]	Total hours delivered by Visiting Lecturers [4]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[5] - 40% or 50%	Type of Assessment	Weighting within module6 (%) of Independent assessments	Weighting within module of multi-part assessments [7](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[8]	Assessment Submission and/or exam date[9]	Assessment / Exam Retake date
									Calendar			**Assessment**						
												Independent Assessment		**Multi-part Assessment**			**Submission dates**	
PART ONE MT1 Modules																		
1	M-M/OBL	Organisational Behaviour: Developing Leadership	Dr Richard Kwiatkowski	40		20	N	07/10/19	07/10/19	18/11/19		IPROJ	100				06/12/19	
2	M-M/ACC	Accounting	Dr Matthias Nnadi	20		10	N	22/11/19	22/11/19	27/11/19		EX	100				EXAM WEEK1	
3	M-M/OPS	Strategic Operations Management	Dr Abdelkader Aoufi	20		10	N	28/10/19	28/10/19	28/11/19				100 MULTI	GPRES GCW	40 60	28/11/19 06/12/19	

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[3] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[4] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[5] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%. This will be at the Board of Examiners discretion.

[6] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[7] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[8] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[9] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Module Number	Module code	Title	Module Leader	Contact hours[3]	Total hours delivered by Visiting Lecturers[4]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[5] - 40% or 50%	Type of Assessment	Weighting within module6 (%) of Independent assessments	Weighting within module of multi-part assessments[7] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[8]	Assessment Submission and/or exam date[9]	Assessment / Exam Retake date
4	M-M/MKT	Strategic Marketing	Dr Stan Maklan	20		10	N	14/10/19	14/10/19	26/11/19		ICW	50	50 MULTI	GCW GPRES	30 20	06/12/19 30/10/19 07/11/19	
5	M-M/EOS	Economics of Organisations and Strategy	Dr Catarina Figeuira	20		10	N	07/10/19	07/10/19	25/10/19		GPRES GCW	50 50				12/11/19 18/11/19	
6	M-M/ENT	Entrepreneurship and New Venture Creation	Dr Oksana Koryak	20		10	Y	18/11/19	18/11/19	27/11/19		GCW	100				29/11/19	
7	M-M/ESB	Entrepreneurial Finance	Dr Stephanie Hussels	20		10	Y	02/12/19	02/12/19	05/12/19		WAC	100				14/12/19	
TERM TWO MT2																		
8	M-M/FIN	Financial Management	Dr Andrea Moro	20		10	N	20/01/20	20/01/20	09/03/20		EX	100				Exam Week5	
9	M-M/STG	Strategic Management	Dr Richard Schoenberg	20		10	Y	21/01/20	21/01/20	25/2/20		GCW	100				23/03/20	
10	M-M/PMI	Project Management Introduction	John Algar	20		10	N	13/01/20	13/01/20	17/01/20		EX	40	60 MULTI	GCW GPRAC GPRES	10 30 20	Exam Week2 13/03/20 13/03/20 13/03/20	
11	M-M/GME	Global Macroeconomi	Prof Joe Nellis	20		10	Y	03/02/20	03/02/20	24/02/20		GCW	100				26/03/20	

Module Number	Module code	Title	Module Leader	Contact hours[3]	Total hours delivered by Visiting Lecturers[4]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[5] - 40% or 50%	Type of Assessment	Weighting within module6 (%) of Independent assessments	Weighting within module of multi-part assessments[7](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[8]	Assessment Submission and/or exam date[9]	Assessment / Exam Retake date
													Independent Assessment		Multi-part Assessment		Submission dates	
		cs and Business Environment																
12	M-M/MPC	Challenges for Leaders: Managing People and Change	Debora Gottardello	20		10	Y	20/01/20	20/01/20	19/02/20		EX	100				Exam week5	
13	M-M/IBA	International Business Assignment	Dr Emma Parry	20		10	Y	05/06/20	05/06/20	15/06/20		ICW GCW	20 80				17/07/20 17/07/20	
14	M-M/DMDA	Data Analytics and Decision Making	Dr Catarina Figueira	40		20	Y	20/01/20	20/01/20	11/05/20		EX GPROJ	30 70				Exam week5 22/06/20	
14a	M-M/DMDAC	Decision Making and Data Analytics (Chilean students only) – supplemented by APL	Dr Catarina Figueira	20		10	N	NOT RUNNING IN 2019-20				ICW	100				22/06/20	
15	M-M/LIA	Leadership in Action	Dr Doyin Atewologun	20		10	N	03/03/20	03/03/20	27/07/20		ICW	100				22/05/20	
	ELECTIVES MT34																	

Module Number	Module code	Title	Module Leader	Contact hours[3]	Total hours delivered by Visiting Lecturers[4]	Credits	Is the module shared? Y/N	Calendar Module Start Date (eg Pre-course task)	Calendar 'Residential' Start Date	Calendar 'Residential' End Date	Minimum Mark[5] - 40% or 50%	Assessment Independent Assessment Type of Assessment	Assessment Independent Assessment Weighting within module6 (%) of Independent assessments	Assessment Multi-part Assessment Weighting within module of multi-part assessments[7](100%)	Assessment Multi-part Assessment Type of Assessment	Assessment Multi-part Assessment Weighting of individual elements of multi-part assessment[8]	Assessment Submission dates Assessment Submission and/or exam date[9]	Assessment Submission dates Assessment / Exam Retake date
16	M-M/IST	International Strategy	Prof Patrick Reinmoeller	20		10	Y	26/05/20	26/05/20	04/6/20		GCW ICW	80 20				04/07/20 04/04/20	
17	M-M/MMA	Managing International Mergers and Acquisitions	Dr Richard Schoenberg	20		10	Y	NOT RUNNING IN 2019-20	NOT RUNNING IN 2019-20	NOT RUNNING IN 2019-20		GCW GPRES	70 30				N/A	
18	M-M/CFS	Corporate Financial Strategy	Dr Benoit Chevalier-Roignant	20		10	Y	20/04/20	20/04/20	27/04/20		EX	100				Exam Week6	
19	M-M/CFT	Corporate Finance Transactions	N/A	20		10	N	Not Running in 2019-2020				ICW GCW	10 90				N/A	
20	M-M/SCC	Strategizing in Challenging Contexts	Dr Richard Schoenberg	20		10	Y	26/05/20	26/05/20	01/06/20		GCW	100				10/07/20	
21	M-M/SHR	Strategic Human Resource Management in the 21st Century	Dr Valentina Battista	20		10	Y	28/04/20	28/04/20	30/4/20		ICW	100				18/05/20	
22	M-M/ DVSC	Driving Value Through the Supply Chain	Assoc Prof Mike Bernon	20		10	Y	17/6/20	17/6/20	19/06/20		ICW	100				14/08/20	

Module Number	Module code	Title	Module Leader	Contact hours[3]	Total hours delivered by Visiting Lecturers[4]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[5] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module6 (%) of Independent assessments	Weighting within module of multi-part assessments[7](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[8]	Assessment Submission and/or exam date[9]	Assessment / Exam Retake date
23	M-M/NBO	Negotiating in Business and Organisations	Dr Javier Marcos	20		10	Y	20/07/20	20/07/20	22/7/20		ICW	100				07/08/20	
24	M-M/MSI	Managing Strategic Innovation	Prof Mark Jenkins	20		10	N	NOT RUNNING 2019-20				GCW	100				15/04/20	
25	M-M/BL	Business Law	Dr Anicee van Engeland	20		10	Y	16/11/19	16/11/19	13/12/19		ICW	100				29/01/20	
26	M-M/IHN	Identifying (Customers') Hidden Needs	Prof Keith Goffin	20		10	N	Not Running in 2019-2020				GCW	100				N/A	
27	M-M/IRM	Investment and Risk Management	Prof Sunil Poshakwale	20		10	N	15/04/20	15/04/20	29/04/20		EX	100				EXAM WEEK6	
28	M-M/LSO	Leading Sales and Customer Management Organisations	Dr Javier Marcos	20		10	Y	23/06/20	23/06/20	25/06/20		ICW	100				24/07/20	
29	M-M/CPPM	Major Critical Projects and Programme Management – a Sectoral Approach	Dr Edward Ochieng	20		10	Y	Not Running in 2019-2020						100 MULTI	GPRES GCW	30 70	N/A	
30	M-M/LMF	Leading and Managing the Family	Dr Stephanie Hussels	20		10	Y	14/07/20	14/07/20	28/07/20		GCW	100				21/08/20	

Module Number	Module code	Title	Module Leader	Contact hours[3]	Total hours delivered by Visiting Lecturers[4]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	Residential' Start Date	Residential' End Date	Minimum Mark[5] - 40% or 50%	Type of Assessment	Weighting within module6 (%) of Independent assessments	Weighting within module of multi-part assessments[7](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[8]	Assessment Submission and/or exam date[9]	Assessment / Exam Retake date
		Enterprise																
31	M-M/SQM	Strategic Quality Management	Dr Abdelkader Aouf	16		10	Y	26/06/2020		26/06/2020	23/07/2020				100 MULTI	GPRES GCW	40 60	14/08/2020 11/09/2020	
32	MXM/LSB	Leading Sustainable Business	Dr Rosina Watson	20		10	Y	10/03/20	10/03/20	19/3/20		ICW	100				20/04/20	
33	M-M/LTP	Leaders as Thinkers: Leadership through Philosophy	Dr Andrey Pavlov	20		10	N	16/4/20	16/4/20	27/5/2020		ICW	100				19/06/20	
34	M-M/IP	Independent Project	Dr Andrew Angus			10	Y	14/04/20	14/04/20	31/08/20		ICW	100				31/08/20	
34 a	M-M/IP1	Independent Project	Dr Andrew Angus			10	Y	14/04/20	14/04/20	31/08/20		ICW	100				31/08/20	
35	M-M/IP2	Independent Project	Dr Andrew Angus			20	Y	14/04/20	14/04/20	31/08/20		ICW	100				31/08/20	

Module Number	Module code	Title	Module Leader	Contact hours[3]	Total hours delivered by Visiting Lecturers [4]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[5] - 40% or 50%	Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module6 (%) of Independent assessments	Weighting within module of multi-part assessments [7](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[8]	Assessment Submission and/or exam date[9]	Assessment / Exam Retake date
36	M-M/GP1	Group Project	Dr Andrew Angus			10	Y	14/04/20	14/04/20	31/08/20		GCW	100				31/08/20	
37	M-M/GP2	Group Project	Dr Andrew Angus			20	Y	14/04/20	14/04/20	31/08/20		GCW	100				31/08/20	
MBA (Energy)																		
38	M-ME/EMEP	Energy Markets. An Executive Perspective	Prof John Oakey	20		10	Y	14/04/20	14/04/20	16/04/20				100 MULTI	ICW GCW	50 50	04/06/20 14/05/20	
39	M-ME/SCET	Sustainable and Conventional Energy Technologies	Prof Phil Hart	20		10	Y	05/05/20	05/05/20	07/05/20				100 MULTI	ICW GCW	50 50	05/06/20 06/07/20	
40	M-ME/FPEC	Value Chain of Fuels Production and Energy Conversion	Dr Peter Clough	20		10	Y	12/05/20	12/05/20	20/05/20		ICW	100				26/06/20	
41	M-ME/RMDM	Risk Management and Decision Making in Energy Industry	Mahmood Shafiee/Phil Longhurst	20		10	Y	02/06/20	02/06/20	04/06/20				100 MULTI	ICW GCW	50 50	5/7/20 17/07/20	
42	M-ME/RMS	Resource Management	Prof Phil Longhurst	20		10	Y	20/04/20	20/04/20	23/04/20				100 MULTI	ICW GCW	50 50	05/06/20 08/05/20	

Module Number	Module code	Title	Module Leader	Contact hours[3]	Total hours delivered by Visiting Lecturers [4]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[5] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	' Residential' Start Date	' Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module6 (%) of Independent assessments	Weighting within module of multi-part assessments [7](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[8]	Assessment Submission and/or exam date[9]	Assessment / Exam Retake date
		Strategy																
43	M-ME/SECP	Specialised Energy Consultancy Project	Dr Phil Longhurst	10		10	N	27/04/20	27/04/20	01/05/20		ICW	100				30/09/2020	

Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
M-M/ENT	Entrepreneurship and New Venture Creation	Master of Business Administration	Executive Master of Business Administration
M-M/ESB	Entrepreneurial Finance for Early Stage Businesses	Master of Business Administration	Executive Master of Business Administration
M-M/STG	Strategic Management	Master of Business Administration	Executive Master of Business Administration
M-M/GME	Global Macroeconomics and Business Environment	Master of Business Administration	Executive Master of Business Administration
M-M/MPCS	Challenges for Leaders: Managing People, Change and Sustainability	Master of Business Administration	Executive Master of Business Administration
M-M/IBA	International Business Assignment	Master of Business Administration	Executive Master of Business Administration
M-M/DMDA	Data Analytics and Decision Making	Master of Business Administration	Executive Master of Business Administration
M-M/EFI	Entrepreneurial Finance for Later Stage Businesses	Master of Business Administration	Executive Master of Business Administration
M-M/IST	International Strategy	Master of Business Administration	Executive Master of Business Administration
M-M/MMA	Managing International Mergers and Acquisitions	Master of Business Administration	Executive Master of Business Administration
M-M/CFS	Corporate Financial Strategy	Master of Business Administration	Executive Master of Business Administration
M-M/SCC	Strategizing in Challenging Contexts	Master of Business Administration	Executive Master of Business Administration
M-M/SHR	Strategic Human Resource Management in the 21st Century	Master of Business Administration	Executive Master of Business Administration
M-M/DVSC	Driving Value Through the Supply Chain	Master of Business Administration	Executive Master of Business Administration
M-M/NBO	Negotiating in Business and Organisations	Master of Business Administration	Executive Master of Business Administration
M-M/BL	Business Law	Master of Business Administration	Executive Master of Business Administration
M-M/LSO	Leading Sales and Customer Management Organisations	Master of Business Administration	Executive Master of Business Administration
M-M/CPPM	Major Critical Projects and Programme Management – a Sectoral Approach	Master of Business Administration	Executive Master of Business Administration
M-M/LMF	Leading and Managing the Family Enterprise	Master of Business Administration	Executive Master of Business Administration
M-M/SQM	Strategic Quality Management	Master of Business Administration	Executive Master of Business Administration
M-M/MSI	Managing Strategic Innovation	Master of Business Administration	Executive Master of Business Administration; Business and Strategic Leadership
M-M/IP M-M/IP1 M-M/IP2	Independent Project	Master of Business Administration	Executive Master of Business Administration

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M-M/GP1 M-M/GP2	Group Project	Master of Business Administration	Executive Master of Business Administration

7. How are the ILOs assessed?

The following assessment types are utilised:

The programme uses a range of assessment types. In addition to closed book and open book written examinations, students undertake a wide range of projects. Written Assessments of Case Study (WACs) are very valuable learning whereby students working with their teams determine the answer to a question posed around a case study, but then each member of the team must write up an individual report consisting of no more than 1,500 words. The assessment is excellent training for writing business reports under time pressure. A more unusual type of assessment is the simulation. Here students – again working in teams – might be required to build a warehouse or an electrical product – within a limited period of time, where information may be given and/or changed at intervals. Many projects involve working with a company on a live project. Towards the end of the programme there will be the opportunity for some students to work on company based projects or short term internships, assessed through a written report.

Assessment and ILO Mapping

Complete the grid below by inserting in the boxes which assessments from the modules directly assess the Award ILOs.
(Module numbers should correspond with those used in the Course module table above.)

A. MBA

Award ILOs / Module No.	ILO1.	ILO2.	ILO3.	ILO4.	ILO5.	ILO6.	ILO7.	ILO8.	ILO9.	ILO10.	ILO11.
01	IPROJ		IPROJ	IPROJ	IPROJ	IPROJ			IPROJ		
02	EX	EX			ICW						
03	MULTI	MULTI	MULTI	MULTI			MULTI	MULTI			
04	MULTI	ICW	ICW		ICW		MULTI	MULTI			
05		EX		EX	ICW			ICW			
06		GCW	GCW	GCW			GCW	GCW	GCW		GCW
07				MULTI	MULTI		MULTI	MULTI			MULTI
08	ICW				EX			ICW		ICW	
09	GPRES		ICW	GPRES	ICW		GPRES	GPRES		GPRES	
10	EX	MULTI		EX	EX		MULTI	MULTI			
11	GCW			GCW	GCW	GCW					
12	EX					EX		EX			EX
13	GCW		ICW	GCW	ICW / GCW		GCW	GCW		GCW	
14					EX/ GPROJ	GPROJ					
14a	ICW	ICW				ICW				ICW	
15	ICW							ICW	ICW		ICW

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Award ILOs / Module No.	ILO1.	ILO2.	ILO3.	ILO4.	ILO5.	ILO6.	ILO7.	ILO8.	ILO9.	ILO10.	ILO11.
16			ICW / GCW	ICW			GCW	GCW			
17			GPRES	GPRES /GCW	GCW			GPRES			
18	EX		EX		EX						
19	ICW / GCW	ICW			GCW		GCW	GCW			
20			GPRES /GWC	GWC	GWC		GPRES /GWC	GWC			
21	ICW	ICW								ICW	ICW
22	ICW	ICW			ICW						ICW
23	GPRAC				ICW		ICW				
24				GWC	GWC		GWC	GWC			
25	ICW				ICW					ICW	
26				GWC			GWC	GWC		GWC	
27				EX	EX						EX
28	NOT RUNNING IN 2017/18										
29		GPRES GCW	GPRES GCW	GPRES GCW	GPRES GCW		GCW	GPRES GCW			
30		GWC	GWC	GWC	GWC			GWC	GWC		
31		GWC	GWC		GWC			GWC			
32	ICW	ICW	ICW	ICW	ICW						
33	ICW		ICW	ICW	ICW	ICW			ICW	ICW	
34/34a		ICW	ICW	ICW	ICW	ICW			ICW		ICW
35		ICW	ICW	ICW	ICW	ICW			ICW		ICW
36		GCW	GCW	GCW	GCW	GCW			GCW		GCW
37		GCW	GCW	GCW	GCW	GCW			GCW		GCW
38			ICW GCW	ICW GCW	ICW GCW		ICW GCW	ICW GCW			
39			ICW GCW	ICW GCW	ICW GCW		ICW GCW	ICW GCW			
40			ICW GCW	ICW GCW	ICW GCW		ICW GCW	ICW GCW			
41			ICW GCW	ICW GCW	ICW GCW		ICW GCW	ICW GCW			
42			ICW GCW	ICW GCW	ICW GCW		ICW GCW	ICW GCW			
43	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW	ICW

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)
N/A			

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8. <u>How will the University assure the quality of the provision?</u>

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

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1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. **What opportunities are graduates likely to have on completing the course?**

The list of opportunities available to our MBAs after graduating is extremely wide. Drawing on recent surveys of our graduates the most popular functions were as follows:

General Management
Engineering and R & D Management
Consultancy
Business Development
Strategy
Sales/Marketing
Finance/Accounting
Operations
IT Project Management

In addition, a small but growing number of students set-up their own businesses, though this number increases after two to three years post graduation.

Master of Business Administration COURSE SPECIFICATION
QA&E USE ONLY: Version 4.2 September 2017   Course / SAS Version:

COURSE SPECIFICATION

Cranfield University: Course Specifications

Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

COURSE TITLE: MSc in Military Aerospace and Airworthiness

Date of first publication/latest revision: 2019

1. What is the course?

Course information

Course Title	Military Aerospace and Airworthiness
Course code	MSMAAPTR, PDMAAPTR, PCMAAPTR, SPMAAPTR
Academic Year	2019-2020
Valid entry routes	MSc, PgDip, PgCert
Exit routes	MSc, PgDip, PgCert
Mode of delivery	Part-time
Location(s)[1] of Study	Shrivenham and Bedford
School(s)	Cranfield Defence and Security
Theme	N/A
Centre	Centre for Defence Engineering: Aeromechanical Systems
Course Director	Dr John Economou
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	Yes
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	A first or Second honours degree in a relevant mathematics, science or engineering discipline; additionally an IELTS score of 7.0 is required by students for whom English is not a first language.
UK Qualifications Framework Level	QAA FHEQ level 7 (Masters)

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[1] If any part of this course is delivered at another site, please note which one(s) here
[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

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Benchmark Statement(s)	As set out in the Quality Assurance Agency for Higher Education subject benchmark statements for Engineering, Mathematics and Physics at Masters level
Registration Period(s) available	A student who registers for the PgCert will have a registration period of three years. For the PgDip this will be four years, and for the MSc five years.
Course Start Month(s)	September and January

Institutions delivering the course

This course is delivered by Cranfield Defence and Security (Shrivenham Campus) and the School of Aerospace, Transport and Manufacturing (Cranfield Campus).

Cranfield University interacts with the following institutions and in the following ways:

The Military Aerospace and Airworthiness course is delivered through the Defence Academy with the primary customers being the Military Aviation Authority and the Defence Equipment and Support (DE&S) Organisation. The Course Team has worked closely with the customers to ensure that the course meets their educational requirements whilst maintaining the academic standards of the University.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is accredited formally by The Royal Aeronautical Society Society up to, and including, academic year 2021/22.

2. **What are the aims of the course?**

The aim of the course is to provide education, on a part-time basis, for employees within the MOD's Defence Equipment and Support agency, the wider MOD, the Armed Forces, and the international defence industry to enable them to work more effectively in the fields of military aerospace technology, airworthiness and safety.

Suitably qualified students, who achieve an acceptable standard on the course, are awarded, as appropriate, either an MSc degree, Postgraduate Diploma (PgDip) or Postgraduate Certificate (PgCert) in Military Aerospace and Airworthiness (MAA) by Cranfield University.

The aims of the PgCert are:

- to provide students with a general understanding of the engineering and management theories, concepts, applications and practices in Military Aerospace and Airworthiness to enable students to relate their knowledge and understanding of Military Aerospace and Airworthiness to the interpretation and analysis of relevant engineering and management information.
- to equip students with the skills necessary to contribute effectively within their own organization and work with their customers and suppliers in the field of Military Aerospace and Airworthiness.

In addition to the PgCert the aims of the PgDip are:

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- to provide students with the opportunity to acquire a broader knowledge base and a more holistic understanding of the engineering and management theories, concepts, applications and practices associated with Military Aerospace and Airworthiness than can be achieved at PgCert level.
- to enable students to relate their broader knowledge and understanding of Military Aerospace and Airworthiness to the interpretation and analysis of a more multidisciplinary range of engineering and management information than can be achieved at PgCert level.
- to equip students with the skills necessary to integrate effectively across a wide range of business groups within their own organisation as well as those of their customers and suppliers in the field of Military Aerospace and Airworthiness.

In addition to the PgDip the aims of the MSc are:

- that through the successful completion of a dissertation students will demonstrate independent learning and their ability to describe, analyse and critically review current research and methodologies in Military Aerospace and Airworthiness.
- for students to conduct a piece of original research, through an application of the knowledge, understanding and skills acquired during the taught phase, on a topic relevant to Military Aerospace and Airworthiness.

This programme is intended for the following range of students:

- engineers and scientists within the MOD's Defence Equipment and Support agency, the wider MOD, the Armed Forces, and the international defence industry.

3. What should students expect to achieve in completing the course?

Award intended learning outcomes (ILOs) (skills and knowledge).

A. Postgraduate Certificate in Military Aerospace and Airworthiness

In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1.   Identify key theoretical principles, concepts and practices in military aerospace technology, airworthiness and safety

ILO 2.   Critically analyse the design, operation and performance of military aircraft at a level appropriate to airworthiness requirements

ILO 3.   Demonstrate a critical awareness of aviation safety management

ILO 4.   Utilise knowledge, theories and concepts to quantify and critically analyse operational and performance data for selected military aircraft

ILO 5.   Based upon the lessons learned from previous accidents produce reliable, valid and incisive conclusions regarding the key aspects affecting the airworthiness of military aircraft

ILO 6.   Critically evaluate the ways in which aviation safety is quantified and managed

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B. Postgraduate Diploma in Military Aerospace and Airworthiness

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 7. Demonstrate knowledge and critical understanding of a broad range of aviation disciplines and their interdependency in the context of military aerospace and airworthiness

ILO 8. Demonstrate the application of knowledge and understanding in a complex multidisciplinary aerospace technology environment and within an airworthiness context

ILO 9. Synthesise and critically analyse systems-level military aircraft data

C. MSc in Military Aerospace and Airworthiness

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 10. Identify relevant areas of previous research, placing them in context with a research project and providing critical appraisal

ILO 11. Critically evaluate facts, concepts, principles and theories and articulate these through reasoned analysis and discussion

ILO 12. Describe the background to an area of research, justify the research methodologies and discuss the main findings and conclusions in a viva voce examination

ILO 13. Assess new research ideas, concepts or methodologies through the use of techniques such as experimentation, analytical models and numerical models

ILO 14. Plan a research project with aims, objectives, risk assessment and time lines (with identification of critical path and contingencies)

ILO 15. Engage confidently in academic and professional communication, reporting clearly and concisely

4. How is the course taught?

The course is delivered on a part-time modular basis and conforms to the University's system of 10 credits (100 learning hours) per module. It is taught, in general, by conventional means through student attendance of lectures at the Cranfield or Shrivenham campuses. Students will be provided with pre-course and post-course reading and assessment as dictated by the individual course modules. All lecture material, together with a non-assessed online mathematics self-taught module, made available through the CDS VLE (Moodle).

5. What do students need to achieve in order to graduate?

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Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out in Section 7. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A.   Postgraduate Certificate

The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
00 03, 04, 18, 21, 22	0 50
ELECTIVE MODULES:	
One module to the value of 10 credits chosen from 05-09, 11-17, 23-25	10
TOTAL:	**60**

AEF[3] QUALIFIED CANDIDATES ONLY

Description	Credits
APCL MODULES	
21, 22	20
CORE MODULES:	
00 03, 04, 18, 20	0 40
ELECTIVE MODULES	
N/A	
TOTAL:	**60**

B.   Postgraduate Diploma

The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
00, 03, 04, 18, 21, 22	0 50
ELECTIVE MODULES:	
Modules to the value of 70 credits chosen from 05-09, 11-17,	70

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[3] Aeronautical Engineering Fundamentals (AEF) is a five-week, 20-credit Accredited short course.

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Description	Credits
23-25	
TOTAL:	120

AEF[3] QUALIFIED CANDIDATES ONLY

Description	Credits
APCL MODULES	
21, 22	20
COMPULSORY MODULES:	
00	0
03, 04, 18, 20	40
ELECTIVE MODULES	
Modules to the value of 60 credits chosen from 05-09, 11-17, 24, 25	60
TOTAL:	120

C.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
00,	0
03, 04, 18, 21, 22,	50
19	80
ELECTIVE MODULES:	
Modules to the value of 70 credits chosen from 05-09, 11-17, 23-25	70
TOTAL:	200

AEF[3] QUALIFIED CANDIDATES ONLY

Description	Credits
APCL MODULES	
21, 22	20
COMPULSORY MODULES:	
00	0
03, 04, 18, 20	40
19	80
ELECTIVE MODULES	
Modules to the value of 60 credits chosen from 05-09, 11-17, 24, 25	60
TOTAL:	200

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If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria
The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does <u>not</u> have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[4] [5]
- **For Taught Assessments,** the minimum mark for each individual taught assessment <u>on the first attempt</u> for the significant majority of the taught assessments, noting that:
  - o if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  - o if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
  - o it is <u>not</u> permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

6. <u>How is the course structured?</u>

Part-time students register for the course in September or January and are expected to complete the course within 5 years.

Normal entry
The course is offered on a part-time basis only. The PgCert contains five compulsory modules.

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[4] For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[5] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

- MAA03: Airworthiness of Military Aircraft.
- MAA04: Aviation Safety Management.
- MAA18: Safety Assessment of Aircraft Systems.
- MAA21: Fixed-Wing Aeromechanics.
- MAA22: Propulsion Systems.

These provide an overarching introduction to the subject of military aerospace and airworthiness and impart the essential knowledge required by all students on the course. The first three modules cover the underpinning aspects of airworthiness and aviation safety. The latter two modules encompass the core elements of aerospace technology: aerodynamics; propulsion; flight mechanics; structures.

Students then choose one further module to complete the PgCert or a further seven to complete the PgDip (MSc taught phase). This provides the student with the flexibility to tailor their studies to account for prior educational and work experience and the current and future needs of their employment role.

The modules taken in the taught phase of the MSc (the PgDip) provide students with the knowledge and skills necessary to complete a research-based project, which forms the final part of the Masters award. Lecturing staff on both campuses will undertake supervision of research dissertations.

AEF-Qualified Students
Students who have successfully passed the Aeronautical Engineering Fundamentals (AEF) Short Course for Credit may use the 20 credits obtained from that course plus a 10-credit top-up module (MAA20) in lieu of the following three 10-credit MAA modules.

- MAA21: Fixed-Wing Aeromechanics
- MAA22: Propulsion Systems
- MAA23: Rotary-Wing Aeromechanics

In addition, students complete the three compulsory airworthiness and aviation safety modules:

- MAA03: Airworthiness of Military Aircraft
- MAA04: Aviation Safety Management
- MAA18: Safety Assessment of Aircraft Systems

Students then choose a further six modules to complete the PgDip (MSc taught phase) plus a research project, which forms the final part of the Masters award.

Course calendar
This course is offered solely on a part-time basis. Students can join the programme in either September or January. The course timetable enables students to complete the compulsory modules in the first year with either start date. The course duration is expected to be:

Minimum period of registration
- PgCert: One year
- PgDip: One year
- MSc: Two years

Maximum period of registration
- PgCert: Three years

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- PgDip: Four years
- MSc: Five years

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Course modules

The following modules outline all parts of the programme leading to an MSc. Other awards associated with the course include some or all of these modules.

MAA Module Number	Module code	Title	Module Leader	Contact hours[6]	Total hours delivered by Visiting Lecturers[7]	Credits	Is the module shared? Y/N	Calendar — Module Start Date (e.g. Pre-course task)	Calendar — 'Residential' Start Date	Calendar — 'Residential' End Date	Minimum Mark[8] - 40% or 50%	Assessment — Independent Assessment — Type of Assessment	Assessment — Independent Assessment — Weighting within module (%) of Independent assessment	Assessment — Multi-part Assessment — Weighting within module of multi-part assessments[9] (100%)	Assessment — Multi-part Assessment — Type of Assessment	Assessment — Multi-part Assessment — Weighting of individual elements of multi-part assessment[10]	Submission dates — Assessment Submission and/or exam date[11]	Submission dates — Assessment / Exam Retake date
00	R-MAA-SS	Study Skills and Registration	Dr John Economou	12		0	N	02/09/19 A19 13/01/20 B19	02/09/19 13/01/20	04/09/19 15/01/20	N/A	AO					N/A	
03	R-MAA-AMA	Airworthiness of Military Aircraft	Miss Laura Lacey	30		10	N	09/12/19 A19 06/07/20	09/12/19	13/12/19	50 50	EX ICW	30 70				13/12/19 17/02/20	16/03/20 08/05/20

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[6] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[7] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[8] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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MAA Module Number	Module code	Title	Module Leader	Contact hours[6]	Total hours delivered by Visiting Lecturers[7]	Credits	Is the module shared? Y/N	Module Start Date (e.g. Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[8] - 40% or 50%	Type of Assessment	Weighting within module (%) of Independent	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
								B19	06/07/20	10/07/20	50 50	EX ICW	30 70				10/07/20 07/09/20	02/10/20 30/11/20
04	N-SAI-ISMS	Aviation Safety Management	Dr Simon Mitchell Mr David Barry	30		10	Y	02/09/19 A19 30/03/20 B19	02/09/19 30/03/20	06/09/19 03/04/20	40 40	ICW ICW	100 100				04/11/19 01/06/20	AY20/21
05	N-AW-ATEMO	Air Transport Engineering – Maintenance Operations	Dr Cenqiz Turkoglu	30	0	10	Y	10/02/20	10/02/20	14/02/20	40			100	EX ICW	30 70	14/02/20 14/04/20	AY20/21
06	N-HFS-AAI	Aircraft Accident Investigation and Response	Dr Leigh Dunn	30		10	Y	20/04/20	20/04/20	24/04/20	40	ICW	100				22/06/20	AY20/21
07	R-MAA-AS	Aircraft Survivability	Mr Ioannis Vagias	35		10	N	09/03/20	09/03/20	13/03/20	40	ICW	100				11/05/20	AY20/21
08	N-AW-ICAS	Design Durability and Integrity of	Dr Y Xu	35		10	Y	06/07/20	06/07/20	10/07/20	40	ICW	100				07/09/20	AY20/21

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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MAA Module Number	Module code	Title	Module Leader	Contact hours[6]	Total hours delivered by Visiting Lecturers[7]	Credits	Is the module shared? Y/N	Module Start Date (e.g. Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[8] - 40% or 50%	Type of Assessment (Independent)	Weighting within module (%) of Independent	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment (Multi-part)	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
		Composite Aircraft Structures																
09	N-AW-FAEC	Fundamentals of Aircraft Engine Control	Dr Theoklis Nikolaidis	30		10	Y	09/03/20	09/03/20	13/03/20	40	ICW	100				11/05/20	AY19/20
11	R-MAA-GW	Guided Weapons	Dr Derek Bray	32		10	Y	13/01/20	13/01/20	17/01/20	40	ICW	100				16/03/20	AY20/21
12	N-AEN-ASC	Introduction to Aircraft Structural Crashworthiness	Dr Hessam Ghasemnejad	25		10	Y	29/06/20	29/06/20	03/07/20	40	ICW	100				01/09/20	AY20/21
13	R-MAA-IHF	Introduction to Human Factors	Miss Laura Lacey	40		10	N	18/11/19	18/11/19	22/11/19	40 40	GPRAC ICW	20 80				22/11/19 31/01/20	AY20/21 AY20/21
14	N-AW-MIGT	Mechanical Integrity of Gas Turbines	Dr Panagiotis Laskaridis	30		10	Y	20/04/20	20/04/20	24/04/20	40	ICW	100				22/06/20	AY20/21
15	R-MAA-MAS	Military Aircraft Systems	Dr John Economou	35		10	Y	01/06/20	01/06/20	05/06/20	40 40	EX ICW	50 50				13/07/20 03/08/20	AY20/21 AY20/21

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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MAA Module Number	Module code	Title	Module Leader	Contact hours[6]	Total hours delivered by Visiting Lecturers[7]	Credits	Is the module shared? Y/N	Calendar Module Start Date (e.g. Pre-course task)	Calendar 'Residential' Start Date	Calendar 'Residential' End Date	Minimum Mark[8] - 40% or 50%	Independent Assessment Type of Assessment	Independent Assessment Weighting within module (%) of Independent	Multi-part Assessment Weighting within module of multi-part assessments[9] (100%)	Multi-part Assessment Type of Assessment	Multi-part Assessment Weighting of individual elements of multi-part assessment[10]	Submission dates Assessment Submission and/or exam date[11]	Submission dates Assessment / Exam Retake date
16	R-MAA-MA	Military Avionics – STA, Communications and Navigation	Dr Alessio Balleri	32		10	N	20/01/20	20/01/20	24/01/20	40	ICW	100				23/03/20	AY20/21
17	N-AW-RA	Practical Reliability	Dr Simon Place	30	10	10	Y	14/10/19	14/10/19	18/10/19	40	ICW	100				16/12/19	AY20/21
18	N-AW-SAAS	Safety Assessment of Aircraft Systems	Dr Simon Place	35	12	10	Y	22/06/20 B19	22/06/20	26/06/20	50			100	ICW GPRES	70 30	26/06/20 24/08/20	AY20/21 AY20/21
19	R-MAA-THESIS	Research Project	Dr Alistair Saddington	20		80	N	01/09/19	01/09/19	01/09/20	50	THESIS OR	80 20				01/09/20	The following academic year
20	R-MAA-FAE	Aeronautical Engineering – Fundamentals Top Up	Prof Kevin Knowles	6		10	N	05/09/19	05/09/19	05/09/19	50	ICW	100				01/11/19	AY20-21
21	R-MAA-FWA	Fixed-Wing Aeromechanics	Prof Kevin Knowles	33		10	N	30/9/19	30/9/19	04/10/19	50 50	EX ICW	50 50				04/11/19 02/12/19	AY20/21 AY20/21

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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MAA Module Number	Module code	Title	Module Leader	Contact hours[6]	Total hours delivered by Visiting Lecturers[7]	Credits	Is the module shared? Y/N	Module Start Date (e.g. Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[8] - 40% or 50%	Independent Assessment – Type of Assessment	Weighting within module (%) of Independent	Weighting within module of multi-part assessments [9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
22	R-MAA-PS	Propulsion Systems	Dr Alistair Saddington	28		10	N	09/12/19	09/12/19	13/12/19	50 50	EX ICW	50 50				10/02/20 09/03/20	AY20/21 AY20/21
23	R-MAA-RWA	Rotary-Wing Aeromechanics	Prof Kevin Knowles	30		10	N	04/11/19	04/11/19	08/11/19	40 40	EX ICW	50 50				09/12/19 20/01/20	AY20/21 AY20/21
24	N-AW-AFDT	Aircraft Fatigue and Damage Tolerance	Dr Wenli Liu	30		10	Y	15/06/20	15/06/20	19/06/20	40	ICW	100				17/08/20	AY20/21
25	N-HFS-HFAM	Human Factors in Aviation Maintenance	Dr Cenqiz Turkoglu	30		10	Y	30/03/20	30/03/20	03/04/20	40 40	ICW GPRES	90 10				01/06/20 03/04/20	AY19/20 AY20/21

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis

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Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
N-SAI-ISMS	MAA04: Aviation Safety Management	Safety and Human Factors in Aviation	• Airworthiness • Air Transport Management • Safety and Accident Investigation (Air Transport) • Military Aerospace and Airworthiness
N-AW-ATEMO	MAA05: Air Transport Engineering – Maintenance Operations	Airworthiness	• Air Transport Management • Military Aerospace and Airworthiness
N-HFS-AAI	MAA06: Aircraft Accident Investigation and Response	Safety and Human Factors in Aviation	• Airworthiness • Forensic Engineering and Science • Military Aerospace and Airworthiness
N-AW-ICAS	MAA08: Design Durability and Integrity of Composite	Aircraft Engineering	• Military Aerospace and Airworthiness • Airworthiness • Advanced Materials
N-AW-FAEC	MAA09: Fundamentals of Aircraft Engine Control	Airworthiness	• Military Aerospace and Airworthiness • Thermal Power
N-AEN-ASC	MAA12: Introduction to Aircraft Structural Crashworthiness	Aircraft Engineering	• Airworthiness • Military Aerospace and Airworthiness • Safety and Accident Investigation
N-AW-MIGT	MAA14: Mechanical Integrity of Gas Turbines	Airworthiness	• Military Aerospace and Airworthiness
N-AW-RA	MAA17: Practical Reliability	Airworthiness	• Military Aerospace and Airworthiness
N-AW-SAAS	MAA18: Safety Assessment of Aircraft Systems	Airworthiness	• Military Aerospace and Airworthiness • Safety and Accident Investigation (Air Transport)
N-HFS-AFDT	MAA24: Aircraft Fatigue and Damage Tolerance	Airworthiness	• Military Aerospace and Airworthiness
N-HFS-HFAM	MAA25: Human Factors in Aircraft Maintenance	Safety and Human Factors in Aviation	• Military Aerospace and Airworthiness • Safety and Accident Investigation (Air Transport)

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R-MAA-GW	MAA11: Guided Weapons	Military Aerospace and Airworthiness	• Military Vehicle Technology and Gun Systems Design • Defence Security Programme
R-MAA-MAS	MAA15: Military Aircraft Systems	Military Aerospace and Airworthiness	• Airworthiness • Defence Security Programme
R-MAA-IHF	MAA13: Introduction to Human Factor	Military Aerospace and Airworthiness	• Defence Security Programme

7. **How are the ILOs assessed?**

The following assessment types are utilised:

The assessment of candidates is based upon a combination of examinations, coursework assignments, and, for masters' course students, a research-based dissertation and a viva voce examination. Details of the precise methods of assessment for each module are included in the Module Descriptors and are summarized in the Course Specification.

The PgCert uses a mixture of written examinations and coursework assignments, which are designed to assess the understanding and application of the core elements of aerospace engineering and airworthiness.

In the PgDip the emphasis is on developing the understanding over a broader range of topics and to a greater depth of analysis. Students are encouraged to adopt a more holistic approach to their understanding and application of the engineering and management theories, concepts, applications and practices associated with military aerospace and airworthiness. Assessment methods include written examinations, technical essays and reports, analytical work, computer-based exercises and group activities.

To complete the course to the award of an MSc qualification, students must complete a research-based project. The project is assessed through a combination of an examination of the student's written dissertation and a viva voce examination. Suggestions for projects may come from a variety of sources: an individual student's sponsor, a member of the Cranfield academic staff, or the wider aerospace community, for example.

The project may be conducted at the student's place of work under the day-to-day supervision of their employer and the overall supervision of one or more members of the Cranfield academic staff.

This approach has been adopted because it provides a balanced approach to the overall course assessment.

Assessment and ILO Mapping

A. Postgraduate Certificate

Award ILOs Module No.	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6

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Award ILOs / Module No.	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
00						
03	EX/ICW				ICW	
04	ICW		ICW			
18	ICW					ICW
21	EX/ICW	ICW		EX/ICW		
22	EX/ICW	ICW		EX/ICW		

B. Postgraduate Diploma

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs / Module No.	ILO 7	ILO 8	ILO 9
Dependent upon electives chosen	The ILOs achieved over and above those of the PgCert are based upon a more comprehensive, holistic, and systems-level understanding of the military aerospace, airworthiness and safety disciplines		

C. MSc

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs / Module No.	ILO 10	ILO 11	ILO 12	ILO 13	ILO 14	ILO 15
19	THESIS OR	THESIS OR	OR	THESIS	THESIS	THESIS OR

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)

8. <u>How will the University assure the quality of the provision?</u>

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality

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Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. **What opportunities are graduates likely to have on completing the course?**

The course will equip graduates with the knowledge and skills necessary for them to work effectively within MOD and the defence industry in areas of military aerospace technology, airworthiness and safety. This will open up opportunities to work in integrated project teams on matters of equipment procurement, support and maintenance and contribute effectively with customers and suppliers. In addition, the qualification obtained will support their professional development towards Incorporated or Chartered Engineer status. The students on the course are all employed in the defence sector and are generally taking the course as CPD.

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Military Aerospace and Airworthiness COURSE SPECIFICATION
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COURSE SPECIFICATION

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Cranfield University: Course Specifications

Course specifications outline the content and structure of a course leading to an award of Cranfield University. This version of the course specification has been approved by Education Committee and every effort has been made to ensure the accuracy of the information.

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COURSE TITLE: MSc in Military Electronic Systems Engineering

Date of first publication/latest revision: 02/09/2019

A. What is the course?

Course information

Course Title	Military Electronic Systems Engineering Including: Communications Electronic Warfare PgCert Sensors Electronic Warfare PgCert Military Electronic Systems Engineering Foundations Pg Cert
Course code	MSMESFTR, PDMESFTR, MSMESPTR, PDMESPTR – PCCEWPTR – PCSEWPTR – PCMESFTR – PCMESPTR - SPMESPTR
Academic Year	2019/2020
Valid entry routes	MSc, PgDip, PgCert
Additional Exit routes	PgDip, PgCert
Mode of delivery	Full-time and Part-time
Location(s)[1] of Study	Shrivenham
School(s)	Cranfield Defence and Security
Theme	Defence and Security
Centre	Electronic Warfare and Information Centre (EWIC)
Course Director	Dr David James
Awarding Body	Cranfield University
Is this an AP Contract course?[2]	Yes
Teaching Institution	Cranfield University
Admissions body	Cranfield University
Entry requirements	Standard University entry requirements
UK Qualifications Framework Level	QAA FHEQ level 7 (Masters)
Benchmark	N/A

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[1] If any part of this course is delivered at another site, please note which one(s) here
[2] AP Contract courses are provided by Cranfield University to the MoD as part of the Academic Provider contract

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Statement(s)	
Registration Period(s) available	Full time registration is for 1 year A part time student who registers for the PgCert will have a registration period of 3 years. For the PgDip this will be 4 years, and for the MSc 5 years.
Course Start Month(s)	September

Institutions delivering the course

This course is delivered by School of Defence and Security and largely by staff within the Electronic Warfare Centre, where the research interests include electro-magnetic systems and devices, radar systems and radar development, communications principles and networks, electro-optics including seekers, laser systems and image processing.

Cranfield University remains fully responsible for the quality of the delivery of the course.

Accreditation by Public, Statutory or Regulatory Bodies (PSRBs)

This course is not accredited by any external bodies.

B. **What are the aims of the course?**

Cranfield University offers this MSc course in order to provide education and training in selected electronic military systems. The main object of the course is to bring together the wide variety of disciplines involved and present them in an integrated manner, emphasising the system aspects.

The formal aims of the course are as follows:

- The aim of the Postgraduate Certificates is to provide students with a detailed knowledge and understanding of either military communications or sensors systems with particular regard to electronic warfare.
- The aim of the Postgraduate Diploma course is to provide students with a detailed knowledge and understanding of military electronic warfare systems consisting of both communications and sensor systems.
- In addition, the MSc course enables the student to carry out an in-depth investigation into an area of electronic warfare to further enhance their analytical capability.
- Successful graduates of this course should be fully equipped for roles in defence intelligence, systems development and acquisition, involving the specification and analysis of such systems.

This programme is intended for the following range of students:

Officers of the armed forces and for scientists and technical officers in government defence establishments and the defence or related industry. It is particularly suitable for those who, in their subsequent careers, will be involved with the specification, analysis, development, technical management or operation of military radar, electro optics, communications, sonar or information systems, where the emphasis is on an electronic warfare environment.

3. **What should students expect to achieve in completing the course?**

Award intended learning outcomes (ILOs) (skills and knowledge).

A. **Postgraduate Certificate in Communications Electronic Warfare**

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In completing this course, and achieving the associated award, a diligent student should be able to:

ILO 1.   Critically analyse the threat from Electronic Surveillance (ES) and Electronic Attack (EA) to typical military information systems

ILO 2.   Propose strategies involving Electronic Defence (ED) mechanisms to such threats

ILO 3.   Investigate and evaluate current and proposed ED methods and techniques to the threats previously defined

ILO 4.   Evaluate the performance of a number of military information systems given a system description and relate this performance to the original specification

ILO 5.   Assess quantitatively the performance of such systems in a hostile EW environment

B. Postgraduate Certificate in Sensors Electronic Warfare

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 6.   Critically analyse the threat from Electronic Surveillance (ES) and Electronic Attack (EA) to typical military sensor systems

ILO 7.   Propose strategies involving Electronic Defence (ED) mechanisms to such threats

ILO 8.   Investigate and evaluate current and proposed ED methods and techniques to the threats previously defined

ILO 9.   Evaluate the performance of a number of military sensor systems given a system description and relate this performance to the original specification

ILO 10. Assess quantitatively the performance of such systems in a hostile EW environment

C. Postgraduate Certificate in Military Electronic Systems Engineering Foundations

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 1.   Critically analyse the threat from Electronic Surveillance (ES) and Electronic Attack (EA) to typical military information systems

ILO 2.   Propose strategies involving Electronic Defence (ED) mechanisms to such threats

ILO 3.   Investigate and evaluate current and proposed ED methods and techniques to the threats previously defined

ILO 4.   Evaluate the performance of a number of military information systems given a system description and relate this performance to the original specification

ILO 5.   Assess quantitatively the performance of such systems in a hostile EW environment

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D. **Postgraduate Diploma in Military Electronic Systems Engineering**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 11. Critically analyse the threat from Electronic Surveillance (ES) and Electronic Attack (EA) to typical military sensor and information systems. Specifically, the systems include radar, sonar, electro-optic and infrared sensors, communications systems and networks, communications and non-communications EW systems

ILO 12. Propose strategies involving Electronic Defence (ED) mechanisms to such threats

ILO 13. Investigate and evaluate current and proposed ED methods and techniques to the threats previously defined

ILO 14. Evaluate the performance of a number of military sensor and information systems given a system description and relate this performance to the original specification

ILO 15. Assess quantitatively the performance of such systems in a hostile EW environment

ILO 16. Specify a system from those listed that will meet a detailed operational requirement analyse the performance of various ED mechanisms against defined levels of EA and ES

E. **MSc in Military Electronic Systems Engineering**

In addition to the intended learning outcomes outlined above, a diligent student would also be expected to:

ILO 17. Implement and document an extended research project in the field of EW requiring elements of information retrieval, modelling, experimentation and theoretical analysis

ILO 18. Implement and employ research methodology in an extended investigation based on recognised project management principles

4. How is the course taught?

The course is taught through lectures, tutorials and demonstrations where appropriate.

In addition to the teaching methods outlined above, students will be supported in their learning and personal development by:
- individual tutorials where necessary and practical
- group tutorials where necessary and practical

5. What do students need to achieve in order to graduate?

Notwithstanding University Regulations and the authorities and powers exercised by examiners, students will normally need to demonstrate achievement in the elements of the course, as laid out

in Section 6. Courses are structured through the accumulation of credit, where 1 credit represents 10 notional learning hours.

In brief, students will normally need to achieve the following in order to be awarded the qualifications:

A.   Postgraduate Certificate in Communications Electronic Warfare

The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
1 Electromagnetic Propagation and Devices 2 Signal Processing, Statistics and Analysis 3 Communications Principles 4 Communications Systems 11 Information Networks 14 Communications Electronic Warfare	10 10 10 10 10 10
ELECTIVE MODULES:	
N/A	
TOTAL:	**60**

B.   Postgraduate Certificate in Sensors Electronic Warfare

The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
1 Electromagnetic Propagation and Devices 2 Signal Processing, Statistics and Analysis 5 Radar Principles 6 Radar Electronic Warfare 7 Electro-optics and Infrared Systems I 8 Electro-optics and Infrared Systems 2	10 10 10 10 10 10
ELECTIVE MODULES:	
N/A	
TOTAL:	**60**

C.   Postgraduate Certificate in Military Electronic Systems Engineering Foundations

The accumulation of 60 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
1 Electromagnetic Propagation and Devices 2 Signal Processing, Statistics and Analysis 3 Communication Principles 4 Communication Systems 5 Radar Principles 7 Electro-optics and Infrared Systems I	10 10 10 10 10 10

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Description	Credits
ELECTIVE MODULES:	
N/A	
TOTAL:	**60**

D.   Postgraduate Diploma

The accumulation of 120 credits (or more) through the assessment of taught modules as detailed below:

Description	Credits
COMPULSORY MODULES:	
1 Electromagnetic Propagation and Devices 2 Signal Processing, Statistics and Analysis 3 Communications Principles 4 Communications Systems 5 Radar Principles 7 Electro-optics and Infrared Systems 1	10 10 10 10 10 10
ELECTIVE MODULES:	
Modules to the value of 60 credits selected from: 6 Radar Electronic Warfare 8 Electro-optics and Infrared Systems 2 9 Advanced Sensor Data Processing 10 Advanced Radar 11 Information Networks 13 Foundations of Modelling and Simulation 14 Communications Electronic Warfare	 10 10 10 10 10 10 10
TOTAL:	**120**

E.   MSc

In addition to the requirement for the Postgraduate Diploma outlined above, students must successfully complete the thesis. An MSc will be awarded on successful completion of 200 credits as outlined below:

Description	Credits
COMPULSORY MODULES:	
1 Electromagnetic Propagation and Devices 2 Signal Processing, Statistics and Analysis 3 Communications Principles 4 Communications Systems 5 Radar Principles 7 Electro-optics and Infrared Systems 1 12. Project	10 10 10 10 10 10 80
ELECTIVE MODULES:	
Modules to the value of 60 credits selected from:	

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6 Radar Electronic Warfare	10
8 Electro-optics and Infrared Systems 2	10
9 Advanced Sensor Data Processing	10
10 Advanced Radar	10
11 Information Networks	10
13 Foundations of Modelling and Simulation	10
14 Communications Electronic Warfare	10
TOTAL:	**200**

If a student does not meet the required standards for the award, the examiners for the programme may decide to offer a lower award associated with the programme, providing that a lower exit award exists and the student meets the requirements of that lower award.

Pass Criteria

The University operates standard pass criteria which can be found in the Senate Handbook on Assessment Rules.

In order to achieve your award, you are required to achieve:

- An overall average mark of ≥50%;
- An average mark of ≥50% across the taught assessment;
- All assessments need to be completed and the minimum mark attained: no more than one failure to complete an assessment (as defined in Section 2.3) will be permitted throughout the course of your studies (Please note that the board of examiners does not have discretion to overrule this limit, but can refer a case to Senate's Education Committee);[3] [4]
- **For Taught Assessments,** the minimum mark for each individual taught assessment on the first attempt for the significant majority of the taught assessments, noting that:
  - if you fail to attain the minimum mark for **up to 30 learning credits**, you will be permitted to re-take all of those assessments (except for circumstances where a resit award capped at 50% would be insufficient to achieve an overall average mark of ≥50% across the taught assessments);
  - if, having failed to attain the minimum mark for 30 learning credits, you fail to obtain the minimum mark for **any additional learning credits** over the course of your studies you will be disqualified from the right to re-take the assessments: this will normally result in intended award failure. (Please note the board of examiners may at its discretion overrule this limit, but this is not an automatic right);
  - it is not permissible for you to fail an elective module and then proceed to take a different elective module in its place.
- **For Substantial pieces of assessment** (corresponding to ≥40 credits, which are not part of the taught assessment average), the pass mark of ≥50% (where they exist);
- **For the thesis,** a mark of ≥50% in order to receive a pass (where it exists).

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[3] For students who were registered before 1 August 2015, the requirement to obtain a minimum mark for a taught assessment will not apply for taught assessment taken before 31 August 2015 (unless the assessment was designated as a "key assessment" under the previous Assessment Rules).

[4] Providing the minimum mark is met, a mark of 40-49% will be automatically compensated if a student's overall average taught assessment mark (including the failed assessment) is greater than 50%. Students are advised, however, that they retain the right to re-take an assessment with a mark of <40% (but should note that a re-take attempt will be capped at 50%), as long as they haven't failed more than 30 credits. At the discretion of the Board of Examiners or by Board of Examiners Chair's Actions a student may be permitted a re-take attempt of modules in the range of 40-49% only if the average mark of their other taught modules would not allow them to qualify for their award (<50%).

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6. How is the course structured?

Students register for the course in September and are expected to complete the full time MSc within 48 weeks and the PgDip within 40 weeks.

This course is also offered on a part-time basis. Students would instead be permitted a maximum of 5 years to complete the MSc, 4 years to complete the Diploma and 3 years to complete the Certificates.

Each module is taught over one week, but includes a week preparation time and will be followed by a week of consolidation / coursework. The weeks preceding and following the taught week are normally free of structured teaching.

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Course modules

The following modules outline all parts of the programme leading to an **MSc**. Other awards associated with the course include some or all of these modules.

Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Calendar			Minimum Mark[7] - 40% or 50%	Assessment						
								Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date		Independent Assessment		Multi-part Assessment			Submission dates	
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9](100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
1	R-MES-EPD	Electromagnetic Propagation and Devices	Dr I L Morrow	32	0	10	N	02/09/19	02/09/19	13/09/19	50	ICW	100				11/10/19 (FT & PT)	TBC
2	R-MES-SPSA	Signal Processing, Statistics and Analysis	Dr P Barker	30	0	10	Y	30/09/19	30/09/19	04/10/19	50			100	ICW ICW	50 50	01/11/19 (FT & PT) 01/11/19 (FT & PT)	TBC

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[5] Please note that all contact hours are indicative and represent scheduled teaching, which is subject to minor changes and variation at short notice

[6] Visiting Lecturer = a member of staff (with RTS) but not on a permanent contract (does not include those acting as occasional guest speakers)

[7] A mark of 50% is required to pass the assessment however, where the stated minimum mark is 40%, a mark of 40-49% may be compensated by good performance in other modules providing that the overall average is ≥50%.

[8] For **independent assessments** please record type and weighting of each separate piece of assessment individually.

[9] For **multi-part assessments** please record the overall weighting of module which should be 100%.

[10] Failure to submit an element of a **multi-part assessment** will **not** require remedial action if the absence of the marks for the assignment still results in a pass for the assessment (whether 40 or 50% as appropriate). If, however, the absence of marks fails to meet the minimum mark for the module then **all** elements of the assessment must be re-taken.

[11] Please ensure you include submission dates for both FT and PT students and that you give details of the submission date for each individual element of a multi-part assessment.

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis SUP – Supervisor's assessment

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| Module Number | Module code | Title | Module Leader | Contact hours[5] | Total hours delivered by Visiting Lecturers[6] | Credits | Is the module shared? Y/N | Calendar | | | Minimum Mark[7] - 40% or 50% | Assessment | | | | | | |
| | | | | | | | | Module Start Date (eg Pre-course task) | Residential' Start Date | Residential' End Date | | Independent Assessment | | Multi-part Assessment | | | Submission dates | |
												Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11]	Assessment / Exam Retake date
3	R-MES-CP	Communication Principles	Dr P Barker	30	0	10	N	04/11/19	04/11/19	08/11/19	50			100	ICW	60	06/12/19 (FT & PT)	TBC
															ICW	40	06/12/19 (FT & PT)	TBC
4	R-MES-CS	Communication Systems	Dr P Barker	30	0	10	N	02/12/19	02/12/19	06/12/19	50	ICW	100				10/01/20 (FT & PT)	TBC
5	R-MES-RP	Radar Principles	Dr A Balleri	30	0	10	Y	14/10/19	14/10/19	18/10/19	50	ICW	100				15/11/19 (FT & PT)	TBC
13	R-AMOR-FMS Occ B	Foundations of Modelling and Simulation	Mr J Hoggard	30	0	10	Y	20/01/20	20/01/20	24/01/20	40	ICW	100				03/02/20 (FT & PT)	TBC
6	R-MES-REW	Radar Electronic Warfare	Mr I Vagias	30	0	10	Y	03/02/20	03/02/20	07/02/20	50	ICW	100				06/03/20 (FT & PT)	TBC
7	R-MES-EOIS1	Electro-optics and Infrared Systems I	Dr D B James	32	0	10	Y	18/11/19	18/11/19	22/11/19	50	EX	100				18/12/19 (FT & PT)	18/03/19
8	R-MES-EOIS2	Electro-optics and Infrared Systems II	Dr D B James	32	0	10	Y	06/01/20	06/01/20	10/01/20	50	ICW	100				07/02/20 (FT & PT)	TBC
9	R-MES-ASDP	Advanced Sensor Data Processing	Dr V S Sastry	30	0	10	N	09/03/20	09/03/20	13/03/20	40			100	ICW	60	17/04/20 (FT & PT)	TBC
															ICW	40	17/04/20	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis SUP – Supervisor's assessment

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Module Number	Module code	Title	Module Leader	Contact hours[5]	Total hours delivered by Visiting Lecturers[6]	Credits	Is the module shared? Y/N	Module Start Date (eg Pre-course task)	'Residential' Start Date	'Residential' End Date	Minimum Mark[7] - 40% or 50%	Type of Assessment	Weighting within module8 (%) of Independent assessments	Weighting within module of multi-part assessments[9] (100%)	Type of Assessment	Weighting of individual elements of multi-part assessment[10]	Assessment Submission and/or exam date[11] (FT & PT)	Assessment / Exam Retake date
14	R-MES-CEW	Communications Electronic Warfare	Dr P Barker	30	0	10	N	10/02/20	10/02/20	14/02/20	50	ICW	100				13/03/20 (FT & PT)	TBC
10	R-MES-AR	Advanced Radar	Dr D Andre	30	0	10	N	24/02/20	24/02/20	28/02/20	40			100	ICW ICW	60 40	27/03/20 (FT & PT) 27/03/20 (FT & PT)	TBC TBC
11	R-MES-IN	Information Networks	Dr P Nobles	30	0	10	N	02/03/20	02/03/20	06/03/20	40	ICW	100				10/04/20 (FT & PT)	TBC
12	R-MES-THESIS	Project	Dr D B James	50	0	80	N	04/05/20 (FT) 02/09/19 (PT)	04/05/20 (FT) 02/09/19 (PT)	28/07/20 (FT) 28/07/20 (PT)	50			100	THESIS SUP OR	50 25 25	14/07/20 28/07/20 28/07/20 (FT & PT)	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis SUP – Supervisor's assessment

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#	MODULE	PgCert MESE F	PgCert CEW	PgCert SEW	PgDip MESE	MSc MESE		Marketed as short course	Joint with another MSc
1	EPD	C	C	C	C	C		NO	
2	SPSA	C	C	C	C	C		YES	GWS
3	CP	C	C		C	C		YES	
4	CS	C	C		C	C		YES	
5	RP	C		C	C	C		YES	GWS
6	REW			C	E	E		YES	GWS
7	EOIS1	C		C	C	C		YES	GWS
8	EOIS2			C	E	E		YES	GWS
9	ASDP				E	E		YES	
10	AR				E	E		YES	
11	IN		C		E	E		YES	
12	DIS					C		NO	
13	FMS				E	E		SHARED	AMOR (DSM)
14	CEW		C		E	E		YES	

Assessment Types: AO – Attendance only; ICW – Individual Coursework; GCW – Group Coursework; IPRES – Individual Presentation; GPRES – Group Presentation; IPRAC – Individual Practical; GPRAC – Group Practical; IPROJ – Individual Project (>20 credits); GPROJ – Group Project (>20 credits); EX – Examination ; RP – Reflective Portfolio; OR- Viva Voce examination; THESIS - thesis SUP – Supervisor's assessment

Please list all modules that are used by another existing course.

Module code	Module title	Course that owns the module	Other course(s)/ programme(s) that use the module
R-MES-EOIS1	Electro-optics & Infrared Systems I	Military Electronic Systems Engineering	Guided Weapon Systems
R-MES-EOIS2	Electro-optics & Infrared Systems II	Military Electronic Systems Engineering	Guided Weapon Systems
R-MES-RP	Radar Principles	Military Electronic Systems Engineering	Guided Weapon Systems
R-MES-REW	Radar Electronic Warfare	Military Electronic Systems Engineering	Guided Weapon Systems
R-MES-SPSA	Signal Processing, Statistics and Analysis	Military Electronic Systems Engineering	Guided Weapon Systems
R-AMOR-FMS	Foundations of Modelling and Simulation	Applied Mathematics and Operational Research	Military Electronic Systems Engineering

Modules offered to Short Course delegates.

Module code	Module title
R-MES-SPSA	Signal Processing, Statistics and Analysis
R-MES-RP	Radar Principles
R-MES-CP	Communication Principles
R-MES-EOIS1	Electro-Optics & Infrared Systems Part 1
R-MES-CS	Communication Systems
R-MES-EOIS2	Electro-Optics & Infrared Systems Part 2
R-MES-REW	Radar Electronic Warfare
R-MES-CEW	Communications Electronic Warfare
R-MES-AR	Advanced Radar
R-MES-IN	Information Networks
R-MES-ASDP	Advanced Sensor Data Processing

7. How are the ILOs assessed?

The course uses a range of assessment types. Students can expect to have written examinations, pieces of assessment by submitted work and project assessment by written work, presentation and viva.

This approach has been adopted in order to best suit the nature of the individual modules and their content.

Assessment and ILO Mapping

A. Postgraduate Certificate in Communications Electronic Warfare

Award ILOs / Module No.	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5
1	ICW				
2		ICW	ICW	ICW	ICW
3	ICW	ICW		ICW	
4	ICW	ICW	ICW	ICW	
11	ICW		ICW	ICW	ICW
14		ICW	ICW	ICW	ICW

B. Postgraduate Certificate in Sensors Electronic Warfare

Award ILOs / Module No.	ILO 6	ILO 7	ILO 8	ILO 9	ILO 10
1	ICW				
2		ICW	ICW	ICW	ICW
5		ICW	ICW	ICW	ICW
6		ICW	ICW	ICW	ICW
7	EX	EX	EX	EX	EX
8	ICW	ICW	ICW	ICW	ICW

C. Postgraduate Certificate in Military Electronic Systems Engineering Foundations

Award ILOs / Module No.	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5
1	ICW				
2		ICW	ICW	ICW	ICW
3	ICW	ICW		ICW	
4	ICW	ICW	ICW	ICW	
5		ICW	ICW	ICW	ICW
7	EX	EX	EX	EX	EX

D. Postgraduate Diploma in Military Electronic Systems Engineering

Award ILOs / Module No.	ILO 11	ILO12	ILO 13	ILO 14	ILO 15	ILO16
9	ICW	ICW	ICW	ICW	ICW	ICW
10	ICW	ICW	ICW	ICW	ICW	ICW
13	ICW	ICW	ICW	ICW	ICW	ICW

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E. MSc in Military Electronic Systems Engineering

In addition to those outlined above, the Award intended learning outcomes are assessed by the following module assessments:

Award ILOs / Module No.	ILO 17	ILO 18
9	ICW	ICW
12	THESIS SUP OR	THESIS SUP OR

CROSS-MODULAR ASSESSMENT (including any assessment which rests outside an individual module)

Title	Modules Covered	Assessment	
		Type	Weight (%)

8. How will the University assure the quality of the provision?

New course proposals are reviewed by a Course Validation Panel, comprising at least the following membership: normally one subject matter expert external to the School or University, at least 3 academic staff not associated with the proposal. The Panel may include 1 member of professional staff. Panels are supported by an appropriately trained Secretary who acts as advisor to the Panel. Proposals are reviewed in line with the Quality Assurance Agency for Higher Education (QAA) Quality Code, in particular Chapter B1 (Programme Design and Approval) and in the case of partnership arrangements in accordance with Chapter B10 (Managing Higher Education with Others). New courses are ultimately approved by the University's Education Committee, on behalf of Senate.

Course changes are approved by the School's Director of Education on behalf of Education Committee and Senate. Significant changes to a course will be referred to a Course Review Panel at the discretion of the Director of Education.

The University has in place regular monitoring procedures for quality assurance including an Annual Reflective Review for each course and an in depth 6 year review of each School's (total) educational provision known as the Senate Review.

Each course has at least one External Examiner who monitors all aspects of the assessment process. This is in line with the guidance provided by the QAA particularly in Chapter B7 (External Examining) which emphasises that external examining is one of the principal means for maintaining UK threshold academic standards within autonomous higher education institutions.

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Each course has a formally constituted Examination Board, which includes the External Examiner, and which is responsible for ensuring that awards are made within the Regulations of the University and that students are made awards on the basis of meeting the specified Intended Learning Outcomes of a course at the appropriate standard.

Each course has a formally constituted Course Committee which meets at least twice a year to discuss, inter alia, programme design and planning, the student experience (including feedback) and student progress.

Each course has an Industry Advisory Panel (or similar) which meets at least once a year to engage with external stakeholders on curriculum design and currency of course content.

Student feedback both qualitative and quantitative is collected for each module studied. In addition students are invited to participate in the University's annual New Student Survey and Student Satisfaction Survey along with the annual national Postgraduate Taught Student Experience Survey. The results of all feedback are considered by the Course Committee and additionally, in respect of the University and national surveys, issues of quality are considered by and acted on where appropriate by the Education Committee, Senate, School and University Executives.

New Partnership arrangements are considered in two stages:

1. The University Executive is responsible for ensuring appropriate due diligence has been undertaken in respect of the University's legal, financial, reputational and ethical responsibilities.
2. A Partnership Delivery Approval Panel then considers whether the proposal meets the expectations and indicators of sound practice of the QAA Quality Code Chapter B10: Managing Higher Education Provision with Others, with regards to the management and operation of the partnership and that the academic standards and the quality of the student experience are assured in line with the remaining chapters of the QAA Quality Code. The delivery of new partnership provision is ultimately approved by the University's Education Committee, on behalf of Senate.

Year one partnership reviews are undertaken one year after the initiation of a new partnership involving academic (award bearing) provision. The aim is to provide a supportive framework to assist the Sponsoring School and its new Partner Institution to work collaboratively to ensure that: the learning and teaching provision and associated student experiences are of a high standard; and that those responsible for delivering the provision are undertaking their respective roles and responsibilities in an appropriate way.

As part of the regular monitoring procedures for established collaborative partnerships, in addition to the Annual Reflective Review there is an Annual Operating Statement and a 5 year review known as a Focused Review which looks at each partnership in depth. Occasional site inspection visits are also made.

9. **What opportunities are graduates likely to have on completing the course?**

Successful graduates of this course should be fully equipped for roles in defence intelligence,

systems development and acquisition, involving the specification and analysis of such systems, working individually or as part of a team either in the military or in the defence industry.

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