

Masters, Postgraduate Diploma and Postgraduate Certificates
In

The School of Computer Science
The University of Manchester

Programme Handbook
2006/2007

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1 Introduction

This is the Handbook for the Taught Postgraduate Courses offered by the School of Computer Science in the University of Manchester. It covers the MSc programmes and regulations for Postgraduate Diplomas and Postgraduate Certificates.

You are strongly advised to make yourself familiar with the contents of this Handbook as it contains the regulations for your programme, assessment rules, descriptions of the facilities of the School and University, as well as guidance on undertaking your studies here and more specific guidance on aspects of your Postgraduate programme.

In addition, each programme has its own separate structure and regulations which are described in the relevant section of this Handbook.

2 General Information

2.1 Contact Details

Student Support Office:

Postgraduate

Room 2.3, Kilburn Building

School of Computer Science, The University of Manchester, Oxford Road, Manchester, M13 9PL, United Kingdom.

Tel: (+44) 161 275 6181

Fax: (+44) 161 275 6204

Email: pgoffice@cs.manchester.ac.uk

To visit the website of the School of Computer Science go to <http://www.cs.manchester.ac.uk/>.

The School of Computer Science is located in the Kilburn Building.

2.2 Programme Staff

MSc in Advanced Computer Science

Programme Director:

Dr David Rydeheard, Room 2.111, Tel: 275 6164, Email: der@cs.manchester.ac.uk

MSc in Advanced Computer Science with ICT Management

Programme Director:

Dr Renate Schmidt, Room 2.42, Tel: 275 6163, Email: schmidt@cs.manchester.ac.uk

Assistant Programme Director:

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MSc in Computational Methods and Imaging in Medicine Study

Programme Directors:

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MSc in BioHealth Informatics

Programme Directors:

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MSc in Computational Science and Engineering:

Programme Director:

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MSc in Low Power Systems Integration

Programme Director:

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Master of Enterprise (Ment) in Computer Science

Programme Director:

Dr Doug Edwards, Room IT210, Tel: 275 6191, Email:
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Part-Time Diplomas, Masters and Course Units

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2.3 School and Postgraduate Staff

Head of School:

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Head of Graduate School:

Prof. Roger Hubbard, Room 2.96, Tel: 275 6158, Email:
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Student Support Office:

Postgraduate

General email address: pgoffice@cs.manchester.ac.uk

Gill Lester (Student Support Office Manager), Room 2.4, Tel: 275 6210,
Email: Gillian.S.Lester@manchester.ac.uk

Janet Boyd (Student Support Administrator), Room 2.3, Tel: 275 6283, Email:
jboyd@cs.manchester.ac.uk

Susannah Hildreth (Postgraduate Secretary), Room 2.3, Tel: 275 7520,
Email: Susannah.Hildreth@manchester.ac.uk

2.4 Position of notice boards, pigeon holes and social space

The Postgraduate notice board is positioned outside the Student Support Office 2.1, Kilburn Building. These are used for displaying pass lists, general information and advice. Pigeon holes for mail are positioned outside room 2.15. You are entitled to use the Senior Common Room and make use of the cafeteria there. There is also a food area on the lower first floor.

3 Key dates in the academic year and timetable for the programmes for 2006/07

Period/Event	Dates
Induction period	18 September - 29 September
Deadline for Course Unit Registration	27 September
Semester 1 Period 1 course units	2 October – 4 November
Deadline for Semester 1 Period 2 course unit changes	30 October
Coursework Completion Week 1	6 November – 10 November
Semester 1 Period 2 course units	13 November – 15 December
Deadline for Semester 2 Period 3 course unit changes	11 December
Coursework Completion Week 2	7 January – 12 January
Semester 1 Periods 1 & 2 examinations	15 January – 26 January
Semester 2 Period 3 course units	29 January – 2 March
Deadline for submission of project	February (exact date to be confirmed)

preferences	
Coursework Completion Week 3	5 March – 9 March
Semester 2 Period 3 examinations	12 March – 16 March
COMP60992 Professional Issues and Research Skills	19 March – 23 March
Research project	26 March – 2 nd week of September
Project Seminars	June (exact dates to be confirmed)
Final date for notice of submission	End of July (exact date to be confirmed)
Dissertation submission deadline	Early September (exact date to be confirmed)
Graduation week	Mid-December

3.1 Timetables

For details of all timetables consult the webpage:

http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/infocurrentstudents.php

4 Types and Lengths of Programmes

The following programmes are available:

Award	Duration	Mode of Study
MSc	1 year	Full-time
MSc	2-4 years	Part-time
MSc	3-4 years	Modular
PG Diploma	1 year	Full-time (exit award only)
PG Diploma	2-3 years	Part-time
PG Diploma	2-3 years	Modular
PG Certificate	1 year	Full-time (exit award only)

PG Certificate	2 years	Part-time (exit award only)
PG Certificate	2 years	Modular (exit award only)

4.1 Part-Time Schemes

Part-time registrations are accepted over two years and three years. It is also possible to complete these programmes by credit accumulation over not more than 4 years (Modular scheme). The Modular scheme is intended for sponsored employees.

Upgrading from a Certificate or Diploma is permitted as long as the final award is achieved within a four-year period from first registering for the lower qualification.

Part-time schemes are managed by the Director: Ms Alex Walker. Information about part-time options can be found at the **PEVE website at:**

<http://www.cs.man.ac.uk/peve/>

5 Overview of the Programme

The MSc has three distinct phases: Induction, taught course units, and the project. The first two take up roughly the first six months of the course while the remaining time is dedicated to the project.

The **induction period** runs in the first two weeks and introduces you to the programme, the School, the Faculty, the University. We also provide introductory lectures for the taught course units. You also have a chance to meet your programme directors and fellow postgraduate students in the School. There is a reception at the School and a library tour. Other activities are arranged by partner Schools, the Careers Service, the Student Union etc.

After the introductory fortnight the **taught course units** begin. Typically you will take four of these before Christmas, and these will be examined in mid-January. You will then take a further 2 course units in semester 2 which are examined in the Spring. The choice of these course units is subject to the degree requirements described under [Taught Course Units \(Section 6.2\)](#).

Also in the Spring there is a week of courses covering research and professional skills to provide preparation for the **project phase** of the programme. The project is chosen early into the New Year. It is a substantial piece of work, resulting in a dissertation, or equivalent, of approximately 60-100 pages. You can select one of many topics proposed by members of staff or suggest your own. The project allows you to develop a significant piece of work independently, under supervision by a member of the academic staff. You determine its scope and standards. It will often involve a considerable amount of coding which gives you the opportunity to practice and extend your programming skills. Work on the project can begin any time after it has been assigned. Its core phase begins after the second semester's taught courses. It is to be completed and a dissertation/reports submitted by the second week of September. In order to be allowed to start the project, you must pass the assessment for the taught course units. Most course units are assessed by both coursework and examination.

Provisional results for the first semester are published in February. Formal examiners' meetings take place in April/May and an official pass list is published. (Details of the examination rules and the way we handle taught course unit failures can be found later in this handbook.)

Dissertations are assessed by internal examiners, and moderated by an external examiner. A second formal examiners' meeting is convened in November to consider the results. Recommendations for award or otherwise are made to the MSc panel of the Faculty, who make the final decision in time for December graduation.

For the important dates of the academic year see the Calendar at the beginning of this document (Section 3).

5.1 Notes for Part-Time Students

In August/September of each academic year you will be asked to select the course units you wish to study in the forthcoming academic year. Guidance on this is provided by the Programme Director of Part-Time studies.

6 Course Units

6.1 Induction period

Each programme has an induction period at the beginning of the academic year. During this period there is a wide range of activities arranged for you to help you with the programme, your studies, your life at University, here in Manchester and in the UK.

In the School of Computer Science, at the beginning of the academic year there is an introduction to the School, to university facilities, to staff and your fellow students, and also a series of introductory talks, one for each course unit. There are a large number of course units on offer arranged into broad areas of interest. Students are encouraged to attend these introductions to the course units in order to choose the 90 credits' worth of course units that they will take, and also to learn about the topics and concerns of course units that they are choosing not to take. This forms an introduction to the subject of Advanced Computer Science and is one of the great strengths of the MSc programmes which is appreciated and enjoyed by students.

In addition to School activities, the University and the Students' Union have a range of introductory activities, including the Societies Fair, where you may choose from an enormous list of activities, from Fencing to Mountaineering, from Dance to Films, Chess to Bell ringing, from Political and Religious Groups, to Charities and Hobbies.

Students from outside the UK may wish to take part in the activities of the International Society, including their Welcome Service. See the **website** at <http://www.internationalsociety.org.uk>. Other help for overseas students is available from the Computer Science School's own **website**: http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/.

6.2 Course Units

All course units provided by the School of Computer Science (and some provided by other Schools) are taught in the following format: The teaching period is divided into

three periods of 5 weeks each, two periods in the first semester, one in the second. At the end of each period is a coursework completion week.

Each course unit is allocated a day a week in a particular period (details of the timetable are available on the Postgraduate website of the School – see 3.1 in this Handbook). These 5 days are the taught days of the course unit and typically will consist of a mix of activities including lectures, supervised practical work, seminars, discussion sessions etc. In addition, the course unit has coursework to be undertaken outside these taught days amounting to one-and-a-half days per week in the period of the course unit and half on the coursework completion week at the end of the period (i.e. 10 days work in all). Some of this coursework is likely to be assessed work. Deadlines for assessed work will be set in individual course units, but most coursework in a period will be expected to be completed by the end of the relevant coursework completion week.

Course units are worth 15 credits each and you need to take 90 credits of taught units for an MSc (i.e. 6 course units). For those on MSc programmes taking only Computer Science Course units, you are very strongly advised to take exactly two course units in each period. In this way, your work will be properly paced over the taught period and you will be able to manage the workload. Any other arrangement of your course units will require special dispensation from your Programme Director.

In order to help you choose your course units, there is an introduction to each course unit in the Induction Period at the beginning of the academic year. The course units available are listed in the Computer Science Masters Syllabus for 2006/07 (available at http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/infocurrentstudents.php).

Whilst we try to ensure all course units will run, some may be withdrawn or changed for a variety of reasons. The University reserves the right to change the availability of course units.

Course unit selection. Registration of the course units should be completed by the middle of the second week. The deadlines for changes to course unit selections are: end of October for Semester 1 Period 2 and early December for Semester 1 Period 3. It is not possible to change course unit selection for Semester 1 Period 1 after the first week. There is a 'course unit changes' form which must be completed by any student wanting to change their original course unit choices (if changes occur within the deadline). This should be collected from and returned to the Student Support office. The student will need an agreement signature from the relevant Programme Director. Permission will be granted only in exceptional circumstances.

6.3 Research Skills and Professional Issues (COMP60992)

This course unit covers material that is presented at various points through the academic year. Part of the course unit provides training in research skills and an orientation towards the practice of research. The other part provides training in a range of professional skills and material on expectations and conduct in an industrial and business environment.

It is presented by a range of staff both internal and external, including the Careers Service, the Post-Experience Vocational Education Unit, Programme Directors, Research Staff and Groups, Industrial Consultants, and a representative from The British Computer Society (the professional body for IT professionals in the UK).

This course unit has two aims:

- (1) Most of the course unit takes place before students begin work on the research project. It offers a grounding in various aspects of research and project management, from the most theoretical (philosophy of science), through the subject-specific (how to choose, refine and develop a research topic), to practical advice on undertaking research, including how to contribute to research, manage research projects, cope with the day-to-day research activity, etc. It covers material and advice on technical writing for the dissertation/reports. Research seminars given by the students form part of the course unit.
- (2) The course unit covers various aspects of Professional Skills as required in the IT industry and in Research and Development. The skills necessary in the IT industry are taught through the Careers Service and external consultants from the IT industry. The skills include team-work skills, industrial problem-solving, leadership skills, communication skills and presentation skills. Consideration of ethics and conduct are also presented.

There is no formal assessment for this course unit, but active participation is required, and students will need some of the material to succeed in the Research Project. The research seminar is assessed to provide feedback on performance both in the seminar and in the project to date.

Activities on this course unit vary from year to year. There is a webpage detailing activities accessible from the Postgraduate Website http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/

7 MSc Programmes

Each MSc programme has its own structure and regulations which are described below:

7.1 MSc in Advanced Computer Science

The MSc in Advanced Computer Science draws upon the high international profile of the research and teaching activities of the School, and its industrial links, to provide a high quality, intensive and leading-edge MSc programme. The programme provides both a depth of treatment and a very broad syllabus of topics in Computer Science. The initial section of the programme consists of the taught course units. Students then undertake a half-year research project usually based upon one of the areas of research in the school or an industrial assignment.

This MSc offers high-quality taught course units in terms of their content, depth and quality of delivery. It provides a rich learning environment with good contact with expert staff, in both the taught course units and the research projects.

The structure of the programme is intended to be attractive to both full-time one-year students and to part-time students who take the programme over a period of years, accumulating credits to achieve a Certificate, a Diploma or an MSc. The aim is to have a broad participation both on the teaching side and amongst the students, in

particular attracting industrial participants and those requiring a more flexible learning regime.

7.2 Specialisations in Advanced Computer Science

We ensure that the research strengths of the school are reflected in the balance of the syllabus. In five areas - High Performance Computing, Artificial Intelligence, Formal Methods, Software Methods and Advanced Applications – we offer optional specialisations: focussed selections of course units and a research project which you may follow if you wish for a more specialised qualification.

You may either choose to take a broad-based MSc with taught course units and research project drawn from the wide range on offer, or you may choose to specialise. Each specialisation has a number of core course units. If you wish to take one of these specialisations and thus receive a Masters in this specialisation then:

- (1)** at least 45 of the 90 taught credits required for an MSc must be taken from the core course units (Note: it is not necessary to take all of the core course units for the specialisation, as long as at least half of the taught credits are drawn from the core course units), and
- (2)** the research project must be in the required area as approved by the Programme Director.

Other choices of course units are possible by arrangement with the Programme Director, as long as it can be clearly demonstrated that the MSc specialises in the required topic.

Core Units for Specialisations:

1. High Performance Computing

Core: COMP60022, COMP60032, COMP60042, COMP60051, COMP60062, COMP60081, COMP60092, COMP60242.

2. Formal Methods

Core: COMP60121, COMP60162, COMP60172, COMP60461.

3. Software Engineering

Core: COMP60022, COMP60162, COMP60172, COMP60321, COMP60342, COMP60362, COMP60391, BMAN61102.

4. Advanced Applications

Core: COMP60022, COMP60312, COMP60321, COMP60342, COMP60362, COMP60391, COMP60440, COMP60461, BMAN61102.

5. Artificial Intelligence

Core: COMP60121, COMP60162, COMP60431, COMP60440, COMP60461, COMP60491, BMAN61102.

7.2.1 Advanced Computer Science Programme Specification

Please visit http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php for the programme specification.

7.3 MSc in Advanced Computer Science with ICT Management

This MSc programme has been developed with input from our industrial partners and the Manchester Business School.

The strategic importance of information technology in the growth and development of user companies has become apparent with the huge expansion in the use of the internet and e-commerce activities. This MSc is aimed at the growing demand for specialists who can use their understanding and knowledge of new and future technologies to manage the strategic development of information technology within user industries.

The MSc is managed within the existing framework of the MSc in Advanced Computer Science. Students select course units from the existing advanced portfolio together with specialist management course units.

7.3.1 Core Course Units for ACS with ICT Management

Students select six course units (90 credits) and normally take four in the first semester (October to December) and two in the second (February to April).

Students must select a minimum of four course units from the two categories of core units as described below. For a description of all course units please refer to the Syllabus.

Category 1 (minimum of 2 from this group)

- BMAN61051: IT Trends (15 credits)
- BMAN60112: IT Systems and Strategy (15 credits)
- BMAN61102: Decision Analysis and Decision Support Systems (15 credits)

Category 2 (minimum of 1 from this group)

- COMP60342: Electronic Commerce Technologies (15 credits)
- COMP60362: Advanced Database Technologies (15 credits)
- COMP60391: Computer Security (15 credits)
- COMP60171: Interactive System Design Methods (15 credits)
- MSEC40001: Entrepreneurial Commercialisation of Knowledge (15 credits)

The remaining 30 credits can be selected from any of the course units in the advanced Computer Science Syllabus (including those in category 2 above). However, a student may replace one 15 credit non-core course unit with 15 credits from:

Business: Students who feel the need for a deeper understanding of a particular area of business can choose an appropriate course unit from other relevant schools' master-level options (e.g. the Manchester Science and Enterprise Centre).

Language: An appropriate level course in a modern foreign language may be selected. In these cases the approval of the Programme Director must be obtained.

7.3.2 Advanced Computer Science with ICT Management Programme Specification

Please visit http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php for the programme specification.

7.4 MSc in Computational Science and Engineering

The MSc in Computational Science and Engineering is aimed at using advanced computational methods to investigate and simulate the behaviour of physical phenomena. One of the great challenges in modern computing is to harness the massive computational power available in order to investigate the behaviour of massively complex systems such as the earth's atmosphere or, indeed, the human body.

The MSc admits high quality graduates in the Physical Sciences and Engineering who already have an understanding of the mathematical modeling of physical phenomena. The object of this programme is to develop an appreciation of the range of issues - algorithmic, software, advanced computer architectures, and high performance implementations - that arise in the numerical computation of physical phenomena.

The MSc is led by the Centre for Novel Computing in the School of Computer Science and is based on the framework of the MSc in Advanced Computer Science. Additional course units in Computational Science and Engineering are added to the portfolio of advanced units. Specialist, Computational Science-focused, research projects are provided, some of these may be with industrial partners.

7.4.1 Core Course Units for Computational Science and Engineering

Semester 1

Students will study the following core Computational Science and Engineering course units:

- COMP60071 Introduction to Computational Science (15 credits)
- COMP60081 Fundamentals of High Performance Execution (15 credits)
Students will select TWO further course units from the Advanced Computer Science syllabus. Of particular interest may be:
- COMP60051: High Performance Visualisation

Semester 2

Students will study the following core Computational Science and Engineering course unit:

- COMP60092: Algorithms for Differential Equations (15 credits)

- Students will select ONE further course unit from the Advanced Computer Science course units, of which the following is strongly recommended:
- COMP60032: High-Performance Computing in Science & Engineering (15 credits)

7.4.2 Computational Science and Engineering Programme Specification

Please visit http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php for the programme specification.

7.5 MSc in Computational Methods and Imaging in Medicine

The MSc in Computational Methods and Imaging in Medicine is run jointly between the School of Computer Science and the Faculty of Medical and Human Sciences. The University of Manchester is exceptionally strong in both of these activities: The School of Computer Science has a long and distinguished research record, is one of the largest Schools in the UK and provides access to some of the best computing facilities in the world. The Faculty of Medical and Human Sciences is one of the largest in Europe, centred on the University. It also includes links with many of the major hospitals and centres of medical research in the area.

The MSc in Computational Methods and Imaging in Medicine draws upon the strength of the research and teaching in both these areas, and the industrial and health service links, to provide a high quality advanced MSc programme aimed at the widespread and ever-growing application of computational methods in the field of medicine.

The programme is suitable for candidates with:

- an extensive Computer Science background who wish to specialise in Medical Applications, or,
- a Medical/Biological background and some computing experience, who wish to enhance their skills and knowledge to the current advanced levels of activity in the area. There are pathways through the programme for these two types of entrance backgrounds.

7.5.1 Core Course units and Pathways for Computational Methods and Imaging in Medicine

For the one-year programme, the first half-year consists of taught course units provided by the Division of Imaging Science and Biomedical Engineering (ISBE) in Medical and Human Sciences and by the School of Computer Science.

The syllabus allows for a number of pathways. The choice of pathway depends upon your background and on whether you wish to specialise in one area of the subject.

Semester 1: Core Course Units (12 weeks)

1. MEDN6051 Introduction to Human Biology (ISBE)
2. MEDN7991 Introduction to Health Informatics (ISBE)
3. BIOL60081 Introduction to Programming in Java (ISBE/CS)
4. MEDN60001 Introduction to Biostatistics and Epidemiology (ISBE)

All course units are 15 credits.

Depending on the your background and area of study, you are required to take:

- For those without 50% CS in their degree but good Biomedical background (2) and (3) above,
- For those without 50% CS in their degree and weak Biomedical background (1), (2) and (3) above,
- For those with good Computing background but poor Biomedical background, (1) and (2) above;
- Option (4) may be taken as long as only 3 core course units are taken overall. It is a prerequisite for Statistics II and for Epidemiology (see below).

Semester 2: Advanced Course Units (12 weeks)

Students will select three or four further course units to make 90 credits overall. There are two areas: Health Informatics and Imaging and Image Processing. All students must choose at least one course unit from the Health Informatics area. Each course unit is worth 15 credits. Choices are made depending both on your interests and on whether your background equips you for a course unit.

Health Informatics

- BMAN61102 Decision Analysis and Decision Support Systems (Manchester Business School)
- COMP60312 Computational Biology (School of Computer Science)
- MEDN60102 Advanced Biostatistics (Evidence for Population Health Unit)
- MEDN60172 Decision Support (CS/ISBE)
- MEDN60182 Advanced Epidemiology (EPHU)

Imaging and Image Processing

- MEDN61182 Medical Imaging (ISBE)
- MEDN61082 Nuclear Medicine (ISBE)
- COMP60440 Advanced Machine Vision (ISBE/CS)

The first two course units above require Physics to degree level.

15 credits of 'flexibility' is allowed: subject to the Programme Director's approval, relevant course units at MSc level, either in the two Schools or elsewhere, may be chosen to contribute 15 credits to the 90 required. Possibilities for flexibility are further course units in the ISBE modular MSc, course units from related disciplines, or course units from the MSc in Advanced Computer Science (see the Advanced Computer Science syllabus at

http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/, such as:

- COMP60431 Machine Learning (15 credits) (School of Computer Science)
- COMP60491 Robotics (15 credits) (School of Computer Science)

- COMP60362 Advanced Database Technologies (School of Computer Science)
- COMP60321 Computer Animation (School of Computer Science)

7.5.2 Computational Methods and Imaging in Medicine Programme Specification

Please visit http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php for the programme specification.

7.6 MSc in BioHealth Informatics

Details of structure and arrangements for this new programme are available on the School Postgraduate website http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/

7.6.1 BioHealth Informatics Programme Specification

Please visit http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php for the programme specification.

7.7 MSc in Low Power Systems Integration (CEESI)

The School of Computer Science is recognised in academia and industry for the advanced level of technical and research skills in areas of electronic system integration. This recognised expertise is now made available through the School's participation in the CEESI consortium, in which we deliver the Low Power System Integration programme. The strategic importance of system integration in the electronics industry is widely recognised.

The MSc in Low Power System Integration is managed within the existing framework of the Masters training in the School of Computer Science. This particular programme is primarily aimed at students with industrial experience who wish to use the programme as a career development opportunity. It is expected that the students will be either part-time or industrially sponsored. They will then join with other students registering through other university programmes that share the course units that make up the CEESI programme.

The part-time Low Power System Integration programme consists of taught course units running over an annual timetable. The academic year runs from September to August and consortium members run course units throughout the year. The general pattern is that part-time students will take two or three course units in each academic year until they have amassed the required 90 credits that allow them to be considered for a research project place to complete the Msc.

Each Masters student will also undertake a Research Project. This takes place on completion of the taught course units and generally will take one academic year to complete the research and the scientific solution resulting in an academic dissertation. This project is to be completed and a dissertation submitted within four years of starting the part-time programme.

The course units are delivered through a VLE. This provides the student with on-line communications with peers and tutoring staff, through a bulletin board system. Work

packages and some resources are also delivered through the VLE. The teaching material is interactive, using quizzes, step-through animations and examples.

Practical exercises are provided in the work packages and some are then submitted for assessment. Weekly on-line tutorials are provided using IRC technology. At the end of the guided learning the student are set project work. For some course units this may be individual projects and in other circumstances, group work is more appropriate. Both can be supported through the VLE. It is also intended that some video lectures will be provided with these course units.

Full details of the structure of this programme and the course units provided by the consortia are available on the School's Postgraduate website http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/.

7.7.1 Low Power Systems Integration (CEESI) Programme Specification

Please visit http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php for the programme specification.

7.8 Master of Enterprise (Ment) in Computer Science

The Master of Enterprise in Computer Science (MEnt) is a Masters programme combining the scientific expertise of the School of Computer Science with the expertise in enterprise and commercial exploitation of ideas in the Manchester Science and Enterprise Centre (MSEC). The programme is designed to appeal to those students who have a desire to participate actively in the business of exploiting their scientific skills and knowledge, whilst practising as professional scientists.

The programme is managed by the Manchester Science and Enterprise Centre (www.msec.ac.uk) who handle applications to the MEnt degree and provide a programme with a structure rather different from other Masters level programmes, so as to allow the development of entrepreneurial ideas, but using the Advanced MSc course units to provide scientific training.

The Handbook for this programme is available from the Science and Enterprise Centre **website at** www.msec.ac.uk.

7.9 Notes for Part-Time Students

The induction course unit [COMP61002](#) and course unit [COMP60992](#) are not compulsory for part-time students. However, these units consist of many different topics which give you an important grounding in computer science and you are strongly advised to participate in these sessions if you can.

Deadlines for assessed coursework are handled more flexibly for part-time students. Please talk to the responsible unit lecturer about your particular case.

Those taking MSc level course units on a part-time basis have their own Director of Part-Time Studies who will give you help and guidance in combining your work demands with those of your studies.

8 Foundation Degrees

MSc Foundation Degrees are offered to students who have a good degree in a Science or Engineering subject but little formal training in Computer Science at the degree level.

To enter the Advanced Programme you are required to take at least 2 Foundation course units by Distance Learning, and at maximum 4. Normally these are taken in the year preceding full entry to the MSc Programme.

In order to progress to the full taught programme you must pass all of the required Foundation course units at the 50% level. 15 credits are carried forward towards your MSc. You must then complete your MSc programme according to the regulations in this Handbook.

If you wish to enter by Foundation Degree, please indicate this on your application.

9 Research Projects

Research projects are designed by members of staff to enable you to develop research and development skills and to gain practical experience of applying the techniques covered in the taught part of the programme to realistic problems. Projects relate to current research and development areas, and are undertaken within research groups in the School or in an industrial setting. Keen students may propose their own projects so long as the project is suitable for the award of an MSc and it can be accommodated by the School.

The projects are all individually supervised and typically you would meet with your supervisor for up to one hour each week. Although much of your work is likely to be in the form of a working program or system, your degree is awarded on the basis of the project report, presented as a formal dissertation or equivalent.

Although most projects involve students working individually, some may involve pairs or occasionally groups of students working on different aspects of a larger project.

Project allocations are made during the early part of the second semester, satisfying individual preferences wherever possible. An announcement about this procedure will be made in the latter half of the first semester.

You should read the [Guide to MSc Projects](#) (Section 11 in this Handbook) early in the first semester.

Dissertation submission deadlines.

The normal deadline for submission of MSc dissertations is at the beginning of the second week of September and you are strongly urged to complete by then. Dissertations will be accepted up to mid-January, which is the final deadline, but *you are required to register as writing-up student* and to pay additional fees for continued use of University facilities. The only exceptions to this deadline are significant mitigating circumstances, approved, in advance, by the School's MSc Panel. Approval must be sought via the Programme Director with a case explaining the circumstances surrounding late submission.

Students are encouraged to attend the regular programme of research seminars in the School, given by invited speakers, covering a wide variety of topics in computer science.

As preparation for the research project course unit [COMP60992](#) is presented at various points through the academic year. Part of the course unit provides training in research skills and an orientation towards the practice of research. The other part provides training in a range of professional skills and material on expectations and conduct in an industrial and business environment.

Notes for the MSc in Advanced Computer Science with ICT Management

The projects typically undertaken by students on the ACSwICT Programme fall into three categories: general computer science, management-related and industry-based. Availability of projects in the last two categories is limited. There is no requirement that the project topic is ICT management-related.

9.1 Notes for Part-Time Students

As a part-time student, you should allow one year for completion of your research project; for this reason we will often allow part-time students to embark on their research project before they have amassed the 90 course unit credits. This is provided that they have achieved satisfactory results in their completed course units.

Work-based research projects: If you are going to carry out a project in conjunction with your full-time work environment, it needs to be discussed fully with the programme director so that all the appropriate mechanisms are put in place to satisfy both the academic requirements of a research project and the requirements of your sponsoring employer.

10 Assessment and Examinations

The defining regulations and procedures for the MSc programme are laid down in the University's Ordinances and Regulations at <http://www.campus.manchester.ac.uk/medialibrary/policies/ordinance-master-pg-diploma-pg-certificate.pdf>

10.1 General Requirements

The assessment consists of two parts (1) an assessment of the taught course units undertaken, and (2) an assessment of the Research Project. In order to be allowed to complete the Research Project, students must pass the taught part of the programme. The award of an MSc is then made on the basis of the output from the Research Project.

10.2 Taught Part

Taught course units are normally assessed by coursework and examination.

Coursework

Coursework is likely to include practical laboratory exercises (individually or in groups), written essays, seminar presentations, and/or other forms appropriate to each individual course unit. The weightings of coursework and examination marks used in computing the course unit results are given in the course unit descriptions.

Deadlines.

Deadlines for coursework will be set by the course unit lecturer(s).

Late work is likely to attract penalties. If you are aware that you may miss the deadline please contact the relevant course lecturer as soon as possible. Extensions will be granted where there are extenuating circumstances and should be applied for before the deadline. A course unit lecturer may make exceptions if there are practical considerations (such as problems in a lab).

Attendance

Attendance of the taught course units is compulsory and poor attendance attracts penalties on coursework. The Postgraduate Office should be notified of absences due to illness of less than 7 days by means of self-certification forms, which are available from the Postgraduate Office. Longer absences must be certified by a medical note signed by a general practitioner or hospital doctor. *It is in your interests to keep us fully informed of medical or other problems you have so that the effect these may have on your work can be taken into account in examination meetings.* Please refer to [Ill Health](#) for a more detailed guidance on what to do in case of illness. The University's policy regarding 'Work and Attendance of students' is available from <http://www.campus.manchester.ac.uk/studentnet/policies/>

Discipline and conduct

The University's policy on student 'Discipline and Conduct' is also available from <http://www.campus.manchester.ac.uk/studentnet/policies/>

Examinations

The examinations usually consist of a two-hour paper for each course unit, usually carrying one half of the marks for the foundation course units and one third of the marks for the advanced course units. The examinations take place at the end of each semester. Past examination papers are available via the **School's [information page for MSc students](#)**.

Use of language translation dictionaries in the examinations. Students who are registered on this programme of study are *not* allowed the use of a dictionary during examinations.

Pass Rules for the Taught Course Units

The assessment for the **MSc** consists of two parts: (1) an assessment of the **taught course units** undertaken and (2) an assessment of the **project dissertation, and group report in the case of group-based projects**. In order to be allowed to progress to the research project, students must successfully pass the taught part of the programme. The award of an MSc is then dependent upon passing the assessment of the project dissertation/reports.

- (1) Each student will be assessed on 90 credits' worth of coursework and examination questions. Coursework is likely to include practical laboratory exercises (individually or in groups), written essays, seminar presentations, and/or other forms appropriate to each individual course unit; for each full course unit, this usually carries two-thirds of the mark. The examinations usually consist of a two-hour paper for each course unit, carrying one third

of the marks, and take place after the teaching in each semester. The University regulations are at:

<http://www.campus.manchester.ac.uk/medialibrary/policies/ordinance-master-pg-diploma-pg-certificate.pdf>

A candidate is required to register for 90 credits' worth of course units, and will normally be considered as passing the units if:

- (i) the credit-weighted average is 50% or more on the course units, and
- (ii) the credit-weighted average of the practical work is 40% or more, and the credit-weighted average of the examination results is 40% or more, and
- (iii) course units whose results are below 50% amount to **no more than 45 credits**.

These can be re-sat once and the maximum mark to be awarded will normally be 50%.

Compensated passes:

- (i) Students may be awarded a compensated pass for a **Masters degree** when they fail **no more than 30 credits** and receive a mark between 40 and 49% for those failed credits. The student must also have gained an overall average for all taught credits of 50% or more in order to be granted a compensated pass.
- (ii) Students may be awarded a compensated pass for a **Postgraduate Diploma** programme when they fail **no more than 30 credits** and receive a mark between 30% and 39% for those failed credits. The student must also have gained an overall average for all taught credits of 40% or more in order to be granted the compensated pass.
- (iii) Students may be awarded a compensated pass for a **Postgraduate Certificate** programme when they fail **no more than 15 credits** and receive a mark between 30% and 39% for those failed credits. The student must also have gained an overall average for all taught credits of 40% or more in order to be granted the compensated pass.

Failed units:

The maximum allowable cumulative failure of course units in a Masters programme at the first attempt is 45 credits of the taught component of the programme. A student whose failures at the first attempt exceed 45 credits will be deemed to have failed the programme. They will then be judged against the requirements for a pass on the Postgraduate Diploma programme. If this results in their failing less than or equal to 45 credits at Postgraduate Diploma level, the student may resit those units failed at Postgraduate Diploma level to obtain the award of Postgraduate Diploma.

The final decision on whether a student passes is taken by the MSc Examination Board.

- (2) The assessment of the **dissertation/reports** is by two internal examiners, moderated by one external examiner. Details about dissertation format etc can be found on the University website and should be submitted in

accordance with the information set out in the University's Guidance Notes for the Presentation of Dissertations at <http://www.campus.manchester.ac.uk/medialibrary/researchoffice/graduateeducation/g-pres-diss-pgt.pdf>

All work must be original: students presenting work which is copied from any other source (unless explicitly allowed), including from other students, are breaking University regulations and will be dealt with under these regulations. Guidance on plagiarism is provided in the Programme handbook.

Students who achieve a project mark between 40-49% may accept the award of Postgraduate Diploma with no further work required or resubmit the Dissertation/reports on one occasion, at the discretion of the Board of Examiners.

A student achieving a mark below 50% for a resubmitted dissertation/reports will be awarded a Postgraduate Diploma. The maximum mark to be awarded for resubmitted dissertations or projects will normally be 50% for the Masters degree and 40% for the Postgraduate Diploma.

Awards:

Postgraduate Diploma

The University regulations are at:

<http://www.campus.manchester.ac.uk/medialibrary/policies/ordinance-master-pg-diploma-pg-certificate.pdf> It is awarded to a student who has been assessed on 90 credits' worth of coursework & examination questions, and will normally be considered as passing the units if, in addition to the University regulations:

- (i) the credit weighted average is 40% or more on the course units, and
- (ii) the credit weighted average of the practical work is 40% or more, and the credit weighted average of the examination results is 40% or more, and
- (iii) course units whose overall results are below 40% amount to no more than 45 credits. These can be re-sat once and the maximum mark to be awarded will normally be 40%

In addition, for the Diploma, students are required to successfully complete a mini-project worth 30 credits and achieve a mark of 40% or more. This will consist of an extended essay on work undertaken or a report on work undertaken which is commensurate with one-third of a full 90-credit MSc project. It should have the same standards of literacy and presentation as an individual MSc dissertation.

Postgraduate Certificate

The University regulations are at:

<http://www.campus.manchester.ac.uk/medialibrary/researchoffice/graduateeducation/g-pres-diss-pgt.pdf> This is awarded to students who have successfully taken 60 credits' worth of coursework & examination questions with a result of 40% or more in each course unit.

10.3 Research Project and Dissertation

Individual MSc Dissertation

The general requirements for presentation of individual dissertation are set out in the University's Ordinances and Regulations <http://www.campus.manchester.ac.uk/medialibrary/researchoffice/graduateeducation/g-pres-diss-pgt.pdf>. All work must be original: students presenting work from another source, including from other students, without explicit acknowledgement may be regarded as attempting a fraud and will be dealt with under the University's disciplinary procedures. A more extensive discussion of what is and what is not permitted in this area can be found in [Section 17.3 on Plagiarism](#).

Group-Based MSc Projects

The assessment of group-based MSc projects is based on

- the group report 40%
- the individual report 60%

The group report is prepared by the group as a whole. The group report should include a brief description of the organisation of the project tasks, how decisions were reached and a summary of all joint and individual contributions to various aspects of the group report (typically this will include contribution to the specification and design, research, program code, program documentation, project management logs, minutes of meetings, editorship of group report). The group report, together with any supporting documents which are prepared jointly, should be submitted as a separate document under joint authorship.

Each member of the group should prepare and submit an individual dissertation which should follow the University's guidance on the presentation of taught Masters dissertations.

<http://www.campus.manchester.ac.uk/medialibrary/researchoffice/graduateeducation/g-pres-diss-pgt.pdf>

The individual dissertation must include the following.

- Details about the individual contribution to the project and a summary of the other group member's contributions to the project.
- A suitably formulated declaration about authorship. The declaration should state that the work referred to in the dissertation was completed as part of a group project, what portion of the work referred to in the dissertation has been (or will be) submitted by which other members of the group, and what portion (possibly none) of the work referred to in the dissertation has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

Dissertation Examination

The MSc dissertation/reports is/are evaluated by two internal examiners at Manchester (normally your supervisor and another not involved with your work on the project) who submit written reports. These reports and the dissertations themselves are considered by the external examiner at a specially convened examination

meeting in November. Agreed recommendations are then made to the MSc panel of the Faculty which gives final approval. The possible recommendations are:

1. award degree unconditionally;
2. award subject to minor corrections;
3. refer (encourage resubmission following rewriting or additional work);
4. reject with no option to resubmit.

At the recommendation of the board of examiners, students will normally be allowed one resubmission of a failed dissertation or project and this will normally be within four months of the date of the publication of the result. The board of examiners, in agreement with the external examiner may, exceptionally, decide not to allow resubmission and the Faculty will agree that the grounds for not allowing a resubmission are justified.

Students who achieve a MSc project mark of between 40-49% may accept the award of Postgraduate Diploma with no further work required or resubmit the dissertation/reports on one occasion, at the discretion of the Board of Examiners. A student achieving a mark below 50% for resubmitted dissertations/reports will be awarded a Postgraduate Diploma.

The maximum mark to be awarded for resubmitted dissertations or projects will normally be 50% for the Masters degree and 40% for the Postgraduate Diploma.

The project reports for the Diploma is assessed by the same procedure, applied to a project of 30 credits (instead of 90 credits) and the minimum pass mark is 40%.

10.4 Awards by Credit Accumulation

As well as the one-year MSc programme, the School offers a MSc, Diploma and a Certificate in Advanced Computer Science with ICT Management, by accumulating credits over a period, normally no more than four years. These qualifications are suitable for part-time students and for those who are on release for training and skills enhancement.

The **MSc Programme** requires a total of 90 credits in taught course units (6 course units), assessed as described above, and a 90 credit full project. The whole must normally be taken within four years, and students are encouraged to take it within a shorter period, either over two years; or in a three-year scheme in which 45 taught credits (3 course units) are taken in each of the first two years and the research project in the third. These arrangements can be modified to suit personal circumstances.

There are two routes to achieving the **Diploma**.

This route is only open to part-time or part-time modular students and requires a total of 120 credits in taught course units (8 course units), assessed as follows: To pass at Diploma level the credit weighted average of the course units must be 40% or more and no more than 30 credits shall fall below the 40% mark, and these failed credits should be between 30% and 39%. The selection of these course units must fulfil the same criteria as selection for the MSc programme. Candidates would select this option at (a) entry point into the programme or (b) on successful completion of 90 credits (6 course units).

This route is open to all students and requires a total of 90 credits in taught course units (6 course units), assessed as described above, with a credit weighted average of 50%. The selection of these course units must fulfil the same criteria as selection for the MSc programme and a research project of 30 credits.

The **Certificate of Advanced Computer Science** is awarded to students who have successfully taken 60 taught credits (4 course units) with a result of 40% or more in each course unit.

Individual course units may be taken and these are awarded a pass when the marks for the unit are 50% or more.

The results for every student are presented to the Computer Science MSc examination board and provided they fulfill the stated criteria will be confirmed as a pass.

Upgrading from a Certificate to a Diploma or to an MSc, or from a Diploma to an MSc is permitted as long as the final award is achieved within a four-year period from first registering for the lower qualification.

Individual Course Units

Pass Rules for Individual Course Units. Individual course units are assessed as follows: a pass at MSc level is awarded if the overall mark for the course unit is at least 50% and, for course units where both are set, the marks for both the coursework and the examinations are at least 40%. For a pass at diploma or certificate level, an overall mark for the course unit of 40% is sufficient.

10.5 MSc with Distinction

An MSc with Distinction is awardable under the following circumstances:

1. The student must have passed the assessment for course units with an overall mark of at least 70% with no mark below 50% in any course unit.
2. The dissertation/reports is/are submitted on-time and both the examiners award a mark of at least 70%. The recommendation is then passed to the External Examiner, who must agree to the recommendation for the award of a Distinction to be granted by the Faculty's MSc Panel
3. Students who have had to resit any unit(s) or have been granted a compensated pass will not be eligible for the award of distinction.

Diploma students can gain a distinction if they satisfy the same rules.

Part-time students may use 3 calendar months as a writing-up period and still be eligible for a distinction. Such part-time students would be required to submit by January, assuming their programme began in September.

10.6 MSc with Merit

An MSc with Merit is awardable under the following circumstances:

1. The student must have passed the assessment for course units with an overall mark of at least 60% with no mark below 50% in any course unit
2. The dissertation/reports is/are submitted on-time and both the examiners award a mark of at least 60%.

3. Students who have had to resit any unit(s) or who have been granted a compensated pass will not be eligible for the award of merit.

Diploma students can gain a merit if they satisfy the same rules.

10.7 MSc with Pass

To obtain a pass for an MSc degree, the student is required both to pass the taught course units at Masters Level as described above and to achieve at least 50% as a project mark.

10.8 Procedures for Students Who Fail

Students who fail the assessment for the taught part of the programme are permitted single resits of failed examinations on the next occasion that the examinations are normally set. This normally means that the student needs to interrupt her/his studies and retake the examinations in the next year. It is not possible to start a project (or continue work on the project after the Easter break) until the taught part of the programme has been passed. If a candidate satisfies the criteria for a Diploma or Certificate, they may, at the discretion of the Examiners, be given the option to re-register accordingly. If in the opinion of the Examiners a candidate fails to meet acceptable standards of performance, they will be excluded from the programme and their registration will be cancelled. In all such circumstances the Programme Director will discuss the candidate's circumstances with the aim of achieving the most satisfactory outcome.

10.9 Interruptions

An interruption is a formal break, usually of one month or longer, in your programme of study. A request is made via the Programme Director to the MSc Panel and circumstances will dictate whether and under what terms it may be granted. The University is generally under an obligation to inform any sponsor if an interruption is granted. The University is sympathetic and helpful in genuine cases of difficulty. The University's policy regarding interruptions can be found on the website:

<http://www.campus.manchester.ac.uk/medialibrary/researchoffice/graduateeducation/p-change-to-prog-pgr.pdf>

10.10 Academic Appeals

No appeal can be made against the academic judgment of Examiners.

However, a student has right of appeal on procedural grounds, on the grounds of prejudice or bias or of inadequate assessment, and on grounds that the examiners were not in possession of information relating to circumstances that may have affected the student's academic performance. There is also provision for appeal against decisions on Masters dissertations. Full details can be found on the [University webpage](http://www.campus.manchester.ac.uk/studentnet/policies/) <http://www.campus.manchester.ac.uk/studentnet/policies/> under 'Academic Appeals'.

10.11 Prizes

Annual prizes for excellence in academic performance in Masters courses are awarded.

11 Advice on Essay Writing

For help in developing your essay writing skills (and as preparation for writing your dissertation) useful Web pages have been compiled by the Faculty of Humanities:

[Study skills: Essay writing](#)

<http://www.humanities.manchester.ac.uk/studyskills/assignments/>

Here are some other UK based sites which you might want to peruse:

[How to write an essay](#) (University of Birmingham, Department of English)

<http://www.english.bham.ac.uk/staff/tom/teaching/howto/essay.htm>

[Essay-Writing](#) (University of Leeds, Institute of Communication Studies)

12 Guide to MSc Projects

12.1 Introduction

The MSc project is in many ways the most important single component of the MSc programme. It provides the opportunity for you to demonstrate independence and originality, to plan and organise a large project over a long period, and to put into practice the techniques you have been taught throughout the course. Whatever your level of academic achievement so far, you can show your individuality and inspiration in this project. It should be the most satisfying piece of work in your course.

12.2 Choosing a project

The idea for your project may be a proposal from a member of staff or your own, or perhaps a combination of the two. After project proposals are published at the beginning of the calendar year, you should discuss the projects that interest you with the supervisors as soon as possible so that you have plenty of time to think about the best choices for you. Not every project is suitable for every student; some may be specifically tailored to a particular degree and some may only suit students with a very specific set of interests. Each proposal will indicate these constraints in order to help you to make an informed choice.

Project proposals originating outside the school (e.g. from actual or potential employers or sponsors) are encouraged, but you must provide clear details of what the project involves and have the approval of the Programme Director. In exceptional cases permission may be given to do the project work in another institution or country, subject to suitable arrangements for regular contact with your supervisor in the school being made and approved.

If you have your own idea for a project it is your responsibility to find a member of staff who both approves of the proposed programme of work and is willing to supervise it. External projects cannot be approved unless a suitable internal supervisor can be found. Not all ideas are suitable for an MSc project since certain academic requirements have to be met. The project coordinator will assist you in finding a supervisor but you cannot assume that one can be found in every case.

12.3 Assessment

General requirements. All MSc projects are required to contain some element of original work. This does not mean that they have to produce ground-breaking, innovative research results (although some do). It means that they have to cover some new ground. An implementation project could develop a complex application which does not already exist, or enhance some existing application or method to improve its functionality or performance. Projects which are predominantly survey reports can be backed up with experimentation, implementation, theoretical or conceptual analysis, new illustrative examples, etc. Your supervisor will advise on how to develop your project appropriately. A distinction level project involves a combination of sound background research, a solid implementation or piece of theoretical work, and a well-structured and well presented report detailing the project's background, objectives and achievements (or reports in case of group project).

Assessment. For the purpose of the MSc degree and the award of distinctions, the *only thing* that can be taken into consideration is the quality of your final dissertation /reports. Formally, your project work is assessed on the basis of your dissertation/reports and the group report if applicable, only. You cannot compensate for a poor write-up by a well-conducted project. You cannot get credit for ideas or experiments not included in the dissertation/reports. Dissertations not meeting minimal standards of presentation will not be accepted for award of the MSc degree, no matter how good the project work itself.

Other considerations. Remember that your attitude to, and performance in, the project is taken very seriously by prospective employers and other institutions to which you may be applying. Your project work is usually reported in some detail in academic references provided for you by your supervisor or other staff members. In this respect you do obtain credit for the way in which you approach your project.

12.4 Allocation

You must complete the Project Choice Form available from the Postgraduate Office after the project proposals are announced. If you choose from the published proposals your first choice of project cannot be guaranteed since individual supervisors can only take responsibility for a limited number of projects. In some cases you may be allocated the project but another member of staff will be assigned to supervise it. Failing this, you may be allocated your second choice.

When considering a project, you must consult the prospective supervisor, so that you agree on pre-requisites, background and project aims and objectives. You will need his or her signature in order to be allowed to choose a project. If you are enrolled in a specialized MSc programme you must make sure that your project is approved by the Programme Director as suitable for the programme.

12.5 Equipment

You are permitted to develop software (or hardware, if appropriate) on your own equipment, provided that you can duplicate it in the School for demonstration to your supervisor. However, you should prepare a fall-back position in case your equipment misbehaves. Remember that the software is not always reliable on all machines. It is

not unusual for a potentially good project to be spoilt by bugs in compilers, libraries etc. on home computer equipment.

If you wish to use software which is not currently provided please inform your supervisor immediately. A request can then be made to purchase it if an acceptable alternative is not available. A purchase request will need the support of your supervisor and is not guaranteed to be approved.

Please note that there is no excuse for failing to keep adequate backups on your home computer. If you lose your program or your data or your reports because of a system failure no allowance can be made. Extensions will not be given at the end of the project for you to re-type a lost report, for example.

All students should equip themselves with a Laboratory Workbook in which they record their progress, the development of ideas, results of discussions with supervisor and decisions made as the project progresses. This will provide a source book for writing the dissertation/reports and also provides a record of your progress through the project.

12.6 Supervision

The relationship between yourself and your supervisor is often critical to the success of the project. You will be given guidance in the Research Skills course unit ([COMP60992](#)) on how to manage this relationship, and how to cope with research in general.

You must make sure that you arrange regular meetings with your supervisor. The meetings may be brief once your project is under way but your supervisor needs to know that your work is progressing. You should inform the supervisor of your address and any changes to it, so that he or she can contact you, if necessary. If you need to talk to your supervisor between meetings and cannot locate him/her in their office, leave a note, or send electronic mail, asking them to suggest a time when they will be available. When you go to see your supervisor you should have prepared a written list of points you wish to discuss. Take notes during the meeting so that you do not forget the advice you were given and the conclusions that were reached.

12.7 The Dissertation/Reports

The dissertation/reports is/are an *extremely* important part of the project. We give advice below on how to structure and present your dissertation/report. Regulations will be found on the **University website**

<http://www.staffnet.manchester.ac.uk/policies/>

Please also refer to **Section 10.3** for the requirements of the group report in case you are doing a group-based project.

The dissertation/reports serve/serves to show what you have achieved and should demonstrate that:

You understand the wider context of computing by relating your choice of project, and the approach you take, to existing products or research.

You can apply the theoretical and practical techniques taught in the course to the problem you are addressing, and that you understand their relevance to the wider world of computing.

You are capable of criticising your own work objectively and making constructive suggestions for improvements or further work based on your experiences so far.

You can explain your thinking and working processes clearly and concisely to third parties who may not be experts in the field in which you are working.

Remember that second markers, and other readers, will not have followed the project throughout. Make the presentation reasonably self-contained. State the objectives clearly; provide sufficient background material.

Many students underestimate the importance of the dissertation/reports. You should consider that the aim of the project is to produce a good dissertation/reports and that software, hardware, theory etc. that you develop during the project are merely a means to this end. Do not make the mistake of leaving the write-up to the last minute. Ideally you should produce the bulk of the reports as you go along and use the last month or two to bring it together into a coherent document.

A typical length for individual project dissertation is 60-100 pages, double spaced. In the case of a group based project a typical length of a group report is 25-40 pages x n, where n is the number of group members, and a typical lengths of the individual report is 45-60 pages, double spaced. These specifications are guidelines only.

Remember that quantity does not automatically guarantee quality. A 150 page report is not twice as good as a 75-page one, nor a 10,000 line implementation twice as good as a 5,000 line one. Conciseness, clarity and elegance are invaluable qualities in report writing, just as they are in programming, and will be rewarded appropriately. Also, it is important to appreciate that the appropriate size and structure of a report can vary significantly from one project to the next. Despite these variations, however, most good reports have the following components in common.

Presentation. Below we give an outline of how the dissertation/reports should be presented. **This is for guidance only:** University regulations for the dissertation can be found on the **University's policies webpage**

<http://www.campus.manchester.ac.uk/studentnet/policies/>

Section 10.3 specifies the requirements for the group based projects. These regulations should be followed exactly. The dissertation/reports must be bound in the university approved manner. The University Library offers a binding service, as do other local binderies.

Title page. This must be in the standard form described in **University regulations**. <http://www.manchester.ac.uk/policies>

Acknowledgements. It is usual to thank those individuals who have provided particularly useful assistance, technical or otherwise, during your project. Your supervisor will obviously be pleased to be acknowledged as he or she will have invested quite a lot of time overseeing your progress.

Contents page. This should list the main chapters and (sub) sections of your report. Choose self-explanatory chapter and section titles and use double spacing for clarity.

If possible you should include page numbers indicating where each chapter/section begins. The table of contents should not have more than two levels of headings (say chapters and sections within chapters).

Abstract. The abstract is a very brief summary of the report's contents. It should be about half a page long. Somebody unfamiliar with your project should have a good idea of what it is about having read the abstract alone and will know whether it will be of interest to them.

Introduction. This is one of the most important components of the report. It should begin with a clear statement of what the project is about so that the nature and scope of the project can be understood by the reader. It should summarise everything you set out to achieve, provide a clear summary of the project's background and relevance to other work and give pointers to the remaining sections of the report which contain the bulk of the technical material.

In the case of a group based project, both the group report and the individual report must include details about the contribution of the different group members to the project, see Section 10.3.

Background. The background section of the report should set the project into context by relating it to existing published work (or unpublished work) on which the project builds. The background section is sometimes included as part of the introduction but more usually is a separate chapter, or collection of chapters if the project involved an extensive amount of research. The published work may be in the form of research papers, articles, text books, technical manuals, or even existing software or hardware of which you have had experience. You must acknowledge the sources of your inspiration; you are expected to have seen and thought about other people's ideas; your contribution will be putting them into practice or developing them in some new direction. One rule is clear: if you present another person's work as your own and do not cite your sources of information/inspiration you are *cheating*. When referring to other pieces of work, cite the sources at the point they are referred to or used, rather than just listing them at the end. The University takes a very strict line on plagiarism, and its standard notice on the subject is included in this Handbook (and is available on the University website).

Body of report. The central part of the report usually consists of three or four chapters detailing the technical work undertaken during the project. The structure of these chapters is highly project dependent. Usually they reflect the chronological development of the project, e.g. design, implementation, experimentation, optimisation, although this is not always the best approach. However you choose to structure this part of the report, you should make it clear how you arrived at your chosen approach in preference to the other alternatives documented in the background. For implementation projects you should describe and justify the design of your program at some high level, e.g. using dataflow diagrams, pseudocode, ADT specifications, Z, VDL, etc., and should document any interesting problems with, or features of, your implementation. Integration and testing are also important to describe. Your supervisor will advise you on the most suitable structure for these middle sections.

Conclusions and future work. All projects should conclude with an objective evaluation of the project's successes and failures and suggestions for future work

which can take the project further. Even the very best pieces of work have their limitations. You will not have time, and you should not try, to tie up every loose end. You are expected to provide a proper critical appraisal of what you have done. Your assessors are bound to spot the limitations of your work and you are expected to be able to do the same.

Bibliography. This consists of a list of all the books, articles, manuals etc. used in the project and referred to in the report. You should provide enough information to allow the reader to find the source. You should give the full title and author and should state where it is published, including full issue number and date, and page numbers where necessary. In the case of a text book you should quote the name of the publisher as well as the author(s).

Appendix. The appendices contain information which is peripheral to the main body of the report. Information typically included are things like program listings, tables, proofs, graphs or any other material which would break up the flow of the text if it appeared. Large program listings are rarely required, and should be compressed as much as possible, e.g. by printing in multiple columns and by using small font sizes, omitting inessential code etc.

User guide. For projects which result in a new piece of software you should provide a proper User Guide providing easily understood instructions on how to use it. A particularly useful approach is to treat the User Guide as a walk-through of a typical session, or set of sessions, which collectively display all the features of your package. Technical details of how the package works are rarely required. Keep it concise and simple. Do not bother including instructions at the level of 'Turn on the machine, and then insert disk'. The use of diagrams illustrating the package in action can often be effective. A user guide is sometimes included as a chapter in the main body of the report, but is often better as an appendix to the main report. Do *not* include user guides for trivial pieces of code where these are not the main subject of the dissertation.

Format. The University requires that dissertations/reports are submitted in a certain format whose description is available in Section 10.3 and on the **University's policies webpage**: <http://www.campus.manchester.ac.uk/studentnet/policies/> .

Make sure that your dissertation is in the required format (there are various 'style files' to help with this), otherwise it may not be accepted at submission time. Also an electronic copy of your final dissertation should be submitted to the Resource Centre or emailed to dissertation-submission@cs.man.ac.uk. The electronic version should be formatted as a PDF file. It should be submitted in an uncompressed form and be suitable for on-line viewing and web download.

12.8 Assessment of the Dissertation

Dissertations are normally assessed on the following broad criteria:

Background research. This assesses your awareness of relevant background work and how your project builds upon or exploits existing techniques or results. For implementation projects, it assesses the way you arrived at your initial project specification, work programme and list of objectives.

General competence. This assesses your general approach, the clarity of your objectives, and your ability to relate the significance of your achievements to the state-of-the-art.

Technical Accuracy. This assesses the main technical output from the project, as regards correctness, elegance, usability etc. of the final product, theoretical or practical, and the techniques employed.

Report. This assesses the quality of the write-up itself: the organisation of the material, quality of the prose, clarity of explanations, spelling, punctuation, legibility, relevance of diagrams, etc. Note that reports falling below minimum acceptable standards will not be accepted.

Finally... Remember that one of your supervisor's main responsibilities is to advise on how to write-up your project results. You are not expected to be able to produce a perfect dissertation without help. You should discuss with your supervisor all aspects of the dissertation, but particularly its structure and how to present the material. You might find it useful to look at MSc dissertations from previous years.

12.9 Project Seminars

Students give a seminar in the first two to three months of the project, although project supervisors may decide to postpone the seminar if they think a later time is more suitable. The seminar will give you experience in communicating your work to others in a formal manner and will also allow you and your supervisor to consider the progress you have made up to this point. The seminar is a compulsory part of COMP60992, although it does not contribute to the final project mark. You will receive feedback and comments from your supervisor and a second marker, usually the other internal project examiner. They will fill out and sign a **feedback form** http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/seminar.pdf together, which addresses presentation skills and progression. The assessment and feedback criteria are outlined in this form. Other students and staff will also attend the seminars, and this is an excellent opportunity to obtain feedback from them. The question and answer session after the seminar is therefore an invaluable part of the process. Indeed, one of the main aims of this is to help each student with the project by providing useful ideas, feedback and encouragement.

Guidelines on seminar organisation can be found on the **seminar organisation** http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/seminar-organisation.html page.

12.10 Pitfalls

Why do some projects go wrong? Here are some of the common causes of failure:

Choosing or starting the project too late. Submit your project request form on time and start the project as soon as you can. The longer you leave it the harder it is to get motivated, especially when all your friends seem to be flying ahead. You should aim to have completed most of the project by early August, thus leaving sufficient time to fill in gaps and write the dissertation.

Failing to meet your supervisor regularly. If you arrange a meeting with your supervisor, turn up at the agreed time. If you are stuck for any reason and you have no meeting arranged, contact him or her immediately. You gain *no* sympathy from

anyone if you lose contact with your supervisor and produce a poor project as a result. Your supervisor will be happy to help you but he or she can do nothing if they are unaware that you are having trouble. Also, make sure that you are prepared for each meeting with your supervisor. This may take the form of a completed piece of work that you have done ready to demonstrate to your supervisor; or it may be that you have hit some problem, in which case come along prepared to explain the problem so that you both can attempt to solve it. Always bring your laboratory workbook and any results you have to each supervision.

Allowing too little time for the report. You should try to produce as much of your report as you can as you go along, even though you don't know in advance its exact structure. Written work along the way has two forms: (1) written accounts which describe a piece of work you have completed along the way. Write these at the time that each stage is completed--it is much easier then; and (2) an evolving plan of your dissertation--chapters, sections and their contents. This changes as the project evolves, but will provide guidance to the overall structure. The last two weeks of the project should be dedicated to pulling together the material you have accumulated and producing a polished final product.

Failing to plan a fall-back position if the planned work is not completed on time. Try to plan your project in stages so that if things go wrong in a later stage you have a completed stage to fall back on.

Trying to satisfy an external customer at the expense of your academic work. Do not let any outside interests interfere with your work. The guidance for your project should come from your supervisor, not your prospective employer.

Over- or under-ambition. Try to be realistic about what you can achieve in the time available. A good project requires a lot of input from you and should prove to be technically challenging throughout. At the same time, however, it is better to do a small job well than it is to fail to do a big job. Your supervisor will advise you on his or her expectations of the project and this will help you to set your sights accordingly.

Submission of preliminary drafts. Do not submit your dissertation/reports without letting your supervisor read through it first. He or she will invariably have comments and suggestions for improvement. Don't leave this to the last moment--give your supervisor a good period to read and comment as he or she will possibly have several to look at, and it can take a while to read through a draft. You should normally expect to revise the complete draft at least once. Dissertations failing to meet minimum standards will not be accepted for award of the MSc degree.

The dissertation/reports have to be your own original work. Guidance on the use of the work of others and on plagiarism can be found elsewhere in this Handbook.

12.11 Research Project Timetable

Early in the Calendar Year. Project proposals are posted on the web and announced to students, go to the postgraduate information:

http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/infocurrentstudents.php

page and navigate from there. Having perused the list, you should:

Obtain a Project Subscription form from the Student Support Office in the School.

Go and **see** the supervisors of the projects you are interested in to discuss the projects in detail.

Get them to **sign** the Project Subscription form. **This is vital**; you will not be assigned a project unless you have seen the supervisor first. Bear in mind that members of staff may be away even during term time, so do not leave this until the last moment.

When you have completed your enquiries, **return** the form to the Student Support Office in the School (we suggest that you keep a copy). You should indicate at least three choices on the form (in order of preference).

This is important: you may be given any of these, so do not select a project unless you are really prepared to do it! Of course, the allocation scheme will respect your preference order-typically, every year around 70% of the students who submit a form by the deadline are allocated their first choice, but clashes of one kind or another always happen.

Please perform this exercise as quickly as possible (i.e. start thinking about a project immediately after the projects are announced-typically, around mid-January - or well beforehand if you wish to arrange your own project) and hand in your form by the deadline. Please note that there is no advantage if you hand your form in early (but there is a disadvantage if you hand in after the deadline).

The project coordinator will then collate the data and attempt, in discussion with programme directors and supervisors, to give as many people as possible their first choices, or, failing that, one of their most preferred choices. Please note that, in general, only one person will get to do one project. Also, there is a limit to the total number of projects that a staff member is capable of supervising. For these reasons, there is a strong likelihood of disappointment if you plump for popular projects/supervisors. Unfortunately there is no way of knowing the pattern of demand in advance (you might like to ask staff members about the level of interest in projects when you see them). If you are unsuccessful, there will be a further round of the process.

A final point: It is possible that you wish to do a project of your own devising, or follow up an idea that has arisen in conversation with a staff member. If you wish to do a project that does not appear on the list then you should first get the agreement of a staff member to supervise you, and then hand in a description of the project (signed by the supervisor) to the Student Support Office in the School, again by the deadline. Projects with industrial partners may also be available.

Second half of February. Project preferences must have been handed into the Student Support Office in the School.

End of February. First round of the MSc project allocation is now on the web. Students still without projects should continue making selections on a fresh form (available from the Postgraduate Office) and should

hand them in as soon as possible from this point on; allocation will be done on a first-come first-served basis every few days.

Start of Easter Vacation. Project allocation complete. Start working on your project as soon as you have completed your examinations. Plan your work. You have the

whole summer before you and it is very easy to underestimate the time required to complete the project. Do not write the dissertation in the last week but write it as you work on the project.

June-early July. [Project seminar](#)

Mid Summer. You must give prior notice of your intention to submit by completing a 'Notice of Submission' form obtainable from the [University's policies webpage](#). A fee is payable for late notice. You will be made aware of the rules regarding the form of the dissertations/reports and will also be told where to submit the **Notice of Submission** Form as well as the dissertation/reports.

Second week of September. The deadline for the submission of MSc dissertations/reports varies from year to year but is usually at the start of the second week of September. Two bound copies of your dissertation must be submitted. Bear in mind that binding may take some time--please allow for this.

To let us know that you have submitted, could you please email pgoffice@cs.manchester.ac.uk.

Submitting late. If you are unable to submit by the deadline in the second week of September you must request the permission to submit late. The relevant form is available on the [Faculty's webpage](#).

13 Programme Management

The programme is run on a day-to-day basis by the Programme Director. The Student Support Office is managed by Mrs Gill Lester who is assisted by Mrs Janet Boyd and Miss Susie Hildreth.

The **Postgraduate Committee** oversees management of the MSc programme. Its principal functions are to determine and monitor the academic content of the programme, to admit and examine students and to monitor student progress. It is answerable to the MSc Panel of the Faculty. Its chair is Professor Roger Hubbard, Head of the Graduate School in the School of Computer Science. The Postgraduate Committee usually meets monthly.

There is also a joint UG/PGT **Industrial Liaison Group** which includes advisors from commerce and industry; currently Thales Information Systems, NCC, Tessella Support Services, Logica, Fujitsu Services (CMS), IBM UK Ltd among others.

Student involvement in programme management is possible in three ways:

through election of two representatives to carry your concerns to the SSCC (Staff-Student Consultative Committee) which meets three times a year, typically in October, February and June;

via feedback meetings with the Programme Directors, and through Course Evaluation Questionnaires, which are consulted and acted on (see Section 17.2)

Staff-Student Consultative Committee meetings between the students and the Programme Director take place once per semester where you may bring forward comments and suggestions, and air complaints, about the programme.

We encourage you not to bury problems for too long because the programme management may not be aware of difficulties. Queries or comments about individual course units should be addressed in the first instance to course unit lecturers. The Programme Directors operate an open door policy for genuine problems of either an academic or personal nature.

External examiners are appointed to monitor the standards of our teaching and assessment. During the year they review coursework and examination papers and provide critical advice of these which we are obliged to take into account. Following the second semester examinations, they attend the University and scrutinise the written papers and coursework of students, submitting a report to the University on our conduct of the whole student assessment. They also examine the Masters dissertations.

14 Student Support Services

The School and University offer a wide range of student support services. You are encouraged to make use of these services--they are there for you. If you need any help, whether it be academic help, in finances, in your personal life, with relationships or the family, in legal matters, or with health, there are services provided for you. *Do not hesitate* to use these services.

It is important that any factor that affects your work is communicated to the School, usually directly to the Programme Director. This is entirely confidential. Such factors may be taken into consideration during the assessment process, and we can compensate for any disruption to, or difficulties during, your work here.

You may well want to make the Programme Director your first port of call. She or he will be able to handle some of the issues directly or advise you what other services are relevant.

If you have difficulties of any sort that you don't want to talk to the programme management about, you may care to consult:

The advice service of the School of Computer Science. This is located in room 2.9 near the school office and is open 1.30-2.00pm each weekday (except for Wednesdays) during term time. The service offers advice on School and university matters and help with anything that concerns you, whether in your studies, in the School, in the university or in your life outside the university. Each day a member of staff is available with knowledge of the School and university and who is willing to listen and help with whatever you bring along. All visits to the advice centre are strictly confidential.

If you wish to contact one of the advisors at any time other than in a lunchtime session, please do so. A list of the advisors is posted on the advice centre door.

The University operates an excellent professional counselling service:

[The Student Counselling Service](#) It is based in Crawford House in the University Precinct Centre, is open 9.00-5.00 weekdays, and can be phoned on 275 2864.

For special academic problems, you may wish to contact

[The Academic Advisory Service](#). It is located in the Williamson Building, Room 2.11a, phone 275 3033.

Other services available are:

[The Student Union](#), which has a wide range of services, including a welfare officer, and a legal advice service.

[The Student Union Advice Centre](#), Steve Biko Building, Oxford Rd, 275 2930.

The Student Health Service, Waterloo Place opposite the Kilburn Building, 275 2858.

[The Accommodation Office](#), Precinct Shopping Centre, 275 2888.

[Manchester Student Homes](#) has a 'Virtual Accommodation Bureau' (an on-line property database), which contains information on all the available student properties.

[The Careers Service](#), Crawford House, Precinct Centre.

[The Student Services Centre](#), Burlington Street, between the library and the refectory, 275 5000.

[The International Students Advice Team](#), 275 2196.

[The University Language Centre](#), Email: iwlp@manchester.ac.uk.

Contact details for information on English language courses: 306 3397, englang@manchester.ac.uk.

A more detailed list of services for students can be found at this address:

<http://www.campus.manchester.ac.uk/studentsupportandservices/>.

14.1 Personal Development Planning

The term personal development planning (PDP) is being used to describe the 'means by which students can monitor, build and reflect upon their personal development'. It is used in order to emphasise that 'this is an active learning process undertaken by individuals for themselves'. 'It is a structured and supported process undertaken by an individual to reflect upon their own learning, performance and / or achievement and to plan for their personal, educational, and career development.'

The Faculty of EPS has developed an on-line PDP file for all PGT students which we strongly encourage you to use. The URL will be available in early September 06.

14.2 International Students

The University provides special facilities and support for overseas students. See the [international students' website](#) for full details.

The [International Society](#) provides a meeting point for overseas students, provides support and advice and also organises many activities, including welcome activities in the first few weeks of the academic year. See their website for more details.

Each year, there is a range of welcome activities and orientation courses for overseas students on your arrival. See both the [University welcome page](#) and the [International Society welcome page](#).

The [University of Manchester Language Centre](#) provides a range of courses for those who wish to acquire the English language, from beginners' courses, through to advanced courses, and specialist and technical courses.

Confirmation of registration

If you are an international student, please note that if you require a letter for your visa application, visa extension or your sponsor confirming that you are registered in this School, you must provide *one week's notice* of this request to the Student Support Office.

15 University Learning Resources

With over 3.5 million books, some 7,000 current periodical subscriptions and a wide range of electronic resources, the [John Rylands University Library](#) is one of the largest academic libraries in the UK.

Admission to the library, which is located at the end of Burlington Street, is controlled by turnstiles operated using your University swipe card, which also serves as your library card. The computer catalogue of the library provides details of the books and periodicals available and can be used to reserve and renew books. It can be accessed using dedicated terminals distributed throughout the library and through the library's website (<http://www.library.manchester.ac.uk>). Graduate students may borrow 12 books plus additional books from a short loan collection which contains duplicate copies of books in heavy demand. The majority of periodicals are restricted to the library to ensure ready availability. Any material that is not available in the library may be ordered through the document supply unit. The main information desk is at the top of the escalator where staff will be pleased to help you to make best use of the library and the computing facilities. Additional information desks are distributed throughout the library together with self-service photocopiers. A range of guides is available including a general library guide, bookmark guides, which contain basic information specific to individual subjects and a series of general guides which cover various library services and facilities. In addition, a series of information sources guides, which describe the printed and electronic information sources relevant to particular subjects are available, together with leaflets describing the content and use of particular electronic databases.

Nearly 200 electronic services, including the main scientific, engineering, biological and medical databases, are available through a library web-based service called Rybase. About 250 computers in the library can be used to access these services and the other resources available through the University network, including word-processing and other software, e-mail and the internet. The electronic databases provided by the library may also be accessed from elsewhere on the University network. The library website provides information and news about the library and its services, access to the library catalogue and links to electronic publications and the catalogues of other libraries. A section on navigating the internet provides access to internet subject guides and links to a wide range of information resources and internet search tools. Each year sessions are arranged to introduce new students to the library and the information resources that are available.

A training suite in the library is used to provide hands-on training in the use of electronic databases. These sessions are normally arranged by programme directors; however, library subject specialists can provide additional tours and training as required. If you need any help or information about the library, its resources and services please do not hesitate to contact 275 3738.

16 Health and Safety

Health and Safety General Induction Document: 2006

16.1 Introduction

This document, which should be provided on arrival in the School of Computer Science to each new staff member (by an appropriate manager) and to each postgraduate students (by the Student Support Office), is intended only as a summary of the major Health and Safety issues of which all staff and students should be aware.

The full School Health and Safety Policy Document is available for consultation on the School website at <http://www.cs.manchester.ac.uk/csonly/committees/Health/HealthPolicy2006.htm> and on appropriate notice boards around the School.

This document provides summary information about the following topics:

- Emergencies
- VDU Usage
- Electrical Safety
- First Aid
- Out of Hours Working
- Lone Working
- COSHH
- General Advice

16.2 Emergencies

16.2.1 Emergency Evacuation

The Fire Alarm in both the Kilburn and IT Buildings is a 2-stage system:

- Stage 1 Intermittent – prepare to leave
- Stage 2 Continuous – leave immediately by nearest emergency exit

If a call point is activated, the alarm goes straight to continuous.

Lifts must not be used when the fire alarm is sounding.

Out of hours the building should be evacuated on the intermittent alarm.

Familiarise yourself with the location of emergency exit points and fire alarm call points. In the event of an evacuation proceed to the Emergency Assembly Points which are as follows:

- IT Building – Grassed area on North Side of building behind Chaplaincy
- Kilburn Building - 1st Floor Precinct Centre or Ground Floor beyond Chaplaincy steps

16.2.2 Fire Alarm Testing

The Fire Alarms are tested as follows:

- Kilburn Building – Wednesday at 14.00 hours
- IT Building – Thursday at 14.00 hours

The test should last approx 15 seconds and no action is required during this period. If the test extends beyond 30 seconds you should assume it is an emergency situation and evacuate the building.

16.2.3 If you discover a fire

Set off the fire alarm by pressing the nearest call point. Then leave the building by the nearest emergency exit and report in person to the Kilburn Building shift porters' lodge on Wilton Street (Loading Bay).

Health and Safety General Induction Document: 2006

16.2.4 Fire Extinguisher Policy

Only people trained in the use of extinguishers should attempt to extinguish a fire. Incorrect use of an extinguisher can make the situation worse.

16.2.5 Evacuation Chairs

Evacuation chairs are available at specific locations for the evacuation of the disabled. Disabled persons should wait in the refuge areas and await trained personnel to use the chairs.

16.2.6 Evacuation Wardens

A number of staff have been trained as evacuation wardens. If they are in their location, they will check that offices are vacated and if anyone is waiting at a refuge point.

16.2.7 What to do in event of bomb threat

- Take seriously any information you receive about a bomb.
- If the information is given in a telephone call:
 - Let the caller finish the message without interruption.
 - Write down the message exactly as spoken.
 - Note the time.
 - Ask the following questions, if possible:
 1. Where is the bomb located?

2. What time is it due to explode?

- Try to remember as much as possible about the caller's sex, age, accent, and state of mind.
- Notify, by telephone, all the following:
 - the Main Security Office (Tel: 52728/69966)
 - the School Porters' Lodges (Tel: 56262, 56263)
 - the School Safety Advisor (Tel: 56179) and
 - the Head of School's Office (Tel: 56154).

16.3 VDU use

All staff and PhD students are required to have a workstation assessment on arrival in the School.

Contact Susan House (Tel: 56151) to arrange to have this carried out.

The following equipment is provided or is available if required

- Adjustable Chair
- Monitor Stand
- Foot rest
- Wrist rest
- Document Holder

16.4 Electrical Safety

All electrical equipment in the School is regularly tested.

- Portable equipment is tested by the technicians and has a label attached.
- Fixed electrical equipment is tested by the University Estates Department.

16.4.1 Use of Personal Mains Electrical Equipment

You are permitted to use some personal mains-operated electrical equipment, provided that:

- You take it to Frank Pickard, Steve Rhodes or Chris Connolly who will test it before you are permitted to use it. No personal mains-operated electrical equipment may be connected to the mains supply until it has been tested and shown to be safe.
- You arrange for it to be re-tested annually – or more frequently if that is specified by the person carrying out the test.

Equipment that has failed an electrical test must not be used under any circumstances.

Microwaves are tested for radiation leakage by the University and are located in Kitchen areas only.

Microwaves must NOT be located in offices or other areas.

Fridges brought into the School must be registered with the Environs Office and their location must be agreed. Disposal of fridges costs money and that charge must be met by the person or group who brings the fridge into the School.

Electrical equipment must only be dismantled by a competent qualified person and after reassembly, must be re-tested as above.

16.5 First Aid

The names of people who are qualified to administer First Aid are listed on notices around the School.

These notices also explain what action to take in the event of an accident or medical emergency.

Familiarise yourself with the procedures.

The people in the School who are qualified to administer First Aid are:

- Bob Holmes Kilburn Building, room KB 2.86: Tel: 56212.
- Susannah Hildreth Kilburn Building, room KB 2.3: Tel: 57520

Out of hours, or if neither Bob Holmes or Susannah Hildreth is available, contact Security on 52728 or 69966.

16.6 Out of Hours Working

Out of hours is defined as before 08.00 and after 18.00 Monday to Friday, plus all day at weekends and bank holidays.

It is important that all persons remaining in the building out of hours or entering the building out of hours sign in at the Shift Porters' lodge (Loading Bay). This is required in order that, in the event of an emergency, the emergency services know who is in the building.

If you see anything or anyone suspicious notify the Shift Porters on 56262.

All opening windows in the IT building should be shut out of hours.

On no account may work be done out of hours using cryogenic material. No test work on live electrical equipment may be done out of hours nor may any machines in the Mechanical Workshop be operated out of hours.

16.7 Lone Working

Lone working should only be carried out in areas and on activities where it is safe to do so.

Lone working is acceptable, for example, in the Nanotechnology Laboratory area which is covered using closed-circuit cameras.

If it is necessary to carry out lone working in an environment other than in a normal office, you should get the permission of your manager and of the Environment Manager. You should arrange to be monitored at regular intervals

16.8 COSHH

Chemicals and other substances hazardous to health must not be brought into the School for personal or other use.

All such substances used within the School must have associated COSHH sheets provided by the manufacturer or supplier of the substance.

COSHH sheets are held by Russell Arundale in the Mechanical Workshop and by Ian Stutt in the Nanotechnology area.

16.9 Cryogenic Material

All personnel must be suitably trained before using cryogenic material.

All work using cryogenic material must be carried out in accordance with the University code of practice and guidance note for the storage and handling of cryogenic material. See:

http://www.campus.manchester.ac.uk/healthandsafety/CoPs&Guidance/Cryogenic_materials.doc

Cryogenic material must not be used out of hours. If lone working is necessary it must be monitored by a person trained in the use of cryogenic material.

16.10 General

The following general points should be noted:

- Corridors and escape routes must not be obstructed by rubbish, furniture or bicycles.
- Recycling:
 - Boxes are provided for recycling plastic bottles and cups and for general waste paper
 - Blue bags should be used only for recycled paper.
 3. All paper in blue bags is treated as confidential.
 4. Blue bags should never be more than half full and should have a maximum weight of 10kg.
 5. Blue bags should be left INSIDE locked offices alongside the normal waste bin. They will be collected by the Building Attendants
 6. Blue bags should never be placed in corridors.
 - If you have problems with building services e.g., with heating, cooling, floors, ceilings, furniture, doors, locks, toilets, lights and electrical faults, send an e-mail to environs@cs.man.ac.uk In an emergency during normal working hours, telephone 00632 (Environment Manager) or 00633 (Assistant Environment Manager) or 00515 (Deputy Building Superintendent).
 - For problems with computers, e-mail dutyoffice@cs.man.ac.uk
 - For problems with AV equipment or advice on AV equipment phone Dave Bowden on 00634
 - For problems with cleaning or bin recycling, phone Elaine (Deputy Building Superintendent) on 00515 or e-mail environs@cs.man.ac.uk

- For problems with vending machine, e-mail environs@cs.man.ac.uk

17 University Regulations, Procedures and Policies

The university website <http://www.campus.manchester.ac.uk/studentnet/policies/> contains details of university regulations, procedures and policies, including those for work and attendance, for MSc dissertations, for appeals, on plagiarism, etc.

17.1 Ill Health

It is a requirement of your registration with the University of Manchester that you register with a local general practitioner. A list of GP practices can be obtained from the Student Health Service, any University hall of residence or a local Pharmacy. According to guidance issued by the General Medical Council it would not be regarded as good practice for a family member to be the registered GP or to offer treatment except in the case of an emergency.

You should always consult your GP (or for emergencies the Accident and Emergency Department of a hospital) if your illness is severe, if it persists or if you are in any doubt about your health. You should also consult your GP if illness keeps you absent from the University for more than 7 days including week-ends. If you do consult a GP and they consider that you are not fit for attendance at the University, then you should obtain a note from the doctor to that effect or ask them to complete Part III of the University form 'Certification of Student Ill Health' copies of which are available at local GP surgeries and the Student Support Office. You should hand this certificate to your Programme Director or the Student Support Office as appropriate at the earliest opportunity.

If your condition is not sufficiently serious to cause you to seek medical help, then the University will not require you to supply a doctor's medical certificate unless you are absent from the University due to illness for more than 7 days. You *must* however contact the Student Support Office as soon as possible and self-certify your illness (that is complete and sign the 'Certification of Student Ill Health' form to state that you have been ill) as soon as you are able to attend your school. You should do this if your illness means you are absent from the University for any period up to 7 days, or if you are able to attend the University but your illness is affecting your studies.

The following explains what you should do if your illness affects your attendance at compulsory classes or if you consider that your performance in your studies/examinations has been impaired:

If you are unwell and feel unable to attend the University to take a compulsory class, assessment or examination then you *must* seek advice by contacting the Student Support Office immediately, in person, through a friend or family member, by telephone or by email. This is to ensure that you understand the implications of being absent and the consequences for your academic progress, which might be quite serious. *You must do this as soon as possible so that all options can be considered and certainly no later than the day of your compulsory class, assessment or examination.* If you do not do this then you will normally be considered to have been absent from the class without good reason, or to have taken the assessment or examination in which case you will be given a mark of zero. You *must* also complete and hand in a 'Certification of Student Ill Health' form on your return.

You may be unwell but able to proceed with an assessment or examination and yet you feel that your performance will have been impaired. If you wish this to be taken into account as an extenuating circumstance, you *must* inform the Student Support Office about this on the day of the assessment or examination and hand in to the Student Support Office a completed 'Certification of Student Ill Health' form. If you leave this until later it will not normally be possible to take your illness into account when assessing your performance.

If, as a consequence of your illness, you wish to seek an extension to a deadline for submitting assessed coursework, you *must* complete a 'Certification of Student Ill Health' form and discuss it with the Programme Director. The application for extension *must* be made *before* the deadline and not retrospectively.

You may be receiving occasional and ongoing medical attention which affects your studies. If so, you should obtain a letter from your physician which should be given to the Student Support Office before the relevant examination period if you wish your condition to be taken into account as an extenuating circumstance.

Special Circumstances Committee: Evidence of illness during the course or examinations is considered by the School's Postgraduate Special Circumstances Committee, which makes recommendations to the course examiners. It is therefore particularly important that any periods of ill health are properly documented, and that such documentation is deposited with the Postgraduate Office at the time of the illness.

If you wish the Special Circumstances Committee to consider your case you must complete a [Special Circumstances form](#), which is available from the Student Support Office or as a doc file from the web.

Notes

Certification of Student Ill Health forms are available in the Student Support Office, all schools and halls of residence.

Your school will give you guidance on the effect of any absence from your studies or if you consider your illness has affected your studies. If you have repeated episodes of ill health which is affecting your studies, your school may refer you to the Student Health Centre.

If you are found to have been deceitful or dishonest in completing the Certification of Student Ill Health form you could be liable to disciplinary action under the University's General Regulation XVII: Conduct and Discipline of Students
<http://www.staffnet.manchester.ac.uk/documents/display/index.htm?id=101963&off=RegSec->HR>

The use of the 'Certification of Student Ill Health' forms by GPs as described above has been agreed by the Manchester Local Medical Committee. A GP may make a charge for completing the form.

17.2 Student Representation and Feedback

The School and University take seriously both the issues of student representation and that of quality control of the course. Student representatives are elected and will

have the opportunity to bring issues to relevant members of staff, and see that they are dealt with satisfactorily. The Programme Director has overall responsibility for the running of the course, and regular meetings of all students with the Programme Director will be arranged. At other times, the Programme Director is available for any issue to be raised. If a student is not satisfied with the way an issue is dealt with, then the Head of School may be approached, or the complaints procedure invoked.

All course units have course evaluation questionnaires. Students are encouraged to complete these for they are part of the quality assessment. They are processed by the School, they are read by the course unit lecturers and their appraisers, the Programme Director, the external examiners, and others who are concerned with the course quality. Other quality controls are maintained by the Postgraduate Syllabus Overview Committee (which maintains industrial relevance as well as quality), the Faculty, the government Engineering and Physical Science Research Council, and the accreditation bodies.

More information can be found at

<http://www.campus.manchester.ac.uk/tlao/quality/studentrepresentation/>

17.3 Guidance to Students on Plagiarism and Other Forms of Academic Malpractice

<http://www.campus.manchester.ac.uk/studentnet/policies/>

As a student, you are expected to cooperate in the learning process throughout your programme of study by completing assignments of various kinds that are the product of your own study or research. For most students this does not present a problem, but occasionally, whether unwittingly or otherwise, a student may commit what is known as plagiarism or some other form of academic malpractice when carrying out an assignment. This may come about because students have been used to different conventions in their prior educational experience or through general ignorance of what is expected of them.

This guidance is designed to help you understand what we regard as academic malpractice and hence to help you to avoid committing it. You should read it carefully, because academic malpractice is regarded as a serious offence and students found to have committed it will be penalized. At the very least a mark of only 30% would be awarded for the piece of work in question, but it could be worse; you could be awarded zero (with or without loss of credits), fail the whole unit, be demoted to a lower class of degree, or be excluded from the programme.

Academic malpractice includes plagiarism, collusion, fabrication or falsification of results and anything else intended by those committing it to achieve credit that they do not properly deserve. In addition to the advice that follows, your School will give you advice on how to avoid academic malpractice in the context of your discipline. It will also design assessments so as to help you avoid the temptation to commit academic malpractice. Finally, you should take note that work you submit may be screened electronically to check against other material on the web and in other submitted work.

Plagiarism

<http://www.studentnet.manchester.ac.uk/documents/display/index.htm?id=102536&of f=RegSec->AcaReg->SSS->StudentServices>

Plagiarism is presenting the ideas, work or words of other people without proper, clear and unambiguous acknowledgement. It also includes self-plagiarism (which occurs where, for example, you submit work that you have presented for assessment on a previous occasion), and the submission of material from essay banks (even if the authors of such material appear to be giving you permission to use it in this way). Obviously, the most blatant example of plagiarism would be to copy another student's work. Hence it is essential to make clear in your assignments the distinction between:

the ideas and work of other people that you may have quite legitimately exploited and developed, and the ideas or material that you have personally contributed.

To assist you, here are a few important dos and don'ts:

Do get lots of background information on subjects you are writing about to help you form your own view of the subject. The information could be from electronic journals, technical reports, unpublished dissertations, etc. Make a note of the source of every piece of information at the time you record it, even if it is just one sentence.

Don't construct a piece of work by cutting and pasting or copying material written by other people, or by you for any other purpose, into something you are submitting as your own work. Sometimes you may need to quote someone else's exact form of words in order to analyse or criticize them, in which case the quotation must be enclosed in quotation marks to show that it is a direct quote, and it must have the source properly acknowledged at that point. Any omissions from a quotation must be indicated by an ellipsis (...) and any additions for clarity must be enclosed in square brackets, e.g. [These] results suggest ... that the hypothesis is correct. It may also be appropriate to reproduce a diagram from someone else's work, but again the source must be explicitly and fully acknowledged there. However, constructing large chunks of documents from a string of quotes, even if they are acknowledged, is another form of plagiarism.

Do attribute all ideas to their original authors. Written ideas are the product that authors produce. You would not appreciate it if other people passed off your ideas as their own, and that is what plagiarism rules are intended to prevent. A good rule of thumb is that each idea or statement that you write should be attributed to a source unless it is your personal idea or it is common knowledge. (If you are unsure if something is common knowledge, ask other students: if they don't know what you are talking about, then it is not common knowledge!)

As you can see, it is most important that you understand what is expected of you when you prepare and produce assignments and that you always observe proper academic conventions for referencing and acknowledgement, whether working by yourself or as part of a team. In practice, there are a number of acceptable styles of referencing depending, for example, on the particular discipline you are studying, so if you are not certain what is appropriate, ask your tutor or the course unit coordinator for advice! This should ensure that you do not lay yourself open to a charge of plagiarism inadvertently, or through ignorance of what is expected. It is also important to remember that you do not absolve yourself from a charge of plagiarism simply by including a reference to a source in a bibliography that you have included

with your assignment; you should always be scrupulous about indicating precisely where and to what extent you have made use of such a source.

So far, plagiarism has been described as using the words or work of someone else (without proper attribution), but it could also include a close paraphrase of their words, or a minimally adapted version of a computer program, a diagram, a graph, an illustration, etc taken from a variety of sources without proper acknowledgement. These could be lectures, printed material, the Internet or other electronic/AV sources.

Remember: no matter what pressure you may be under to complete an assignment, you should never succumb to the temptation to take a short cut and use someone else's material inappropriately. No amount of mitigating circumstances will get you off the hook, and if you persuade other students to let you copy their work, they risk being disciplined as well (see below).

Collusion

Collusion is any agreement to hide someone else's individual input to collaborative work with the intention of securing a mark higher than either you or another student might deserve. Where proved, it will be subject to penalties similar to those for plagiarism. Similarly, it is also collusion to allow someone to copy your work when you know that they intend to submit it as though it were their own and that will lay both you and the other student open to a charge of academic malpractice.

On the other hand, collaboration is a perfectly legitimate academic activity in which students are required to work in groups as part of their programme of research or in the preparation of projects and similar assignments. If you are asked to carry out such group work and to collaborate in specified activities, it will always be made clear how your individual input to the joint work is to be assessed and graded. Sometimes, for example, all members of a team may receive the same mark for a joint piece of work, whereas on other occasions team members will receive individual marks that reflect their individual input. If it is not clear on what basis your work is to be assessed, to avoid any risk of unwitting collusion you should always ask for clarification before submitting any assignment.

Fabrication or falsification of results

For many students, a major part of their studies involves laboratory or other forms of practical work, and they often find themselves undertaking such activity without close academic supervision. If you are in this situation, you are expected to behave in a responsible manner, as in other aspects of your academic life, and to show proper integrity in the reporting of results or other data. Hence you should ensure that you always document clearly and fully any research programme or survey that you undertake, whether working by yourself or as part of a group. Results or data that you or your group submit must be capable of verification, so that those assessing the work can follow the processes by which you obtained them. Under no circumstances should you seek to present results or data that were not properly obtained and documented as part of your practical learning experience. Otherwise, you lay yourself open to the charge of fabrication or falsification of results.

Finally

If you commit any form of academic malpractice, teaching staff will not be able to assess your individual abilities objectively or accurately. Any short-term gain you might have hoped to achieve will be cancelled out by the loss of proper feedback you might have received, and in the long run such behaviour is likely to damage your overall intellectual development, to say nothing of your self-esteem. You are the one who loses.

17.4 Complaints Procedure

The University has a formal Complaints Procedure. Copies of the procedure and form can be found on the [University's policies webpage](#) under 'Student Complaints Procedure'.

In essence, most complaints can be dealt with quickly and informally. Complaints should be made promptly, orally or in writing, to an appropriate member of staff, such as your Programme Director or tutor. If your complaint is of a general nature it might be best to mention it to your student representative so that he/she can raise it at the relevant school committee. If you are dissatisfied with the response, you should put the complaint in writing to the Head of School, or, if the complaint relates to actions taken by the Head of School, you should write to the Dean of the Faculty concerned. The Head/Dean concerned will investigate the matter and come back to you, normally within 10 working days. If, having pursued the matter informally, you are still dissatisfied you should refer the matter formally and in writing to the University's Registrar and Secretary. You should consult the Complaints Procedure for advice on how a formal complaint should be carried out. If you need help using the procedure or guidance on where to refer your complaint, you can seek advice from any of the following: The Central Academic Advisory Service, the appropriate Faculty or School Secretary, the office of Student Support and Services, or the Students' Union Advice Centre (Students' Union, tel. 275 2930).

The Complaints Procedure does not cover the following:

1. disciplinary issues (for which a separate procedure exists)
2. matters where other separate procedures apply, e.g. harassment, academic appeals relating to examinations or assessments, appeals against exclusion on academic grounds, or against refusal to be issued with a Certificate of Satisfactory Work and Attendance, or Complaints about the Students' Union.

Information on these separate procedures can be obtained from the University's policies webpage.