

**Masters Programmes**

**In**

**The School of Computer Science**

**The University of Manchester**

**Handbook for MSc, Postgraduate Diploma and  
Postgraduate Certificate**

**2008/2009**

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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 expected 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.

Each programme has its own separate structure and regulations which are described in the relevant section of this Handbook.

Although the information contained in this handbook is believed to be correct at the time of going to press, the School reserves the right to make appropriate changes without prior notice; however the School will endeavor to inform students of any substantial changes made affecting the programmes. This disclaimer does not affect any statutory rights which you may have under English law.

## **2. General Information**

### **2.1. Contact Details**

Student Support Office:  
Room LF21, 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: [sso@cs.man.ac.uk](mailto:sso@cs.man.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. Welcome Guide to the School of Computer Science

Welcome to the School of Computer Science. We hope that you will have a productive and happy time here in your postgraduate studies. This section is a brief introductory guide to some of the services, facilities and documents that are available to help you.

### Documents

Programme Handbook: Full of useful details, advice and general information. DO READ IT.

Syllabus: The course unit descriptions for each MSc programme are available at: <http://www.cs.manchester.ac.uk/postgraduate/taught/programmes/>

The full list of all MSc course units and their descriptions is available at: <http://www.cs.manchester.ac.uk/postgraduate/taught/programmes/fulllist/>

Do read the course unit descriptions. They outline what are the aims of each unit, what you will learn, the contents and who should take the unit (including requisite academic background).

ALSO you are strongly recommended to attend the course unit introduction talks in the first week.

### School PG webpages:

Full of all the latest information: All handbooks, syllabi, timetables, specialist advice and guidance. Also, see university website of University support services, regulations, procedures, policies etc.

### Timetables and events:

All on the School PG website.

### Facilities

There are dedicated MSc computing facilities in Room 2.25a. All machines in the MSc lab support Linux and MS Windows. YOU NEED TO KNOW BOTH OF THESE SYSTEMS. There is an introductory Linux lab for those who need to learn a Unix-based system.

### Computer Accounts (School and University)

You have two computer accounts: (1) in the School, e.g. in the MSc labs, and (2) in the University.

Your School account has the following log-in name: Take your family name (truncate to first 7 letters if necessary), follow by your the first letter of your given name. (Occasionally this coincides with someone else and we may use two initials.) Your password is your date of birth, so that 1st Feb 1990 becomes 19900201. Change

your password as soon as you login (eg using `passwd' in Linux). Most machines are `dual-boot' in Linux and Windows.

Your university account is for elsewhere on the campus and uses your university registration.

#### Facilities: Email, Intranet etc

Email in the School: You will have a range of email names (including your login name).

In Linux, type `csinfo <yourname>' to find these details.

You must read your email frequently as there may be important messages from the staff or from the School or University. If you use other (external) email accounts (e.g. gmail or hotmail), you may wish to set up a 'forwarding' to automatically forward mail from your School mail account to your external account. Warning: If your School account becomes over quota, then mail will not be received so you may miss important messages. Always ensure that you clean up your account regularly, deleting large files and junk (especially in your email box and web browser caches).

There is a School Intranet which has a host of useful information about computer facilities and how to manage them, including external logins.

Dutyoffice: Email `dutyoffice' if there is some fault with equipment or with your account. Do not ask dutyoffice questions which are already answered on the Intranet.

### **Induction Events**

See the Induction Period timetable for the packed schedule of events in the first week or two. Do try to attend most of these events as they are important for information and for orientation and also because it is vital that you meet and make friends with staff and other MSc students.

### **Help!**

It is extremely important that if you are having difficulties, whether it is of an academic, personal or university matter, that you seek advice at the earliest possible opportunity. In particular, any matter whatever that affects your work and progress here should be brought to your Programme Director in confidence. We can often help and can always advise on management of work. See the Handbook for more details, and of how to get problems you have encountered taken into account in assessment of your results.

For academic help on particular course units, consult the lecturers on that unit. For more general academic matters consult the Programme Director.

## Procedures and Administration

For forms, procedures etc. go to the Student Support Office in the School on the Lower First Floor.

The School runs an Advice Centre available daily during term-time 1.30-2.00. The University has an excellent Counselling Service with a drop-in centre and quick appointments. There is also help from the Student Union, the Academic Support Services, Legal Services etc: see university website for details.

## International Students

There are many services for international students, and good clubs and societies. See the MSc handbook or websites for details.

### **2.3. Programme Staff**

#### **MSc in Advanced Computer Science**

**Programme Director:** Dr David Rydeheard, Room 2.111, Tel: 275 6164, Email: [der@cs.manchester.ac.uk](mailto:der@cs.manchester.ac.uk)

#### **MSc in Advanced Computer Science and IT Management**

**Programme Director:** Dr Renate Schmidt, Room 2.42, Tel: 275 6163, Email: [schmidt@cs.manchester.ac.uk](mailto:schmidt@cs.manchester.ac.uk)

**Assistant Programme Director:** Dr Nick Filer, Room IT415, Tel: 275 6171, Email: [nfiler@cs.man.ac.uk](mailto:nfiler@cs.man.ac.uk)

#### **MSc in BioHealth Informatics**

**Programme Directors:** Prof Andy Brass, Room 2.87, Tel: 275 5096, Email: [andy.brass@manchester.ac.uk](mailto:andy.brass@manchester.ac.uk)

Dr Georgina Moulton, ISBE, Medical School, Stopford Bld, Tel: 275 1125, Email: [georgina.moulton@manchester.ac.uk](mailto:georgina.moulton@manchester.ac.uk)

#### **MSc in Informatics**

**Programme Director:** Dr Thierry Scheurer, Room Lamb/1.07, Tel: 306 3360, Email: [thierry.scheurer@manchester.ac.uk](mailto:thierry.scheurer@manchester.ac.uk)

#### **MSc in Information Systems Engineering**

**Programme Director:** Dr Nick Filer, Room IT415, Tel: 275 6171, Email: [nfiler@cs.man.ac.uk](mailto:nfiler@cs.man.ac.uk)

## **MSc in Mathematics and Computational Science**

**Programme Director:** Dr Len Freeman, Room IT404, Tel: 275 7190, Email: [lfreeman@cs.manchester.ac.uk](mailto:lfreeman@cs.manchester.ac.uk)

## **MSc in Software Engineering**

**Programme Director:** Dr Thierry Scheurer, Room Lamb/1.07, Tel: 306 3360, Email: [thierry.scheurer@manchester.ac.uk](mailto:thierry.scheurer@manchester.ac.uk)

## **MSc in Low Power Systems Integration**

**Programme Director:** Alex Walker, Room 2.76, Tel: 275 6127, Email: [alexw@cs.manchester.ac.uk](mailto:alexw@cs.manchester.ac.uk)

## **Part-Time Masters, Diplomas and Course Units**

**Programme Director:** Alex Walker, Room 2.76, Tel: 275 6127, Email: [alexw@cs.manchester.ac.uk](mailto:alexw@cs.manchester.ac.uk)

## **2.4. School and Postgraduate Staff**

### **Head of School**

Until end Oct. 2008:

Prof. Chris Taylor, Room 2.125, Tel: 275 55130, Email: [chris.taylor@manchester.ac.uk](mailto:chris.taylor@manchester.ac.uk)

From 1<sup>st</sup> Nov. 2008:

Prof. Norman Paton, Room 2.125, Tel: 275 6910, Email: [norman.paton@manchester.ac.uk](mailto:norman.paton@manchester.ac.uk)

### **Head of Graduate School**

Prof. Roger Hubbard, Room 2.96, Tel: 275 6158, Email: [roger.hubbard@manchester.ac.uk](mailto:roger.hubbard@manchester.ac.uk)

Student Support Office:

**General email address:** [sso@cs.man.ac.uk](mailto:sso@cs.man.ac.uk)

Gill Lester (Student Support Office Manager), Room LF21, Tel: 275 6210, Email: [Gillian.S.Lester@manchester.ac.uk](mailto:Gillian.S.Lester@manchester.ac.uk)

Janet Boyd (Student Support Administrator), Room LF21, Tel: 275 6283, Email: [jboyd@cs.manchester.ac.uk](mailto:jboyd@cs.manchester.ac.uk)

Susannah Hildreth (Postgraduate Secretary), Room LF21, Tel: 275 7520, Email: [Susannah.Hildreth@manchester.ac.uk](mailto:Susannah.Hildreth@manchester.ac.uk)

## **2.5. Position of notice boards, pigeon holes and social space**

The Postgraduate notice board is positioned in the corridor adjacent to the MSc laboratory, Kilburn Building. This is used for displaying pass lists, general information and advice. Pigeon holes for mail are positioned next to the notice board. You are entitled to use the Senior Common Room and make use of the cafeteria there. There is also a study and dining area on the lower first floor.

## **2.6. Learning Resource Centre**

[http://intranet.cs.man.ac.uk/Intranet\\_subweb/library/](http://intranet.cs.man.ac.uk/Intranet_subweb/library/)

The Resource Centre, Room LF21, Kilburn Building, is able to provide School library access, out-of-hours passes and photocopying cards in semester-time during the following sessions:

Mornings 09.30-12.30

Afternoons 13.30-15.30

During vacation periods there will be afternoon cover only.

### **Coursework submission**

Coursework which requires hard-copy submission must be posted into the relevant pigeonhole in LF21, having first completed and attached the coursework submission form to the front of your work. If no specific label for the course unit is visible, please inform someone in the Student Support Office immediately. Do not post coursework into an unmarked pigeonhole, as such work will automatically be given zero marks.

### **Photocopying**

Photocopy facilities are available in the Resource Centre. Photocopy cards may be purchased at a cost of £3 per 100 copies.

### **Resources**

Reference copies of textbooks are available for consultation. The Resource Centre holds short loan copies of postgraduate textbooks. Lending copies of textbooks are available in the John Rylands University Library.

Resources for individual course units are often available on the website for the course unit.

### **Printing**

As an MSc student, you will be given an annual allowance for computer printout in the School for coursework printing, which may be revised year-on-year. When your allowance is exhausted, you may purchase additional printing from the Resource Centre in LF21 at a cost of £5 per 100 sheets (minimum purchase £1 for 20 sheets).

The printing quota is 550 pages per annum.

Please note that all problems relating to printers or computers in the labs should be reported by email directly to [dutyoffice@cs.man.ac.uk](mailto:dutyoffice@cs.man.ac.uk) If you are unable to log on to your computer account, please ring the Duty Office on 56244 from the internal phone located in the Resource Centre.

### 3. Key dates in the academic year and timetable for the programmes for 2008/09

Period/Event	Dates
Induction period	22 September - 26 September
Deadline for Course Unit Registration	26 September
Semester 1 Period 1 course units	29 September – 31 October
Deadline for Semester 1 Period 2 course unit changes	10 October
Coursework Completion Week 1	3 November – 7 November
Semester 1 Period 2 course units	10 November – 12 December
Deadline for Semester 2 Period 3 & 4 course unit changes	10 December
Coursework Completion Week 2	15 December – 19 December
Semester 1 Periods 1 & 2 examinations	January 2009 (exact dates to be confirmed)
Semester 2 Period 3 course units	2 February – 6 March
Deadline for submission of MSc project preferences	December/January (exact date to be confirmed)
Coursework Completion Week 3	9 March – 13 March
Semester 2 Period 4 course units	16 March – 8 May
Coursework Completion Week 4	11 May – 15 May
Semester 2 Periods 3 & 4 examinations	End of May – Beginning of 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/postgraduate/taught/timetable/index.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 and part of Semester 2 is dedicated to the project.

The **induction period** runs in the first week and introduces you to the programme, the School, the Faculty and the University. We also provide introductory lectures for some of the taught course units. You 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. If you cannot join the programme in week 1, the onus is on you to contact the School and catch up on any information missed.

After the introductory week the **taught course units** begin. For many programmes you will take four of these before Christmas (Semester 1), and these will be examined in mid-January. You will then take a further 2 course units in Semester 2 (one in each period) which are examined in the Summer. The choice of these course units is subject to the degree requirements described under **Course Units (Section 6.2)**.

The Research Project with the Research Skills and Professional Issues course unit runs in Semester 1 and Semester 2. At the end of this period you will submit a Project Background Report which will be assessed in order for you to progress to the remainder of the project work and dissertation submission. The project is chosen at the end of Semester 1. 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 practise and extend your programming skills. Work on the project can begin any time after it has been assigned. You work full-time on the project after Semester 2's taught courses and the Project Background Report. It is to be completed and a dissertation submitted by the deadline in early September. In order to be allowed to start the project, you must pass the assessment for the taught course units together with the Project Background Report. 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 June 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, which makes 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**

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, for the course units. For some programmes, there are a large number of course units on offer. Students are encouraged to attend these introductions to the course units in order to choose the appropriate units, 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 events, including the Societies Fair, where you may choose from an enormous list of activities, from Fencing to Mountaineering, from Dance to Films, Chess to Bellringing, 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 University's International Office: <http://www.manchester.ac.uk/international>

### **6.2. Course Units**

Many of the MSc course units are taught in a one-day-a-week format over 4 periods (2 in each Semester). Some course units are taught in half-days over a longer period.

For those in a one-day-a-week format, the teaching period is divided into 4 periods of 5 weeks each; 2 periods in each Semester. At the end of each period is a coursework completion week to enable you to complete the coursework for the preceding period. Examinations take place twice a year at the end of each Semester. Each course unit is allocated a day a week in a particular period – see the timetable for details. These 5 days are the taught days of the course unit and will typically consist of a mix of activities including lectures, supervised practical work, seminars, discussions etc. In addition, the course units have coursework to be taken outside these taught days, amounting to one and a half days per week for each course unit. There is a coursework completion week at the end of each period. Some or all of the coursework is likely to be assessed. Deadlines for assessed work will be set in individual course units. For units taught in half-days per week format, arrangements are similar but these units extend over a full semester.

Course units are worth 15 credits each and you need to take 6 taught course units for an MSc and the 30 credit Research Skills and Professional Issues course unit.

Where there is a choice of course units you are strongly advised to spread the load evenly throughout the taught period, taking into account the Research and Professional Skills course unit and your Research Project. For example, for the MSc in Advanced Computer Science you should take 4 course units in the first Semester (two in each period) and 2 in the second Semester (one 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 to your best advantage. 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 course units in the Induction Period at the beginning of the academic year. The course units available are listed in the Computer Science Masters [Syllabus](#).

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. Some course units will have a restriction on the number of students who may attend for various reasons (e.g. licenses, facilities etc) and these may become fully subscribed. Course units with very few students may be cancelled but we try to avoid this.

**Course unit selection.** Registration of the course units should be completed by the end of the first week. A course unit selection guide can be found at: [http://intranet.cs.man.ac.uk/Intranet\\_subweb/Postgrad/courseunitselection.php](http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/courseunitselection.php) The deadlines for changes to course unit selections are listed in the 'Key dates' at section 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 (COMP60990)**

This course unit runs in the second part of Semester 1, and through Semester 2. Part of the course unit provides training in research skills and an orientation towards the practice of research as well as talks from research scientists and the initial work on your research project. 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 The British Computer Society (the professional body for IT professionals in the UK).

This course unit has two aims:

1. Training in Research Skills and initial work on the Research Project. This will give you a grounding in various aspects of research and project management, including advice on research methods, managing projects, working with your supervisor, professional research writing and preparing your dissertation/reports. You will also begin preliminary work on your project including background reading, familiarising yourself with the topic, other work in the area, any relevant software or other systems, and project planning. You will write a report (or 2 reports in the case of a group project) of this preliminary work which will be submitted towards the end of Semester 2.
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.

The assessment for this course unit is the Project Report, which must be submitted by the deadline. Failure to submit by the deadline without permission may incur a mark penalty or submission may be disallowed. You must be awarded a pass mark at the 50% level for this report and pass the taught part of the programme in order for you to go on to complete your project and the award of an MSc. If this report has a mark of 40% or above, but below 50%, the student exits the programme with a Postgraduate Diploma, providing the marks from the taught part are sufficient.

## **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.

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.

#### **7.1.1. 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: COMP60021, COMP60032, COMP60041, COMP60051, COMP60081, COMP60092, COMP60012, COMP60242.

2. Formal Methods

Core: COMP60112, COMP60121, COMP60161, COMP60462.

3. Software Engineering

Core: COMP60021, COMP60161, COMP60321, COMP60361, COMP60372, COMP60391, COMP67032, COMP67055, BMAN60112, BMAN61051, BMAN61102.

4. Advanced Applications

Core: COMP60021, COMP60302, COMP60311, COMP60321, COMP60361, COMP60372, COMP60391, COMP60442, COMP60462, COMP67032, COMP67052, BMAN61102.

5. Artificial Intelligence

Core: COMP60121, COMP60161, COMP60372, COMP60431, COMP60442, COMP60462, BMAN61102.

**7.1.2. Advanced Computer Science Programme Specification**

[http://intranet.cs.man.ac.uk/Intranet\\_subweb/Postgrad/ACS-CS/webpages/handbook/programme\\_specs\\_all\\_msc.php](http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php)

**7.2. MSc in Advanced Computer Science and IT 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.

### 7.2.1. Core Course Units for ACS and IT 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
- BMAN60112: IT Systems and Strategy
- BMAN61102: Decision Analysis and Decision Support Systems

Category 2 (minimum of 1 from this group)

- COMP60752: Patterns for eBusiness Applications
- COMP60361: Advanced Database Management Systems
- COMP60391: Computer Security
- BMAN71621: IT Leadership Forum
- MSEC40001: Entrepreneurial Commercialisation of Knowledge

All course units are 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.

### 7.2.2. Advanced Computer Science and IT Management Programme Specification

[http://intranet.cs.man.ac.uk/Intranet\\_subweb/Postgrad/ACS-CS/webpages/handbook/programme\\_specs\\_all\\_msc.php](http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php)

### 7.3. MSc in BioHealth Informatics

BioHealth Informatics is a rapidly developing multi-disciplinary field that combines biological and genetic information with clinical data and computer information systems. It has been driven by the realisation that bio-informatics and health informatics must achieve a merger of standards, computer systems and data representations if progress is to continue towards the vision of post-genomic medicine.

The MSc in BioHealth Informatics 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 BioHealth Informatics 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.

#### Programme Structure for BioHealth Informatics

Programme Structure	Credits
<u>Compulsory Core Units</u> (All Students, All Pathways And Awards)	45 Total
BIOL61061 Introduction to Bioinformatics (eLearning unit)	15
MEDN70991 Introduction to Health Informatics (direct taught unit)	15 15
COMP60302 Introduction to BioHealth Informatics (direct taught unit)	
<u>Compulsory Core Units</u> (MSc Award Only)	
COMP60990 Research Skills and Professional Issues	30
<u>Compulsory Units</u> (All students, All Pathways And Awards depending on prior skills)	Maximum 15

MEDN60051 Introduction to Human Biology All students with zero or weak previous biology qualifications	15
MEDN70001 JAVA1 All students with zero or weak previous computing qualification or expertise	15
<u>Optional Modules</u> (All Students, All Pathways And Awards)	30 or 45

### 7.3.1 BioHealth Informatics Programme Specification

[http://intranet.cs.man.ac.uk/Intranet\\_subweb/Postgrad/ACS-CS/webpages/handbook/programme\\_specs\\_all\\_msc.php](http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php)

## 7.4. MSc in Informatics

### General Information

Award	Programme Title	Duration	Mode of study
MSc	Informatics	1 year	Full time
PG Diploma	Informatics	9 months	Full time (exit award only)
PG certificate	Informatics	9 months	Full time (exit award only)

The MSc programme aims to:

- (1) Provide students who may have little formal training in the development of software systems with a comprehensive understanding of the principles of software design, development and maintenance
- (2) Provide students with the practical skills required for proposing, designing and evaluating software solutions in a range of practical settings
- (3) Ensure that students have an appreciation of the social, economic and legal issues relating to the deployment of software systems
- (4) Develop students' research skills to the level required to pursue further research studies or equivalent activities in research organisations

The aims of the Diploma programme are items (1) to (3) of the above list.

The aims of the Certificate programme are items (1) to (2) of the above list.

**The Structure of the Programme:**

<b>Programme Structure</b>	<b>Credits</b>
<b>MSc total credits</b>	<b>180</b>
<b>MSc Compulsory</b>	<b>165</b>
COMP67321 Systems Design and Databases	15
COMP67021 High-Level Programming	15
COMP67011 Foundations of Computing	15
COMP60990 Research Skills and Professional Issues	30
BMAN71642 Human Computer Interaction and Web User Interfaces	15
COMP67032 Building Web Applications	15
<b>MSc Optional - one from the following four options:</b>	<b>15</b>
COMP60112 System Construction Using B	15
COMP67052 Patterns for E-Business Applications	15
COMP60242 Mobile Computing	15
COMP60462 The Semantic Web: Ontologies and OWL	15
<b>Dissertation</b>	<b>60</b>

<b>Diploma total credits</b>	<b>120</b>
<b>Diploma Compulsory</b>	<b>105</b>
COMP67321 Systems Design and Databases	15
COMP67021 High Level Programming	15
COMP67011 Foundations of Computing	15
COMP60990 Research Skills and Professional Issues	30

BMAN71642 Human Computer Interaction and Web User Interfaces	15
COMP67032 Building Web Applications	15
<b>Diploma Optional - one from the following four options:</b>	<b>15</b>
COMP60112 System Construction Using B	15
COMP67052 Patterns for E-Business Applications	15
COMP60242 Mobile Computing	15
COMP60462 The Semantic Web: Ontologies and OWL	15

<b>Certificate total credits from the following:</b>	<b>60</b>
COMP67321 Systems Design and Databases	15
COMP67021 High Level Programming	15
COMP67011 Foundations of Computing	15
COMP60990 Research Skills and Professional Issues	30
BMAN71642 Human Computer Interaction and Web User Interfaces	15
COMP67032 Building Web Applications	15
COMP60112 System Construction Using B	15
COMP67052 Patterns for E-Business Applications	15
COMP60242 Mobile Computing	15
COMP60462 The Semantic Web: Ontologies and OWL	15

#### 7.4.1. Informatics Programme Specification

[http://www.cs.manchester.ac.uk/Study\\_subweb/Postgrad/ACS-CS/webpages/handbook/programme\\_specs\\_all\\_msc.php](http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php)

## 7.5. MSc in Information Systems Engineering

### General Information

Award	Programme Title	Duration	Mode of study
MSc	Information Systems Engineering	1 year	Full time
PG Diploma	Information Systems Engineering	9 months	Full time (exit award only)
PG certificate	Information Systems Engineering	9 months	Full time (exit award only)

The MSc programme aims to:

- (1) Equip students with a comprehensive understanding of the issues involved in the construction of large information systems for enterprises of all types in the private and the public sectors
- (2) Provide students with a rigorous understanding of the key stages of the software life cycle, i.e. requirements capture, specification, design, implementation, deployment in the organisation, maintenance and evolution over the life time of the system
- (3) Ensure that students have an appreciation of the social, economic and legal issues relating to the deployment of software systems
- (4) Develop students' research skills to the level required to pursue further research studies or equivalent activities in research organisations

The aims of the Diploma programme are items (1) to (3) of the above list.

The aims of the Certificate programme are items (1) to (2) of the above list.

### The Structure of the Programme:

Programme Structure	Credits
<b>MSc total credits</b>	<b>180</b>
<b>MSc Compulsory</b>	<b>75</b>
COMP67311 IT Leadership Forum	15

BMAN71631 Distributed Systems and Internet Technology	15
BMAN60111 IS Strategy and Enterprise Systems	15
COMP60990 Research Skills and Professional Issues	30
<b>MSc Optional - three from the following six options:</b>	<b>45</b>
COMP60361 Advanced Database Management Systems	15
BMAN71701 E-Business	15
COMP67032 Building Web Applications	15
COMP67052 Patterns for E-Business Applications	15
BMAN71652 Information and Knowledge Management	15
COMP60372 Semi-structured Data and the Web	15
<b>Dissertation</b>	<b>60</b>

<b>Diploma total credits</b>	<b>120</b>
<b>Diploma Compulsory</b>	<b>75</b>
COMP67311 IT Leadership Forum	15
BMAN71631 Distributed Systems and Internet Technology	15
BMAN60111 IS Strategy and Enterprise Systems	15
COMP60990 Research Skills and Professional Issues	30
<b>Diploma Optional - three from the following six options:</b>	<b>45</b>
COMP60361 Advanced Database Management Systems	15
BMAN71701 E-Business	15
COMP67032 Building Web Applications	15
COMP67052 Patterns for E-Business Applications	15
BMAN71652 Information and Knowledge Management	15
COMP60372 Semi-structured Data and the Web	15

<b>Certificate total credits from the following:</b>	<b>60</b>
COMP67311 IT Leadership Forum	15
BMAN71631 Distributed Systems and Internet Technology	15
BMAN60111 IS Strategy and Enterprise Systems	15
COMP60990 Research Skills and Professional Issues	30
COMP60361 Advanced Database Management Systems	15
BMAN71701 E-Business	15
COMP67032 Building Web Applications	15
COMP67052 Patterns for E-Business Applications	15
BMAN71652 Information and Knowledge Management	15
COMP60372 Semi-structured Data and the Web	15

### 7.5.1. Information Systems Engineering Programme Specification

[http://www.cs.manchester.ac.uk/Study\\_subweb/Postgrad/ACS-CS/webpages/handbook/programme\\_specs\\_all\\_msc.php](http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php)

### 7.6. MSc in Mathematics and Computational Science

The MSc in Mathematics and Computational Science 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 modelling 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.

This Programme has special regulations which are in a separate handbook.

## 7.7. MSc in Software Engineering

### General Information

Award	Programme Title	Duration	Mode of study
MSc	Software Engineering	1 year	Full time
PG Diploma	Software Engineering	9 months	Full time (exit award only)
PG certificate	Software Engineering	9 months	Full time (exit award only)

The MSc programme aims to:

- (1) Equip students with a comprehensive knowledge of systematic and rigorous methodology of planning, analysis, design, development, implementation and evaluation of software systems in general
- (2) Provide students with the practical skills required for applying this knowledge to the development of software for data-intensive applications, typically large distributed database systems, and for applications where reliability is crucial
- (3) Ensure that students have an appreciation of the social, economic and legal issues relating to the deployment of software systems
- (4) Develop students' research skills to the level required to pursue further research studies or equivalent activities in research organisations

The aims of the Diploma programme are items (1) to (3) of the above list.

The aims of the Certificate programme are items (1) to (2) of the above list.

### Structure of the Programme

Programme Structure	Credits
<b>MSc total credits</b>	<b>180</b>
<b>MSc Compulsory</b>	<b>90</b>
COMP67311 IT Leadership Forum	15
BMAN70391 Managing Projects	15
COMP60391 Computer Security	15

COMP60990 Research Skills and Professional Issues	30
COMP67032 Building Web Applications	15
<b>MSc Optional - two from the following seven options:</b>	<b>30</b>
COMP60161 Knowledge Representation and Reasoning	15
COMP60112 System Construction using B	15
COMP67052 Patterns for E-Business Applications	15
COMP60372 Semi-structured Data and the Web	15
COMP60242 Mobile Computing	15
COMP60462 The Semantic Web: Ontologies and OWL	15
BMAN72162 Managing Business IT Projects	15
<b>Dissertation</b>	<b>60</b>

<b>Diploma total credits</b>	<b>120</b>
<b>Diploma Compulsory</b>	<b>90</b>
COMP67311 IT Leadership Forum	15
BMAN70391 Managing Projects	15
COMP60391 Computer Security	15
COMP60990 Research Skills and Professional Issues	30
COMP67032 Building Web Applications	15
<b>Diploma Optional - two from the following seven options:</b>	<b>30</b>
COMP60161 Knowledge Representation and Reasoning	15
COMP60112 System Construction using B	15
COMP67052 Patterns for E-Business Applications	15
COMP60372 Semi-structured Data and the Web	15

COMP60242 Mobile Computing	15
COMP60462 The Semantic Web: Ontologies and OWL	15
BMAN72162 Managing Business IT Projects	15

<b>Certificate total credits from the following:</b>	<b>60</b>
COMP67311 IT Leadership Forum	15
BMAN70391 Managing Projects	15
COMP60391 Computer Security	15
COMP60990 Research Skills and Professional Issues	30
COMP67032 Building Web Applications	15
COMP60161 Knowledge Representation and Reasoning	15
COMP60112 System Construction using B	15
COMP67052 Patterns for E-Business Applications	15
COMP60372 Semi-structured Data and the Web	15
COMP60242 Mobile Computing	15
COMP60462 The Semantic Web: Ontologies and OWL	15
BMAN72162 Managing Business IT Projects	15

### 7.7.1. Software Engineering Programme Specification

[http://www.cs.manchester.ac.uk/Study\\_subweb/Postgrad/ACS-CS/webpages/handbook/programme\\_specs\\_all\\_msc.php](http://www.cs.manchester.ac.uk/Study_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php)

### 7.8. 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 Systems Integration programme. The strategic importance of system integration in the

electronics industry is widely recognised.

The MSc in Low Power Systems 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 Systems 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. Workpackages 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](#)

### **7.8.1. Low Power Systems Integration (CEESI) Programme Specification**

[http://intranet.cs.man.ac.uk/Intranet\\_subweb/Postgrad/ACS-CS/webpages/handbook/programme\\_specs\\_all\\_msc.php](http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/ACS-CS/webpages/handbook/programme_specs_all_msc.php)

### **7.9. Notes for Part-Time Students**

The induction course unit is not compulsory for part-time students. However, this unit consists 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 Route**

MSc Foundation Routes 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.

If you wish to enter by Foundation Routes, 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. A typical length is 60-100 pages. Although most projects involve students working individually, some may involve pairs or groups of students working on different aspects of a larger project. There are separate regulations for group projects and the format of group project dissertations.

**Project allocations** are made towards the end of the first Semester, satisfying individual preferences wherever possible. An announcement about this procedure will be made in the latter half of the first Semester.

You start working on your **MSc Project** at the beginning of Semester 2 as part of the COMP60990 course unit. By the end of Semester 2 you need to submit the **Project Background Report(s)**.

You should read the **Guide to MSc Projects (Section 12)** in this Handbook early in the first Semester.

**Dissertation submission deadlines.** The normal deadline for submission of MSc dissertations/reports is at the beginning of the second week of September and you must complete it by then. The only exception to this deadline are significant mitigating circumstances, approved, in advance. Approval must be sought via your supervisor or 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.

**Group Projects.** Group projects, where several students co-operate on a project are possible and special assessment methods and regulations are provided.

**Notes for the MSc in Advanced Computer Science and IT Management** - The projects typically undertaken by students on the ACS+ITM 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 IT 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](#)

### **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.

## 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.

Please refer to **Section 11** for important coursework issues pertaining to different types of coursework and plagiarism.

### Discipline and conduct

The University's policy on student 'Discipline and Conduct' is also available on the [policies webpage](#)

### Examinations

The examinations usually consist of a two-hour paper for those course units with examinations. The examinations take place at the end of each Semester. Past examination papers are available via the School's information page for MSc students.

Some examinations may be "Open Book", in which case material may be taken into the examination room. Sometimes this material will be prescribed. Most examinations however are not of this form and no supporting material may be taken into the examination room.

**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.

## 10.3. Pass Rules

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 (and group and individual reports 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 and the COMP60990 unit. The award of an MSc is then dependent upon passing the assessment of the project.

## 10.4. Assessment regulations for the following programmes are given below.

- MSc in Advanced Computer Science
- MSc in Advanced Computer Science and IT Management
- MSc in BioHealth Informatics

Including Diplomas and PG Certificates in the above.

#### **10.4.1. Taught Course Units**

Each student will be assessed on 90 credits' worth of coursework and/or 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. 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/tlao/pgt-regulations-june2007.doc>

#### **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%. For a pass at diploma or certificate level, an overall mark for the course unit of 40% is sufficient.

A candidate is required for the MSc degree to register for 90 credits' worth of taught course units, and will normally be considered as passing the units if all course units have been passed at **50% or more**.

The failed course units can be re-sat once and the maximum mark to be awarded for re-submitted coursework or re-taken examination will normally be 50%.

#### **Compensated pass:**

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.

#### **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.

## 10.4.2. Pass rules for Postgraduate Diploma and Certificate

### Postgraduate Diploma

The University regulations are at:

<http://www.campus.manchester.ac.uk/medialibrary/tlao/pgt-regulations-june2007.doc>

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 all course units have been passed at 40% or more.

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.

The maximum allowable accumulative failure at Postgraduate Diploma level at first attempt is 45 credits of the taught component of the programme. These failed course units can be re-sat at Postgraduate Diploma level. The maximum mark to be awarded for re-submitted coursework or re-taken examination will normally be 40%.

In addition, for the Diploma, students are required to successfully complete the Project Background Assessment and achieve a mark of 40% or more.

### Postgraduate Certificate

The University regulations are at:

<http://www.campus.manchester.ac.uk/medialibrary/tlao/pgt-regulations-june2007.doc>

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.

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.

## 10.4.3. MSc Project

The MSc Project comprises two parts:

- Part 1 – Background research, specification, design studies (February to May/June)  
Assessment: Project Background Report
- Part 2 – Completion of MSc project (June to early September)  
Assessment: Dissertation (and Group Report for group projects) (60 credits)

#### **10.4.4. Project Background Report (COMP60990)**

The assessment for COMP60990 (Research Skills and Professional Issues) is through the Project Background Report in the case of an individual MSc Research Project, and a group report and individual report in case of a group based MSc Research Project. The precise content of the report depends upon the nature of the Research Project, but typically will include (1) Description of the project and its context and aims, (2) Survey of relevant literature, (3) Study of relevant research methods, design methodology, and implementation tools, (4) Requirements and specification, (5) Criteria of success, and (6) Project plan for overall project.

The report(s) will be assessed according to the standards expected of the Masters Dissertation with respect to substance, soundness of contents, and quality of presentation. The report is/are assessed in the same way. The supervisor and a second marker make independent assessments. The individual MSc Dissertation, and group report are assessed internally, see **Section 10.3** below.

The report(s) contribute(s) 30 credits to the MSc. The report(s) is/are assessed and, in order to be allowed to complete the Research Project and gain an MSc the report(s) must pass at the 50% level. If the report(s) receive(s) marks of 40% or above, but below 50%, the student exits the programme with a Postgraduate Diploma. No resit of COMP60990 is allowed, except where mitigating circumstances have been approved.

#### **10.4.5. Research Project and Dissertation**

##### **Individual MSc Dissertation**

The general requirements for presentation of an individual dissertation are set out in the University's [Ordinances and Regulations](#). 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 **Plagiarism (Section 17.3)**

##### **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 ownership. Each member of the group will normally get the same group report mark.

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 members 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.

The **MSc Project Mark** is the credit-weighted average of the marks for the Project Background Report (rated 30 credits) and the MSc dissertation, and Group Project Report were applicable (rated 60 credits). A pass for the project is awarded for a project mark of 50% or above.

At the recommendation of the board of examiners, students will normally be allowed one resubmission of a failed dissertation or group project report and this will normally be within four months of the date of the publication of the result. Resubmission will not be allowed if the mark is below 40%.

Students who achieve a MSc project mark 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 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.

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%.

#### **10.4.6. Awards by Credit Accumulation**

As well as the one-year MSc programme, the School offers a MSc, Diploma and a Postgraduate Certificate, 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**.

**Route 1.** 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).

**Route 2.** 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 40%. The selection of these course units must fulfil the same criteria as selection for the MSc programme and the 30 credits COMP60990 Research skills and Professional Issues unit.

The **Postgraduate Certificate** 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 fulfil 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.

#### **10.4.7. MSc with Distinction**

An MSc with Distinction is awardable under the following circumstances:

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.

The examiners award a project 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.

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.

#### **10.4.8. MSc with Merit**

An MSc with Merit is awardable under the following circumstances:

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.

The examiners award a project mark of at least 60%.

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.

#### **10.4.9. 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.

#### **10.4.10. 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 continue with the project until the taught part of the programme has been passed. There is no resit for COMP60990 (see regulations **Section 6.3**). If a candidate satisfies the criteria for a Diploma or Certificate, they may exit with the award of Diploma or Certificate. 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.

## **10.5. Assessment regulations for the following Programmes are given below.**

- MSc in Software Engineering
- MSc in Information Systems Engineering
- MSc in Informatics

Including Diplomas and Postgraduate Certificates in the above.

### **Examination Assessment**

The following assessment rules apply to all students taking an MSc, Diploma or Certificate programme by the examination and dissertation route.

#### Calculation of Overall Average Examination Mark

The overall average examination mark is calculated by averaging the marks of each course unit, weighted by the credit rating of the course unit.

### **Progression and Assessment**

- Regulations for work and attendance are outlined in the University's General Regulations, (<http://www.manchester.ac.uk/medialibrary/governance/generalregulations.pdf>) and in the [University Policy](#)
- Students for the degree of Master, Postgraduate Diploma or Postgraduate Certificate will present themselves for assessment of their progress as required in the programme handbook.
- Students will normally successfully complete the taught component of the Masters degree before they can progress to the dissertation, and must successfully complete the taught component before submission of the dissertation.
- A student who fails to satisfy the Examiners in any assessment of taught units may be permitted to resubmit the assessment or retake the examination on one further occasion, up to a maximum of 45 credits. The student will take this opportunity during the next available University examination period or within a period as published in the programme handbook.
- The maximum mark to be awarded for resubmitted coursework or retaken examination will normally be 50% for the Masters degree and 40% for the Postgraduate Diploma.
- All Masters degrees will have exit points for the award of a Postgraduate Certificate and a Postgraduate Diploma. These will be clearly defined in terms of level of achievement and will correspond to 60 and 120 credits respectively. Students who do not achieve the required pass mark in the

taught element for a Masters degree, but who do achieve the required pass mark for a Postgraduate Diploma or Certificate, may be awarded a Postgraduate Diploma or Certificate, as appropriate, provided they have successfully completed the requisite number of credits.

- Any student who submits a piece of assessed coursework (including the dissertation) after the submission deadline, without being granted an extension, will receive a mark of zero.
- Students may, in exceptional mitigating circumstances, and with prior permission of the Faculty, be allowed to re-take the entire programme subject to all outstanding fees being paid.
- 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 the compensated pass.
- 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.
- 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.
- Programmes may employ stricter compensation rules, as approved by the Faculty, for example where professional bodies require it.
- 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.
- Students who fail more than 45 credits at Masters level will 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 a Postgraduate Diploma.

(Section 5 of Ordinances and Regulations for the Degree of Master, Postgraduate Diploma and Postgraduate Certificate:  
<http://www.campus.manchester.ac.uk/medialibrary/researchoffice/graduateeducation/reg-master-dip-cert.pdf>

## Dissertation

- Dissertations should be submitted in accordance with the information set out in the University's Guidance Notes for the Presentation of Dissertations.
- Dissertation or project submission dates will normally be 51 weeks after the start of the programme and will be published in programme handbooks. Submission dates for part-time students will reflect the length of the programme (pro-rata compared to a full-time programme).
- The dissertation will be submitted before the end of the programme in order for a student to be eligible for the award of distinction or merit.
- 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 dissertation mark of between 40-49% may accept the award of Postgraduate Diploma with no further work required or resubmit the dissertation on one occasion, at the discretion of the Board of Examiners. A student achieving a mark below 50% for a resubmitted dissertation 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.
- A student may exceptionally be required to attend an examination, orally or otherwise, in the subject of their dissertation or project report, or a related matter.

(Section 6 of Ordinances and Regulations for the Degree of Master, Postgraduate Diploma and Postgraduate Certificate:

<http://www.campus.manchester.ac.uk/medialibrary/researchoffice/graduateeducation/reg-master-dip-cert.pdf>

## Recommendation for award

### Pass Marks

- To obtain a pass for a Masters degree, the student is required to obtain both an average of 50% on the taught element, and 50% on the project/dissertation element.
- To obtain a pass for a Postgraduate Diploma or Certificate, the student is normally required to obtain an average of 40%. If there is a project element of more than 30 credits, a mark of 40% or more on the project element is also

required to pass. A pass mark of 50% may be required for some professionally accredited diploma programmes.

- Students admitted to the Postgraduate Diploma or Certificate programme who achieve average marks of 50% or more, after completing a predetermined number of course units (normally 60 credits), may progress to the Masters programme.
- The Faculty shall, on report from the Examiners, recommend to Senate the award of the degree of Master or Postgraduate Diploma or Postgraduate Certificate for those students who have completed all requirements of the regulations and satisfied the Examiners. The awarding certificate will include the title of the programme.

### **Distinction**

- A distinction may be awarded to a student who has consistently achieved excellence in the assessments of a Masters or Postgraduate Diploma programme.
- The student will have satisfied the following criteria in order to be awarded a distinction:
  - a. An average at first assessment of 70% or more in the taught component of the programme with no mark below 50% in any course unit.
  - b. A mark of 70% or more for the dissertation.
  - c. A Pass at first assessment in components of the programme where only a Pass/Fail is recorded.
  - d. Submission of the dissertation by the end of the period of programme.

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.

### **Merit**

- Merit may be awarded to a student who has consistently achieved good marks in the assessments of a Masters or Postgraduate Diploma programme.
- The student will have satisfied the following criteria in order to be awarded a merit:
  - a. An average at first assessment of 60% or more in the taught component of the programme with no mark below 50% in any course units.
  - b. A mark of 60% or more on the dissertation.
  - c. A Pass at first assessment in components of the programme where a

Pass/Fail is recorded.

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

(Section 8 of Ordinances and Regulations for the Degree of Master, Postgraduate Diploma and Postgraduate Certificate:  
<http://www.campus.manchester.ac.uk/medialibrary/researchoffice/graduateeducation/reg-master-dip-cert.pdf>

### **Remarking of Examination Papers and Coursework**

It is the policy of the School of Computer Science not to selectively remark examination papers or coursework on request.

Examination papers and coursework will only be remarked where the school officers (Chair of the Board of Postgraduate Studies or Examinations Officer) have good cause to believe that there has been a marking irregularity and, under such circumstances (which would normally be exceptional), all examination papers or coursework would be remarked.

The School will not remark work simply because you may believe that you should have obtained a better mark than that shown on your transcript.

### **Resitting Examinations**

If you fail the examination component of your programme, the Board of Examiners will determine which examinations you must retake in accordance with The University of Manchester progression rules set out in the Ordinances and Regulations for the Degree of Master, Postgraduate Diploma and Postgraduate Certificate:

<http://www.campus.manchester.ac.uk/medialibrary/researchoffice/graduateeducation/reg-master-dip-cert.pdf>

If you are required to resit any examinations then you are responsible for ensuring that you are able to attend the correct set of examinations. To do this, you must contact the appropriate Programme Leader for your programme at the following times:

1. At the beginning of each semester to inform the Programme Leader of the course units you are required to retake in the current academic year. This will enable the Programme Leader to determine any changes to course unit syllabi and inform you of minor changes and ensure that special examinations are set for course units which have changed significantly.
2. In the middle of each semester, to check that you have the correct set of course unit notes, etc.
3. At the end of the semester to ensure that you have not missed any last minute information.

The content of course units can change from year to year. If the change is small (less than 20% of the course unit material) you will be expected to sit the examination for the current course unit. If the change is larger (more than 20% of the course unit material), a special examination will be set for you that is consistent with the course unit as it was taught in the previous year. The School will be the sole arbiter of the degree of change in course unit material.

An examination timetable will be sent to you before each examination period. You may not attend lectures and laboratory classes except by arrangement with the Head of School.

### **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 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 University website.

### **Academic Appeals**

*No appeal can be made against the academic judgement 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 Policy webpage](#)

### **Prizes**

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

## **11. Important Coursework Issues**

You should be aware of the following issues pertaining to coursework and should read all of this section carefully before undertaking coursework. The relevant sections are identified.

### **11.1. Types of Coursework**

There are two types of coursework, Group and Individual. Students may not elect to undertake a given assignment as group work when it has been set as individual work.

## **Group Work**

Some coursework requires students to work in groups. The marks awarded for a student can be generated in two ways:

A group mark – all members of the group will be awarded the same mark irrespective of the contribution of the individual team members.

An individual mark – each member of the group will gain an individual mark that will be based on their individual contribution to the group.

Where given, an individual mark is often computed from a group mark (awarded to the entire group) and an individual mark that will be based on observation by members of staff and/or the assessment of an individual report.

You should be clear about the means of assessment that is to be used before you embark on coursework.

You should also be aware of the basis on which the coursework is assessed. There are two types:

Academic quality only – in this case the group's mark is determined solely by the standard assessment of the academic quality of the work. No marks are given for group organisation and management; of course, well-organised, well-managed groups will generally produce higher quality submissions than those groups that are not.

Academic and organisational quality – in this case a group's marks are based on the academic quality of the work and the ability they have demonstrated in managing and organising the group, and the ability of the group's members to work together.

Finally, you should be aware that most group projects are assessed through a number of group deliverables (for example, a single group report). However, in some cases individual reports or presentations will also be required from the group's members. In this case, the individual assessment will be treated in the same way as individual work.

## **Individual Work**

Individual work is an assessment of your own ability to complete the coursework. It should not be tackled in a group and you are responsible for ensuring that you submit your own original work.

You should read the section below carefully before submitting individual coursework.

### **11.2. Referencing the work of others**

Some coursework consists of a written report or essay in which you are required to read relevant literature and to submit a report. It is vitally important that your coursework is original; all reports need to reference the sources that have been

used to construct the report. In some cases, direct quotations may be taken from the literature and included in the report. It is vitally important that these are clearly referenced. In certain (rare) circumstances it may be permissible for students to work together to produce separate individual reports and, in these cases; some sections of the reports may be common. These sections must be clearly identified.

### **11.3. Coursework Offences**

The school will take action in all cases where coursework offences have been detected and ignorance of the regulations will not be taken as an acceptable defence. You should also note that you have a responsibility to ensure the originality of your own work (i.e. you should not give other students a chance to copy your work). Students whose work is copied will normally be subject to the same penalties as those applied to students who copied.

There are four types of offences:

#### **1. Copying and Collusion**

This occurs when two or more students submit the substantially same piece of coursework in whole or part. This may be from the same electronic source (e.g. a word-processed document or a program listing) or when the same material is presented in a different way.

You should be aware that material that derives from the same source but which has been changed to make the submissions appear less similar will be considered to be a breach of regulations.

This type of offence can occur when students have worked together as a group or where one student has copied from another. Irrespective of how the breach of regulations has occurred all of the students involved will be penalised in the same way. So, for example, if you have your work copied by another student, then you will be punished in the same way as the person who did the copying. This imposes significant responsibilities on students to ensure the integrity of their own coursework. You should ensure that:

You do not leave work on printers.

You do not give passwords to other students.

You do not allow other students to use your home computer without taking adequate precautions.

You do not show your coursework to other students.

These issues are very important. There have been a number of cases in recent years where a student has lent his/her coursework to another student in order to help the other student understand the exercise. After submission the originator has found that the other student has copied his/her coursework. In other cases, students who have shared home computers have found that other students have

submitted their coursework.

If you believe that another student has gained access to your coursework, you should inform the relevant Programme Leader as soon as possible.

It is vitally important that when you discuss coursework with others you do so in very general terms and are not so specific that it leads to the same piece of coursework being submitted.

The school will use whatever means it sees fit to test coursework for breaches of this regulation. This may include the use of software that checks submissions against each other. The school reserves the right to insist on electronic submission in specified formats.

## 2. Copying from another source

This case occurs when you submit work from another source as if it were your own work. The other work may be copied from textbooks, academic papers, Internet resources, and the submission of other students in previous years.

You should be very careful that you correctly reference the work of others. Failure to adequately reference the work of others will be deemed to be a breach of this regulation.

## 3. Repeated Submission

You may submit an item of coursework for assessment on only one occasion (apart from in exceptional circumstances – see below). Where you submit the same piece of coursework for multiple assessments, it will be deemed that you have copied from another source.

## 4. Fabrication of results

This occurs when you claim results that you have not actually obtained. For example, you may be asked to develop a program that computes a set of results and to write a report giving the results. If you fail to get your program working but submit a report saying that you have obtained a certain set of results then you are in breach of this regulation.

Another breach of this regulation concerns the demonstration of a deliverable. If you demonstrate another student's program as your own then you are in breach of this regulation. If you write a 'dummy program' that appears to calculate the correct output from a set of input data, but which does not properly calculate the results you will also be deemed to be in breach of this regulation.

### Penalties for Submission of Improper Coursework

Penalties will be applied in line with University policy.

## **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 Student Support 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 Student Support 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 (Section 17.1)** 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 [the policy webpage](#)

## **12. Advice on Essay Writing**

For help in developing your essay writing skills (and as preparation for writing your dissertation) useful webpages 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 pursue:

[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)

## **13. Guide to MSc Projects**

### **13.1. 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.

### **13.2. 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 an MSc 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 project 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.

### **13.3. Allocation**

You must complete the Project Choice Form available from the Student Support 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 or subsequent choices.

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.

### **13.4. 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.

**Assessment.** For the purpose of the MSc degree (including Distinctions and Merits), the *only thing* that can be taken into consideration about your project is the quality of your final dissertation. 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 individual 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.

### **13.5. Equipment**

You are permitted to develop software (or hardware, if appropriate) on your own equipment, provided that you can give a demonstration to your supervisor. However, you should prepare a fall-back position in case your equipment misbehaves. Remember that the software on some home computers may not be reliable. It is not unusual for a potentially good project to be spoiled by bugs in compilers, libraries etc. on your own computer equipment.

If you wish to use software which is not currently provided in the School 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 report 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 and also provides a record of your progress through the project.

### **13.6. Research Skills and Professional Issues Course Unit**

The 30-credit weighted course unit on Research Skills and Professional Issues, as well as covering issues arising in a professional career and also workplace skills, acts as a foundation for your Research Project and you will undertake the initial part of your project as part of this course unit.

The course unit will cover various aspects of research skills, including the process of undertaking research, managing a research project, conduct during your MSc project, preparation for dissertation writing and the skills associated with professional and research writing. There will also be presentations given by leading research scientists on their experience of research work.

In addition, you will have regular meetings with your project supervisor and begin preliminary work on your project during the course of the second Semester. This work includes all required background and preparatory work, reading related literature, learning to use software/hardware systems required for the project, and extensive project planning including its scope, aims, achievements and timetable.

This work is to be written up as a Project Background Report (or reports in case of group projects) and submitted before the end of the second Semester (exact deadline to be announced). It will carry 30 credits and you are required to pass this at the 50% level in order to continue to complete the project and write your dissertation.

### **13.7. Supervision**

The relationship between yourself and your supervisor is critical to the success of the project.

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.

#### **The Supervisor**

Each student is allocated an individual supervisor, who is normally a member of the academic staff of the School, to oversee the progress of the project. The role of the supervisor is to provide intellectual guidance and offer advice on the planning of the project.

## **Contact with the Supervisor**

Student and supervisor should agree the frequency and duration of their contact during the different phases of the Dissertation/ Diploma project. Students must keep a record of the meetings, the notes on the discussions and decisions regarding their project and any other feedback relating to the project work.

## **Responsibility of the supervisor**

Responsibilities of the dissertation supervisor normally include:

### Choice:

- discussing the choice of dissertation or project topic with the student to make sure that the project / research is feasible within the time available.
- advising on the writing of any outline and proposal required and the selection and submission of a title.

### Planning:

- discussing the design and adequacy of methods.
- giving guidance about the nature of the dissertation / project and, where possible, suggesting dissertation / project reports of former students as examples.

### Execution:

- giving guidance on search techniques and on necessary reading.
- giving guidance on the planning of empirical work.
- giving guidance on the development of chapters.
- giving guidance on conventions of dissertation writing.
- assisting the student in managing the timetable of the project.
- assisting the student in identifying when problems are liable to be encountered and how they might be tackled.
- identifying any health and safety requirements related to the project which must be adhered to and to ensure proper risk assessments are conducted where required.
- making the student aware when progress on the dissertation is below the standard expected and giving guidance on how the problem should be rectified.

- informing students who require additional help with language skills, where such help can be sought.
- drawing to students attention policies and regulations relating to the conduct of research, including ethical considerations.

#### Writing-up:

- responding to first drafts of chapters in reasonable time with constructive feedback, normally within three weeks of receipt.
- ensuring that the student is aware of policies and regulations relating to the reporting of research and the implications of misconduct and plagiarism.
- Completing:
  - giving advice on the necessary completion dates for successive stages of the work so that the dissertation may be submitted by the published submission date.
  - advising the student about the need to submit formal requests for interruptions/extensions as required.

### **13.8. Student Responsibility**

Students should note that they are responsible for their work and that the role of the supervisor is to provide guidance and advice. Students may NOT expect their supervisors to provide detailed feedback on more than one draft of each chapter or to correct spelling, grammar, punctuation etc.

It remains the sole responsibility of the student to ensure that all requirements of the dissertation are met.

The responsibilities of the student normally include:

#### **Administration of Dissertation Process:**

- arranging meetings with his/her supervisor(s) (taking account of any periods of holiday or work-related absence during the supervision period).
- keeping appointments with his/her supervisor(s), or informing his/her supervisor(s) where this is not possible.
- discussing with his/her supervisor(s) the type of guidance and comments s/he finds most helpful.
- ensuring a professional relationship with his/her supervisor is maintained at all times.
- maintaining a suitable record of supervision meetings, including dates, action

agreed and deadlines set.

- preparing adequately for meetings with his/her supervisor(s).
- attending and participating fully in any courses related to the dissertation element of the programme provided by the School.
- discussing issues arising from feedback and taking appropriate action.
- maintaining the progress of the work as agreed with his/her supervisor(s).
- raising problems or difficulties with his/her supervisor(s).
- making his/her supervisor(s) aware of any circumstances likely to affect his/her work.
- giving his/her supervisor(s) due warning and adequate time for reading any drafts.
- being familiar with University / Faculty / School regulations and policies that affect him/her.
- submitting the dissertation title and ethical approval form to the relevant office by the due date specified.  
(<http://www.humanities.manchester.ac.uk/infoforstaffstudents/academic-services/pgteaching/ethicalapproval/>).

#### **Writing-up:**

- ensuring that the final dissertation is written in accordance with requirements relating to the correct use of English language and presentation of tables, references, figures etc.
- where necessary, arranging for the completed dissertation to be proof-read, ensuring that this is done in adequate time to allow submission by the required date.
- checking the completeness and accuracy of the text of the dissertation / project submitted.
- ensuring that submitted work is their own (i.e. avoiding plagiarism).
- ensuring adequate time for the binding of the dissertation.

#### **Completing:**

- submitting the dissertation to the appropriate office by the submission date specified.
- informing his/her supervisor of the need for formal extensions or interruptions

to the period of study and to ensuring that such extensions or interruptions are applied for in the appropriate way.

### 13.9. The Dissertation/Reports

The dissertation/reports is/are *extremely* important. We give advice below on how to structure and present your dissertation/reports. Regulations will be found on the [University website](#) by the time you start writing up.

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 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 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 report 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 24-40 pages  $\times n$ , where  $n$  is the number of group members, and a typical length of the individual report is 36-60 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 components below 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](#) **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.

Please refer to **Section 17.7** for advice on Scientific writing.

**Title page.** This must be in the standard form described in [University regulations](#).

**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.

### Internal Chapter Structure

Each chapter should have an introduction stating its purpose within the dissertation and why it is placed at that point, and outlining what is to be covered in the chapter and why.

Each chapter should finish with a summary describing what it has presented and what is to follow.

Chapters should not be overly long – it is important to show summaries of ideas and not simply repeat everything that has been read. A chapter of longer than 20 pages should usually be avoided. When a chapter is more than 30 pages it should generally be split into two (or more) chapters.

### Proof Reading & Quality of English

It is extremely important that you carefully proof read your work. This should catch most typing errors that are not spelling errors, for example “form” instead of “from”.

Proof reading means also checking for inconsistencies, disparities, missing paragraphs, unintelligible sentences, bad formatting of text, graph and drawings, etc.

The dissertation/reports is/are expected to be written in English as practised by a native speaker. If English is not your first tongue then you should consult your supervisor to determine if you need additional help in this regard. This may involve outside help.

Note: the quality of the English in your dissertation/reports is your responsibility solely. If you require, the English Language Teaching Centre organises classes in academic writing.

### Spelling and Grammar Checking

You must spell check all parts of the dissertation/diploma report. A number of tools are available for spell checking, for example in MS WORD. Such tools should be used where available.

**Note:** this is not instead of proof-reading but as well as!

Additional guidelines include:

In general, the text should be left and right justified;

All chapter/(sub)section headings should be in bold-font – with increasingly less eye-

catching presentation;

All figures/tables should be numbered and included in the table of contents;

All tables/figures must be referenced in the text;

The author should not normally refer to him/herself explicitly by using the first person, i.e. we should read the “author”, “s/he”, etc. instead of “I”, “my”, etc.

## **Referencing and Citing in the Text**

### Referencing

When researching a piece of written work you will frequently read other peoples' ideas, theories or data that you will want to make reference to in your own work.

### Citing

Making reference to other authors in your own work is called citing. The names of the authors who are cited in your text are listed in alphabetical order at the end of the written work. This is a reference list.

The process of citing authors and producing a reference list can be done in one of two common styles – the Harvard or the Numeric. A consistent approach to references should be adopted when citing in the text and in the reference section. This guide describes the Harvard Referencing System as it is the mostly commonly used, but you may use other standard systems.

### **Why reference?**

To show evidence of the breadth and depth of your reading;

To acknowledge other peoples' ideas correctly;

To allow the reader of your work to locate the cited references easily, and so evaluate your interpretation of those ideas;

To avoid plagiarism.

### **What is the difference between a Reference List and a Bibliography?**

Reference list - this list provides all the information about the published works - books, journals and newspaper articles etc., you have mentioned within your text. It is organised alphabetically by the family names of the authors (or originators). The list appears at the end of the work and gives full details of the author's name, what the work is called, the date of publication and where it was published.

Bibliography – a list of all works read in the course of your preparatory reading. This includes material that has been helpful for reading around the subject area but has not been referred to directly in the text. It is still important to acknowledge this work. This list is also arranged alphabetically by authors' family name and is located after

the reference list.

Some people mix the list of references from within the text (references) and the references to wider reading (bibliography) together in one list, which they call the Bibliography. This is discouraged, because it creates difficulties for your examiner, who has to sort out which is which, in order to be clear about the accuracy of your referencing.

### **Citing in your text**

The Harvard System (sometimes called the Name and Date System) uses the family name of the author of the work you wish to cite and the date it was published. These are incorporated into the text of your work each time you make reference to that person's ideas.

#### Citing a single author

The author and the date of publication are provided

For example:

Smith (1993) has suggested that .....

OR

Some commentators suggest that ..... (Smith, 1993), whilst others believe more complex relationships exist.

#### Citing more than one author

If there are two authors, the names of both should be given in the text and in the reference list. When citing and referencing use the same format for both, and words are preferable to symbols. For example, Smith and Jones not Smith & Jones.

If there are more than two authors, the name of the first author only should be given in the text, followed by the abbreviation 'et al.' (meaning 'and others' in Latin).

For example:

Bennet et al. (1997) showed that .....

Note that et al is in italics and is followed by a full stop.

In your reference list, however, you will list **all** the authors who compose the et al.

For example:

Bennet, S., McRobb, S. and Farmer, R. (2002) Object-Oriented Systems Analysis and Design. London: McGraw Hill.

Note that in the reference list the family name and initial are inverted.

#### Distinguishing several publications in the same year by an author

Sometimes you will find that an author has published two or more books, journal articles, etc. in a given year. It is important to distinguish between the different publications by adding letters (a, b, c, etc.) to the date in the text.

For example:

Johnson (1991a) has progressed both experimental and practical aspects of software technology to the point where they provide a serious challenge to Pacific Belt dominance (Johnson, 1991b).

In the reference list the articles are presented alphabetically: 1991a, then 1991b and so on.

For example:

Johnson, C. (1991a) Software: The way ahead ....

Johnson, C. (1991b) Changing Global Markets ....

#### The Required Information

You will find all the information that you need to build up a reference from the title page of the book or document you are citing. Remember to

- Keep the order of authors' names the same as on the title page
- Cite the first named place of publication.

Note that when citing the place of publication the following applies:

- If a text was referenced as published in Manchester it would be assumed this was in the UK. If a text was published in the US it would be referenced as Manchester, N.H. (abbreviation for New Hampshire).

Note that edition dates are not reprint dates (new editions will have new text and must be cited as such). The copyright sign will often indicate the date of production.

If the work to be referenced has not originated from a commercial publisher and lacks obvious title page data – for example, papers presented at conferences but not published – then the appropriate information should be obtained from any part of the document.

A book's editor is referenced in exactly the same way as an author, adding (ed.).

For example:

Cibora, C.U. (ed.) (1996) Groupware and teamwork: invisible aid or technical hindrance?. Chichester:Wiley.

or

Grosz, B.J., Sparck Jones, K. and Webber, B.L. (eds.) (1986) Readings in Natural Language Processing. Los Altos: Morgan Kaufman.

Note, the capitalisation of the title should be the same as on the source.

### Corporate Authors

Sometimes it is not possible to name an individual as an author. For example, where there has been a shared, 'corporate' responsibility for the production of the material. In such cases the 'corporate name' becomes the author (often called the 'corporate author').

Corporate authors can be government bodies, companies, professional bodies, clubs or societies, international organisations.

For example:

Institute of Waste Management (1995) Ways to Improve Recycling. Northampton: Institute of Waste Management.

The 'corporate author' appears in the text in the same way as authors.

### Chapters in edited books

An edited book will often have a number of authors for different chapters. To refer to a specific author's ideas (from a chapter), cite him or her in the text, not the editors. In the reference list indicate the chapter details and the book details from which it was published.

For example:

Whitehead, C. (1991) 'Charismatic Leadership'. In: W. Harrison and D. Cole (eds.) *Recent Advances in Leadership Theory*. London: Waverley. pp. 73-89.

Note the use of 'in' to link the chapter to the book, and the use of page numbers.

Whitehead's name would appear as the author in your text, and in the reference list. The year of publication is only given once in the reference list.

### Secondary sources

A journal article or book someone else cites that you have not seen is called a secondary source.

You should try and find the bibliographic details of the source yourself (for example, by using the bibliographic CD-ROM services available in the UNIVERSITY OF MANCHESTER library) and cite them in the normal way. It is important that when criticising ideas you do it 'first hand'.

If you are unable to locate the bibliographic details of the secondary source, you may cite it in your text using the text that is your primary source.

In your text and reference list you must link these two items with the term 'cited in'.

The format is:

Author of original work's family name, initials, (Year of original publication), Title of original work. Place of publication: Publisher. Cited in Author/editor surname, initials. (Year) Title. Place of publications: Publisher.

For example:

A change in family circumstances can affect a child's emotional stability (Pollock, 1995) cited in Jones (1996).

Pollock, T. (1995) *Children in Contemporary Society*. Cited in Jones, P. (1996) *A Family Affair*. London: Butterworth.

Note that only the primary source title is italicised and both years are included.

### No publication details given

Occasionally you will find documents that lack basic publication details. It is common practice to indicate that this information is not available by using a series of generally accepted abbreviations:

author/corporate author not given	use (Anon.)
no date	use (n.d.)
no place (sine loco)	use (s.l.)
no publisher (sine nomine)	use (s.n.)
not known	use (n.k.)

### Quotations

If you quote from a publication directly, then you must place the page number within the citation. In the reference list, however, it is not necessary to indicate the page number.

#### a. Short Quotations

Short quotations, meaning the use of a phrase or part of a sentence. Short quotations used within the text require the use of single quotation marks.

For example:

Whilst it is possible that poor parenting has little effect on primary educational development, 'it more profoundly affects secondary or higher educational achievement' (Healey, 1993, p. 22).

#### b. Longer Quotations

Quotations that are one sentence or more should be distinguished from the rest of the text by indenting the quotation by an equal amount from both side margins and placing in single space format (as opposed to the rest of the text which should be in 1.5 or double spaced format). Note the example below of a long quotation set with text. You may also use a smaller font size to further distinguish the quoted text.

Indented quotations do **not** have to be placed in quotation marks.

For example:

The rise of capitalism and the expansion of the world market have made international trade an essential part of modern society. The industrialised core has developed, and continues to maintain its lifestyle, by exploiting the labour and resources of the periphery. Because the developed countries hold the power they dictate the terms, not only with regard to pricing but also the uses to which resources are put.

The resource depletion cost of individual people in the North is much greater than that in the South: 80 per cent of the world's resource consumption is by 20 per cent of the people. This 20 per cent live mainly in the North. Since many resources are transferred (at prices favourable to the purchaser) from the South to the North, much of the cost is paid in the South.

(Kirby et al, 1995 p.4)

This uneven development is the central argument of the neo-Marxist point of view.

Never split a quotation in your text. If it does not fit completely on a page then start a new one so that the whole quotation is kept together.

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

Make sure that your dissertation/reports is/are in the required format (there are various 'style files' to help with this), otherwise it may not be accepted at submission time. An electronic copy of your final dissertation/reports must be submitted via the Moodle/Blackboard site (<http://moodle.cs.man.ac.uk>). The electronic versions should be a PDF file. It should be submitted in an uncompressed form and be suitable for on-line viewing and web download.

### **13.10. Assessment of the Dissertation/Reports**

Dissertations/reports 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.

### **13.11. Project Seminars**

Students may have the opportunity to give a seminar in the first two to three months of the project. 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. It will also provide feedback and comments from your supervisor and a second marker, usually the other internal project examiner. Other students and staff may 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.

### **13.12. 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 without letting your supervisor read drafts 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 has 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.

### **13.13. Research Project Timetable**

**Before Semester 2.** Project proposals are posted on the web and announced to students to go to the [postgraduate information](#) 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, with the exception of group projects, 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.

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 Semester and Remainder of MSc year**

After choosing your project at the turn of the year you will:

1. Complete the Research Skills & Professional Issues course unit in the second semester, alongside some taught course units.
2. Submit your Project Background Report by the deadline before the end of the second semester. If you pass then:
3. Work full-time on your project and writing the dissertation until the deadline which is usually early to mid September.
4. Present a project seminar in May/June.

**WARNING** – Writing your dissertation may take much longer than you imagine. You should therefore allow at least 1 month (and probably longer) full-time to write, and also write-up parts of your work as they are completed so that the dissertation is part-way written before your project is completed.

**Mid Summer.** You must give prior notice of your intention to submit by completing

a [Notice of Submission Form](#). A fee is payable for late notice. The rules regarding the form of the dissertation are currently being made and will in due time appear on the [University's policies webpage](#). You will be made aware of the rules regarding the form of the dissertations/reports, and you will also be told where to submit both, the *Notice of Submission Form* as well as the dissertation/reports.

**Early September.** The deadline for the submission of MSc dissertations/reports varies from year to year but is usually in early September. Two bound copies of your dissertation must be submitted. In the case of group projects two bound copies of the group report must be submitted and two bound copies of the individual reports of each group member. 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 [sso@cs.man.ac.uk](mailto:sso@cs.man.ac.uk).

**Submitting late.** If you are unable to submit by the deadline in early September you must request the permission to submit late by completing a [request form](#).

## 14. Programme Management

The programme is run on a day-to-day basis by your 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 in recent years.

**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.

## 15. 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 advisory service of the School of Computer Science. This 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 advisory 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 student notice-boards.

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](mailto:iwlp@manchester.ac.uk).

Contact details for information on English language courses: 306 3397, [englang@manchester.ac.uk](mailto:englang@manchester.ac.uk).

A more detailed list of services for students can be found at this address: <http://www.campus.manchester.ac.uk/studentssupportandservices/>.

### **15.1. Students with Additional Support Needs**

The University of Manchester welcomes students with additional support needs arising from a specific learning difficulty, such as dyslexia, an unseen medical condition, a mental health difficulty or a disability or impairment. The University has a central Disability Support Office (DSO) which can offer confidential advice and organise support. In order to access the full support that the University can offer, you should contact the DSO to discuss your support requirements, either by

email ([disability@manchester.ac.uk](mailto:disability@manchester.ac.uk))

telephone (0161 275 7512/8518), minicom +44 (0)161 275 2794,

text 07899 658790, fax +44 (0)161 275 7018

or just drop into the DSO offices where you can speak in confidence to a Disability Adviser about your needs.

If you are a student with support needs and have not yet informed the DSO, then please contact them in the first instance. In addition to this, each Faculty and School has a Disability Coordinator, who liaises with the DSO to organise support in the School – a full list of Disability Co-ordinators is available on the DSO web pages – [www.manchester.ac.uk/disability](http://www.manchester.ac.uk/disability). The DSO can also organise screening tests for students who think that they might have dyslexia.

## **15.2. GRADS Scheme and Personal Development Planning (PDP)**

The aim of the Graduate Education Scheme is to support postgraduate students, in the Faculty of Engineering and Physical Sciences, in the development of personal/professional skills required to successfully complete a degree and ensure maximum future employability.

For students taking taught master programmes, we do this primarily by providing a set of Key Skills workshops and online learning programmes. Additionally, postgraduate students are offered the chance to complete an online Personal Development Plan (PDP). The PDP allows you to self-assess your skills, record your achievements and reflect on your progress throughout your degree. At the end you can take away your records and use them to help you write your CV.

The PDP covers the following:

The philosophy of personal development planning

Identify areas for development

Prioritise your skills development needs

Plan how to develop these skills

Record and monitor your development

Review and reflect upon your development

The online Personal Development Plan is a tool for you to use to achieve the goals of the process outlined above. As this is a self-directed tool, you will only benefit from the process if you take ownership of the PDP and take the initiative in using it to enhance your own learning and personal and professional development.

The Faculty of EPS has developed an [on-line PDP](#) file for all PGT students which we strongly encourage you to use.

**TRAINING WORKSHOPS:** The Graduate Development Scheme offers Key Skills workshops for MSc students. The sessions are provided in addition to school provision and are targeted specifically to meet the needs of dissertation/project students. There is no charge for attending these workshops.

To find out more about the Graduate Development Scheme and the workshops or to register for online Personal Development Plan see <http://www.manchester.ac.uk/eps/grads> or email your query to: [eps-grads@manchester.ac.uk](mailto:eps-grads@manchester.ac.uk)

### **15.3. 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 [http://www.manchester.ac.uk/medialibrary/international/arrival\\_guide.pdf](http://www.manchester.ac.uk/medialibrary/international/arrival_guide.pdf) 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.

## **16. 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 swipecard, 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](#). 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.

## **17. Health and Safety**

Health and Safety General Induction Document: 2007

### **17.1. 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 and on appropriate notice boards around the School.

This document provides summary information about the following topics:

- Emergencies
- DSE Usage
- Electrical Safety
- First Aid

- Out of Hours Working
- Lone Working
- COSHH
- General Advice

## **Emergency Evacuation**

### Lamb Building

Is a single stage alarm leave immediately by nearest emergency exit

### Kilburn and ITS Buildings

The Fire Alarm in both the 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
- Lamb Building West end of Prospect House

## **Fire Alarm Testing**

The Fire Alarms are tested as follows:

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

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.

## **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.

All rooms will be locked after an evacuation and no entry into buildings will be permitted

Room will only be opened by porter or security in stages after the all clear to enter has been given

Health and Safety General Induction Document: 2007

### **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.

### **Evacuation Chairs**

If you would need assistance during an evacuation inform your supervisor

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.

### **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.

### **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:
  - o Let the caller finish the message without interruption.
  - o Write down the message exactly as spoken.
  - o Note the time.
  - o Ask the following questions, if possible:
    - Where is the bomb located?
    - 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:-
  - o the Main Security Office (Tel: 52728/69966)
  - o the School Porters' Lodges (Tel: 56262, 56263 )
  - o the School Safety Advisor (Tel: 50148) and
  - o the Head of School's Office (Tel: 56154).

## **17.2. DSE use**

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

The assessment can now be accessed on line at

<http://windev.humanities.manchester.ac.uk/surveys/TakeSurvey.asp?SurveyID=5M36I3KI687MG2> to take the assessment

The following equipment is provided or is available if required

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

## **17.3. 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.

### **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.

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

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.

#### **17.4. 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 LF21: Tel: 57520

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

#### **17.5. 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 work on live electrical equipment may be done. No working in or on any machines in the Mechanical Workshop be operated out of hours.

#### **17.6. Lone Working**

Lone working should only be carried out in areas and on activities where it is safe to do so. After a suitable and sufficient Risk Assessment and method statement have been completed and all information, instruction, supervision are in place.

If it is necessary to be working in the office out of normal hours you should arrange to be monitored at regular intervals.

## **17.7. 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 data sheets provided by the manufacturer or supplier of the substance.

Before using chemicals or substances a suitable and sufficient Risk Assessment must be carried out.

You must be competent and trained when working with any chemical or substance and understand the outcome of working with and combining such chemicals and substances. You must have in place all necessary emergency procedures in the event of an accident / incident occurring from working with chemicals and substances

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

### **Cryogenic Material**

All personnel must carry out a suitable and sufficient Risk assessment and 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](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 a task specific risk assessment must be carried out it must be monitored by a person trained in the use of cryogenic material.

## **17.8. General**

The following general points should be noted:

- Corridors and escape routes must not be obstructed by rubbish, furniture or bicycles.
- Recycling:
  - o Boxes are provided for recycling plastic bottles and cups and for general waste paper
  - o Blue bags should be used only for recycled paper.
    - All paper in blue bags is treated as confidential.
    - Blue bags should never be more than half full and should have a maximum weight of 10kg.

- Blue bags should be left INSIDE locked offices alongside the normal waste bin. They will be collected by the Building Attendants
- 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](mailto:environs@cs.man.ac.uk) In an emergency
- during normal working hours, telephone 50148 (Environment Manager) or 00633 (Assistant Environment Manager) or 00515 (Deputy Building Superintendent).
- For problems with computers, e-mail [dutyoffice@cs.man.ac.uk](mailto: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](mailto:environs@cs.man.ac.uk)
- For problems with vending machine, e-mail [environs@cs.man.ac.uk](mailto:environs@cs.man.ac.uk)

## 18. University Regulations, Procedures and Policies

The university [website](#) contains details of university regulations, procedures and policies, including those for work and attendance, for MSc dissertations, for appeals, on plagiarism, etc.

### 18.1. 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.

## **18.2. Mitigating Circumstances Committee**

Evidence of illness during the course or examinations is considered by the School's Postgraduate Mitigating 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 Mitigating Circumstances Committee to consider your case you must complete a [Mitigating 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](#)

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.

### **18.3. 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.

### **18.4. Guidance to Students on Plagiarism and Other Forms of Academic Malpractice**

<http://www.staffnet.manchester.ac.uk/policies/display/index.htm?id=102536&off=RegSec->AcaReg->TLAO>

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.staffnet.manchester.ac.uk/policies/display/index.htm?id=102536&off=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.

## **18.5. 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.

## **18.6. Scientific Writing**

The Background Report, Masters Dissertation and Diploma Report should have a purpose and tell a story.

Similarly each chapter should have a purpose which contributes to the Background Report, Masters Dissertation or Diploma Report's purpose; each section should contribute to the chapter's purpose; each paragraph to the section; and each sentence to the paragraph.

Each sentence should contribute to the overall purpose of the Background Report, Dissertation or Diploma Report. If a sentence does not fit in its current place then consideration should be given as to whether it contributes, if it does then an

alternative location for it should be considered, if there is no alternative then it is usually indicative of a poor structure. If the sentence does not contribute it should be removed.

A number of internal dependencies, forward or backward, within the text are usually indicative of a poor structure. In this case the structure should be reviewed.

All opinions and conclusions must be justified by you or referenced to their source, results should be fully presented and discussed, and experiments should be presented in enough detail to be repeatable by the reader.

When approaches and results are being evaluated this must be done based on given criteria, thus results are only “good” with reference to stated criteria. Similarly one approach is “better” than another only with reference to stated criteria. As far as possible these criteria should be measurable and quantifiable.

Sentences should be short and to the point; the use of subjective adjectives (e.g. nice) should be avoided. Long sentences often lead to misunderstanding or ambiguity and should be avoided.

## **19. Useful Forms**

Project Seminar Form

[http://intranet.cs.man.ac.uk/Intranet\\_subweb/Postgrad/seminar.pdf](http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/seminar.pdf)

Notice of Submission Form

[http://intranet.cs.man.ac.uk/Intranet\\_subweb/Postgrad/noticeofsubmissionform.pdf](http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/noticeofsubmissionform.pdf)

Mitigating Circumstances

[http://intranet.cs.man.ac.uk/Intranet\\_subweb/Postgrad/mitigatingcircsform.pdf](http://intranet.cs.man.ac.uk/Intranet_subweb/Postgrad/mitigatingcircsform.pdf)

Interruption Form

<http://www.eps.manchester.ac.uk/informationforcurrentstudents/thefile,37060,en.pdf>

Permission to Submit Late

<http://www.eps.manchester.ac.uk/informationforcurrentstudents/thefile,37062,en.pdf>

Change in Registration Status

[http://www.graduateeducation.eps.manchester.ac.uk/admin/pdf/phd/change\\_in\\_registration\\_status.pdf](http://www.graduateeducation.eps.manchester.ac.uk/admin/pdf/phd/change_in_registration_status.pdf)

Extension to Period of Programme

<http://www.eps.manchester.ac.uk/informationforcurrentstudents/thefile,37061,en.doc>