University of York

Department of Computer Science

Students' Taught Course Handbook

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Introduction

This handbook refers to courses and modules envisaged for the academic year 2006 - 2007. It is a guide for taught course students taking courses and modules in the Department of Computer Science. It is available in both hardcopy and online. The Handbook is organized into three main sections:

General Matters for Taught Course Students

This section (chapters 1 - 8 inclusive) deals with general material that is relevant to students who are studying on any taught course. It includes chapters on regulations relating to the safe use of equipment, departmental policies relating to general conduct, student problems and welfare (including advice for students), channels of communication, and information relating to the department's computing facilities and their use. This section also contains details of the staff in the department and the structure of the department's boards and committees.

General Information related to taught courses

This section (chapters 9 - 15 inclusive) deals with material specifically related to taught courses although it does not deal with the details of specific courses, which are contained in the final section. This section contains chapters on projects, assessments and examinations and chapters dealing with the import and export of modules, the sandwich scheme and the North American exchange scheme. This chapter also contains important information regarding open and closed examination academic misconduct, plagiarism and collusion.

Specific information related to taught courses

This section (chapters 16 - 23 inclusive) is organized based on families of taught courses. It begins with a chapter that describes how all of the taught courses relate to each other. It goes on to provide detailed information relating to specific courses and modules run by the department during the academic year. It includes specific information about the department's degree courses and an explanation of the regulations that apply. Course charts are also provided which present an overview of each course and the modules being taught, including details about module lecturers, strands, module length, open and closed assessments and module credits.

General Matters for Taught Course Students

- This section of the handbook contains material that is of general relevance to all students on taught courses.

- For general information relating to taught courses, see the next section of this handbook.

- For specific information on a particular degree scheme, see the last section of this handbook.

1. Some Important Definitions and Dates

1.1. The University Year

The University year is divided into three terms: autumn, spring and summer (in that order). A term has 10 weeks. Term begins on a Monday (except in years in which Easter falls late, when the summer term begins on a Wednesday). Weeks 2-10, in which the majority of teaching takes place, run from Monday to Saturday.

Undergraduates are required to attend the University for the whole of each term, from the first day (Monday or Wednesday) of week 1 to Friday of week 10, with the exceptions noted in section 2.5. Undergraduate teaching normally begins on Monday of week 2, but sometimes starts during week 1. Examinations normally take place during week 1 of the spring term and week 7 or 8 of the summer term (see section 14.1.3 for details). Summer examinations are usually preceded by a revision week when no teaching is scheduled.

The notation "Term/Week/Day" is used in this handbook with the obvious meaning; so, the spring term (for example) begins on Spr/1/Mon and ends on Spr/10/Fri. Some MSc students are in residence during the summer vacation. To simplify the notation for these students, the summer vacation is counted as an "extra term". "Vac/1/Mon" means the first Monday of the summer vacation, which is the same day as Sum/11/Mon.

1.1.1 Dates of terms and degree congregations

This information can be found at:

http://www.york.ac.uk/admin/po/terms.htm

1.2. Courses, Parts, Modules, Credits and Marks

1.2.1 Courses

Formally, a course refers to a degree course, e.g. BEng / BSc (CS), MEng (CSSE) or MSc IT.

1.2.2 Parts

Students come and go in terms (autumn, spring, summer), but the undergraduate degree courses are arranged in two logical parts per year:

Part A) Autumn term, plus Spr/1/Mon to Spr/1/Fri
Part B) Spring (Spr/2/Mon to Spr/10/Fri) and summer terms

Certain courses continue into the summer vacation; where this is the case this is designated as “Vac” in the course tables in sections 17-23.

Through the four taught undergraduate years, these parts are labelled Ia, Ib, IIa, IIb, IIIa, IIIb, IVa, IVb.

At the end of teaching in each part, there is a revision period and then a period of closed examinations. Part Ia, IIa, IIIa and IVa closed examinations occur in week 1 of

the spring term. Part Ib, IIb, IIIb, IVb closed examinations occur in the summer term during weeks 7 and 8.

1.2.3 Modules

A module is a component of a degree course, usually comprising a set of lectures. Detailed information about modules is available from the module web pages at:

http://www.cs.york.ac.uk/courses/courses.html/

Module web pages describe the content of each module, what students can expect to learn from the module, how much work they can expect to do, and so on.

1.2.4 Credits, marks and workload

Each module is "worth" some number of credits. In general, this number is a multiple of five, and for undergraduate modules a multiple of 10. Most modules are worth 10 or 20 credits.

A credit is a measure of student workload. University policy is that a credit is equivalent to 10 hours' work (all taught modules, at any level). NOTE, however, that in this Department, all first year modules are assigned 9 hours per credit. The additional 1 hour per credit is allocated to the tutorial module.

It is intended, therefore, that a 10-credit first-year module require 90 hours of work by the student, whilst a 10-credit module taken in Part II, III or IV requires 100 hours of work. "Work" in this context includes all work associated with a module: lectures, practicals, preparation, revising, reading, assessment and so on.

By national agreement among universities, the number of credits per course is as follows.

Course	Credits per annum	Credits per course
MEng, MMath	120	480
BA, BSc, BEng	120	360
MSc	-	180
Diploma	-	120
Certificate	-	60

A credit is explicitly not a measure of the number of "marks" it is possible to gain by completing perfectly all assessments associated with the module. Some modules are intended to be "harder" than others, and it is the prerogative of the Board of Examiners to take account of this however it sees fit. Details of the marks allocated to each module are given in the module description pages online.

1.3. Prerequisites, Strands and Clumps

1.3.1 Prerequisites

Not all modules are available to every student. Availability is governed by a set of prerequisites, which serve the academic purpose of ensuring that students have the background knowledge necessary to benefit from a module. Prerequisites for a

particular module are listed in the appropriate module web page. There are normally no prerequisites for a Part I module (but see below). In Parts I and II of undergraduate degree courses, each Part B module has among its prerequisites the Part A module that precedes it in its strand (see 1.3.2). This is because strands are academically coherent along their length. A prerequisite requires that a student attend a module or strand and complete all examinations for that module.

Notes for CS / Maths students
Timetabling limitations mean that Computer Science / Mathematics students cannot attend the Introduction to Computer Mathematics (ICM) and Mathematics for Computer Science (MCS) modules. Some of the material in those modules is however required for the second-year module Theory of Computation (TOC). Material from ICM and MCS is also relevant to other second-year modules. Material relevant to these modules should be covered in the CS/Maths tutorials. Students should consult their supervisor as to whether they have satisfied the second year prerequisites.

1.3.2 Strands

A strand is a theme running through the degree e.g. UI, SY, SE, AI, etc. Typically, a strand is 30 credits of work, and includes a 10 credit part A module and a 20 credit part B module, although there are some exceptions.

Abbreviation	Strand
AI	Artificial Intelligence
AR	Architecture
EL	Electronics
MI	Miscellaneous†
MO	Modelling
PR	Programming
SE	Software engineering
SY	Systems
TH	Theory
UI	User interfaces

† The Miscellaneous strand exists to allow the flexibility to include options that do not fit into a clear strand. For the details of how any particular strand is constituted, see the "strand" column in the course tables in this handbook.

1.3.3 Clumps

A clump is a collection of assessed modules that together form a single pass-element for the degree. For undergraduate degrees, clumps apply only during the first two years and are labelled according to their year and part, e.g. CS1-A, CS2-B, etc. For some Masters level degrees, one clump might be all taught modules while another might be project work, e.g. MSc IT. For the details of how any particular clump is constituted, see the course tables in this handbook.

2. General Student Related Matters

2.1. University Accommodation

First-year students registered for sandwich placements may apply for places in the Property Rental Service (PRS) for their second year. Since all placements start at some time during the long vacation at the end of the second year, no conflict exists between the timing of sandwich placements and the contractual obligations required by the PRS. Those contemplating industrial placements will also be welcome to apply in the normal way for accommodation for their second year in college or in the Housing Service.

The Accommodation Office will contact all sandwich students while they are away on placement about accommodation for the third year of the degree course. Students should contact the Accommodation Office if they have any queries while they are away on their sandwich year.

The University Accommodation Office now treats both third and fourth-year MEng students as finalists. Students who accept a place in University accommodation during their third year are not debarred from a place in their fourth year, although their chances of a place in their fourth year will be reduced if they do. This does not apply to MMath students; it is a special dispensation for MEng students. The Accommodation Office currently treats third-year MMath students as non-finalists and fourth-year MMath students as finalists.

Please note that Board of Studies permission for absence during term-time (including the summer vacation for 51 week courses) relates only to a student's Departmental obligations. It does not entitle a student to withdraw from accommodation-related obligations. Students should consult the Accommodation Office for advice on leaving accommodation early.

Students who leave before the end of term (or the official end of the course in the case of MSc students) cannot expect any refund of rent paid to the University. For further information, see the document Student Accommodation Withdrawals Panel: Policy and Procedures, available from the University Accommodation Office.

2.2. Use of Computing Service Facilities

Computer Science students will be treated as any other student by the Computing Service. All students are automatically issued with a Computing Service user name at the start of their first academic year. Certain facilities, (printing in particular) require a down payment to be made in order to open a charge account. Check with the Computing Service for their latest regulations.

2.3. Communication with Students

The Department and the University use the following channels of communication to convey information to students. The Department undertakes to convey all essential information by one of these means. It is a student's responsibility to ensure that they receive it promptly.

It is most important that students check (in order of importance) each of the following frequently - preferably each weekday - while they are resident at York.

1) E-mail to their departmental account (username@student.cs.york.ac.uk). The university will communicate with students via their main university email account username@york.ac.uk. The department recommends that all students set up this account so that email is forwarded to their departmental account. This is a simple procedure. Go to http://www.york.ac.uk/services/cserv/edesk/
2) Post (non-electronic mail) addressed to them and delivered to their departmental pigeonhole in the student common room (CS002)
3) Notices posted on one of the notice boards in the ground floor foyer (CS020) or main ground floor corridor (CS021). There are general notice boards, and separate boards for each year (1st, 2nd, etc.)

Students may also receive mail in college. Important communications may also be sent to their registered term-time postal address.

The Department and supervisors will normally send e-mail to a student's departmental account because the departmental systems keep a record of mail delivery and there are times when it is necessary for academic staff to be able to check that certain e-mails have been delivered and read. Students may arrange to have e-mail forwarded from their departmental account to an external account, but if they choose to do this, the Department can accept no responsibility for messages that go astray after they have left the departmental systems, and in such cases, the excuse of "the e-mail you sent didn't arrive" will not be accepted.

If a student is away from York on a sandwich or other placement, they must continue to read their departmental e-mail regularly from their place of work.

Most modules have "module web pages" (see section 1.2.3). The module web page is distinct from the module description in the on-line Handbook. For example, to access the module web page for the MCP (Microcomputer Communications Project) module, go to the Departmental local page (see section 5.3.2), then select “Courses” > "Module descriptions", then select "MCP" (which takes you to the module description). Then follow the link to the MCP module web page. For most modules, this is the preferred channel of communication for module-related information from lecturer to student.

Announcements that relate to particular modules or assessments will be made on the appropriate departmental web page or web forums. Refer to section [5.3.3]. It is particularly important that students read module web pages and web forums frequently as vital information relating to assessments is often posted there and it will often only be available for about a week.

Students must ensure the university record of their term-time and home addresses are correct by logging on to https://evision.york.ac.uk/. Students should amend this record immediately when a change of address occurs.

If students wish to leave a message for their supervisor, or another member of staff, staff pigeonholes are located in room CS110. All staff can also be reached by electronic mail: refer to section 5.3.1.

2.4. Supervision

All students in the Department have a member of the teaching staff allocated to them as their supervisor (see section 6.1.).

It is a University regulation that all students must see their supervisor in the first and last weeks of each term. It is Departmental policy that all second year undergraduates and third year MEng undergraduates, who have neither regular tutorials nor weekly project meetings with their supervisor, should see their supervisor at least once a term (e.g. in week 6) in addition to the statutory meetings at the start and end of term.

The supervisor is the person to whom students should go at any time if they encounter academic or personal problems. Some students would rather approach someone other than their supervisor in some circumstances. It is normally better to discuss a problem, and the Department encourages students to do so in whatever way is appropriate. In particular, students should feel able to consult the Board of Studies Chair and Secretary, the Head of Department, or, in relation to specific examination issues, the Chair of the Board of Examiners. In certain situations, the Board of Studies Chair may be able to arrange a change of supervisor, either temporarily or permanently.

In the final year, the project supervisor becomes the student's general supervisor. For MSc students, the project supervisor becomes the student's general supervisor at the beginning of the summer term.

Periodically, members of staff are away from the University (typically for one term) on sabbatical leave. Students will be allocated a temporary supervisor who will act as their supervisor for all official purposes for the period during which their supervisor will be away.

2.5. Attendance and Absence

University regulations require undergraduate students to keep nine terms (twelve in the case of MEng and MMath students) as a basic qualification of graduation. As well as keeping three full terms, full-time MSc students are required to attend for most of the Summer vacation (see section 20.2).

Attendance at lectures is voluntary, but important material is often distributed at lectures: it is a student's responsibility to make sure that they do not miss it. **Practicals, problem classes and supervisions/tutorials are mandatory and must not be missed without good reason or advanced permission from the lecturer or supervisor.**

Teaching carries on as normal on Bank Holiday Mondays that fall during term time. All lectures, tutorials, seminars, practicals and problem classes will take place as timetabled.

2.5.1 Leave of absence

Those who wish to absent themselves from York for any reason during term must have the permission of their supervisor (or if unavailable, the Head of Department). A supervisor can only grant up to a total of three days absence in any one term and permission should normally be sought in advance of the absence. Absences of more

than three days in any one term must be approved by the Chair of the Board of Studies (section 7.1) whether or not teaching is being missed; such absences will subsequently be reported to the full Board of Studies. Absences of more than four weeks may only be granted with the permission of Special Cases Committee. (See the University Regulations for full details.) The Department does not grant leave of absence for social reasons or holidays. However, leave of absence would not normally be refused for final year students between their last examination or assessment, and Monday week 10 of their final term. Application for this leave of absence must still be made in writing to the Chair of the Board of Studies.

2.5.2 Cautions, warnings and deregistration

Attendance at tutorials, practicals and problem classes is compulsory. Some form of attendance register will be completed in all such classes, and absences followed up. It is the student's responsibility to ensure that their attendance is registered.

The Department uses absence from practicals' as one mechanism to keep track of students who may be in trouble: experience tells us that for a student who is in difficulties, whether academically, socially or whatever, one of the first signs is that they miss teaching sessions.

Students should not sign in for others. In the event of an emergency during a practical (for a fire alarm or whatever), the sign-in sheet can be used to determine whether students are still in the building. Firefighters or others might put themselves at risk trying to rescue a `signed-in' student who is not actually at the practical.

Students sometimes find this difficult to understand. However, the University imposes a duty of care on supervisors/departments.

The following describes the procedure that will be followed if a student misses a compulsory session. Students should note that the deregistration procedure described may be initiated for reasons other than accumulated or unacknowledged warnings over attendance.

If a student is absent from a compulsory class of any sort, they will receive a cautionary letter from the Departmental Office.

A caution is the first step of the internal disciplinary process, and must be taken seriously. Students should inform their supervisor why they were absent. A student's supervisor may then advise the Departmental Office that the caution should be cancelled. If a student has been ill, they should complete a self-certificate form (see section 2.6.1). Evidence supporting other reasons for absence may be submitted via their supervisor. If they cannot contact their supervisor, or would rather give an explanation to another member of academic staff, they may do so, but it is then their responsibility to ask for a caution or warning to be cancelled.

Cautions that have not been cancelled accumulate in a student's file and may be used as evidence when considering academic progress.

A student who continues to perform poorly despite cautions is sent a formal warning. This would normally indicate that the student has unexplained absences in three

separate weeks during one term. This is a preliminary step in the University disciplinary process. A formal warning can only be cancelled in exceptional circumstances, and must be responded to in writing to the Chair of the Board of Studies, within the deadline stated in the letter.

A student who does not respond to a formal warning, or who accumulates three formal warnings in one academic year, will receive a formal statement of intent to deregister. This notifies the student that the Department will prepare a case to the University Special Cases Committee (for undergraduates) or the University Board for Graduate Schools (for postgraduates) for the termination of the student's registration, on the grounds of unsatisfactory academic conduct (failure to attend required elements of the degree). (See University Regulation 6.4 (undergraduates) and 2.9 (postgraduates) for full details.) The Special Case would normally be submitted to the University within 2 weeks of this letter being sent. Students receiving such a letter must consult their supervisor and the Chair of the Board of Studies urgently. A student whose deregistration is sought has a right to representation at the Special Cases Committee hearing (see University Regulation 6.4).

The Board of Studies takes note of disciplinary evidence when it considers examination results, eligibility to resit failed elements, and final degree classifications. It may also recommend that a student with a poor attendance record should not be allowed to continue on the course.

Note that formal warnings, and the University disciplinary procedures, will be used in cases of misconduct generally, and are not solely a mechanism for dealing with non-attendance.

2.6. Illness

It is important that any student who is ill or unable to work should inform their supervisor at the earliest possible opportunity. If a student is ill in the period leading up to or during examinations, or while open assessments are being undertaken, they should complete an Extenuating Circumstances form (see section 14.2) and the Board of Studies will take this into consideration when assessing their work.

2.6.1 Student Self-Certification for Minor/Short-term Illness

If a student is unwell for up to 7 consecutive days during term-time and the exceptions below do not apply, then the student should complete an `illness self-certificate' form and forward it to the Student Support Office reception.

Self –certificate forms are available at the Departmental Office and Reception Desk, from the Student Support Office and from its website at:

http://www.york.ac.uk/admin/sso/selfcertform05.doc

The completed self-certificate should be received by the Student Support Office no later than 7 days after the first day of absence. This allows for monitoring of illness patterns across campus, which can be very useful, for example when dealing with clusters of illness. The Student Support Office will record the absence on the student record system and then forward a note or e-mail to the department, the library and, if the student is in residence, to their College.

Self-certification of illness is allowed for a maximum total of 10 days in one academic year, unless a medical certificate is required.

A medical certificate from the student's GP (doctor) is still required if:

1) The period of absence through illness extends beyond 7 consecutive days
2) The student will have been absent through illness for a total of more than 10 days in the current academic year.
3) The period of illness is to be considered as mitigation regarding performance in any formal assessment that counts towards final award or is a requirement for progression from one year or stage to the next.
4) Where for disciplinary or probationary reasons the Board of Studies has formally required the student to attend all teaching.

Students need to be made aware that this is not permission to take 10 days off per year. If a student is considered to be misusing this system, this will be dealt with as a disciplinary matter.

It is expected that students will normally be able to catch up on any academic work missed during a self-certificated period of absence.

2.7. Student Problems and Welfare

If you are experiencing difficulty with your work, if you feel that unreasonable demands are being made of you, if you find that there are clashes between course-work deadlines, or if you are being hindered by medical, domestic, personal or other problems, you should consult your supervisor (or another member of staff) as soon as possible.

If you cannot find your supervisor, or you would prefer to talk to another member of staff you may do so. In particular, you might want to talk to the Chair or Secretary of the Board of Studies (section 7.1) or the Head of Department (section 6.3). The department receptionist or the Departmental Office staff may be able to contact the member of staff you are seeking.

If you experience problems that interfere with your work, you may ask for this to be taken into consideration by Board of Studies in assessing your work, by completing an Extenuating Circumstances form (see section 14.2) and providing suitable evidence. Forms are available at the Departmental Office and Reception desk.

2.7.1 Student Support and Welfare Services

The University's Student Support Network is designed to provide students with quick and easy access to a variety of sources of help and advice on all aspects of life as a student. Personal supervisors in academic departments are responsible for overseeing both academic progress and general welfare. In addition, each college has a welfare team that includes the Provost and a College Dean who has special responsibility for student welfare. Every full-time student is a member of a college and part-time students can request membership of a college. Students may approach their college welfare team for help and advice whether or not they are resident in the college at the time.

Central support services available to all students include the Accommodation Office, the Counselling Service for Students, Disability Services, the Student Support Office, the Equal Opportunities Office, the International Office, the Student Financial Support Unit and the Harassment Advisor Network. In addition, administrative offices such as the Undergraduate and Graduate Students Offices and the Timetabling and Examinations Offices, provide information and advice. Welfare support is also available through the student-run organisations, particularly the Students' Union and the Graduate Students Association.

Information about the student support network and its co-ordination is widely disseminated, so that students seeking assistance in any quarter can, if necessary, be referred quickly to those with the specialist knowledge and skills to help them. The Student Support Services Handbook, issued to incoming students and available at http://www.york.ac.uk/admin/sso/handbook/, describes the main contributors to the Student Support Network and includes information about the Campus Nursery, the Health Centre and the Chaplaincy, which offers a contact for all faiths.

Comprehensive information on student support and welfare within the University can also be found at:

http://www.york.ac.uk/admin/sso/handbook/index.html

2.8. Students in Debt

The level of grant or loan aid to students is barely sufficient to meet basic costs and it is therefore essential to budget carefully and to try to avoid debts.

If you are having difficulty in meeting a bill from the University, do not ignore it because ultimately that will only make matters worse. You should go to the Finance Office to discuss the matter.

If you have debts outside the University that you cannot meet, go to see the Welfare Information Officer. This person has experience of debt counselling and will do everything possible to help you.

2.9. Requests for Documents

Undergraduate Students who require an official University letter, perhaps confirming their student status, Council Tax exemption or to open a bank account should apply to the Undergraduate Office, by completing the form

http://www.york.ac.uk/admin/uo/requdoc4.doc

Similarly, taught postgraduate students should apply to the Graduate Schools Office, with the following form

http://www.york.ac.uk/admin/gso/forms/docrequest.doc

Overseas Students (undergraduate of postgraduate) who require a letter from the Department to support extension of stay in the UK should apply to the Departmental Office in the first instance.

2.10. References

When applying for jobs or courses of further study, students will normally be asked to supply the names of two or more referees who can attest to their character or ability or both. Students normally name a supervisor as one referee. Alternatively, or as a second referee, they may name the Head of Department who, if he does not know them personally, will consult those members of the Department who do.

As a matter of courtesy, students should always seek the permission of the people they would like to write a reference for them, before they name them as a referee.

If a supervisor does not reply promptly to requests for a reference, the problem should be brought to the attention of the Head of Department.

2.11. Departmental responsibility to protect personal information

The Department often gets requests for information about students from concerned parties (such as parents). The 1998 Data protection Act places a responsibility upon the University to keep information about its adult members private. We may not respond to any request for information about an individual without the explicit, written consent of the individual concerned, unless that information is already in the public domain.

If you wish to allow us to discuss your personal affairs with others, you should write to us, telling us so. You may limit the range of whom we may disclose information to (for example, 'my parents', 'only medical staff dealing with my care'), the information we may disclose (for example, 'anything except my term-time address') and the time for which we may do this (for example, 'until I return from Sandwich placement'). The letter will be placed on your departmental file.

Should you later change your mind, you must write to inform us of the fact.

The University's policy is described on the web at:

http://www.york.ac.uk/recordsmanagement/dpa/dppolicy2002.htm;

See especially Section 2.3

http://www.york.ac.uk/recordsmanagement/dpa/dppolicy2002.htm#Disclosing%20Personal%20Data.

2.12. Personal Development

The University has introduced Personal Development Planning (PDP) for its students.

2.12.1 PDP

Computer Science is piloting PDP (along with History, Health Sciences and HYMS). All second year students on the Computer Science (BEng/BSc) and Computer Systems and Software Engineering (MEng) degrees receive information about PDP, have a mandatory PDP-oriented tutorial and other opportunities to discuss their engagement with PDP.

PDP is defined on the University website as a "structured and supported process undertaken by students to reflect upon their own learning, performance and/or achievement and to plan for their personal, educational and career development". (http://www.york.ac.uk/admin/ssdu/pdp/indexpdp.html).

Supervisors are the normal first point of contact for PDP. At the start of each year, students will be asked to engage in a discussion of PDP with their supervisor, with a short note of the discussion being filed via the start-of-term (orange) form. Orange forms will prompt supervisors to ask students informally about PDP at Spring and Summer start-of-term-meeting; however, it is up to each student to decide how to engage with PDP activities and what to discuss with supervisors.

In addition to the normal University and departmental sources of career and personal development advice (see section 2.13 below), there are two websites supporting PDP activity. The University Student Skills Development Unit (SSDu) has a PDP page with links to various other Universities' programme, http://www.york.ac.uk/admin/ssdu/pdp/indexpdp.html. The Department has a PDP page, with useful links, covering professional organisations, volunteering, skills training, clubs and activities. (http://www.cs.york.ac.uk/pdp)

Note that students who have maintained a personal development record (PDR) may wish to incorporate this with their PDP activities at University. Although PDP replaces departmental support for PDR, students should feel able to discuss aspects of PDR as part of any PDP session, and can, if they wish, ask their supervisor to make a specific appointment to do so.

2.12.2 First Year Students

First Year Students receive briefing materials on entry. In the Autumn term, there will be a supervision session on what it means to be a computer science graduate. In the Summer term, there will be PDI lectures related to the careers aspect of PDP.

2.12.3 Second Year Students

Second year students receive information about PDP, and have a PDP-oriented tutorial in the Autumn term.

2.12.4 Third Year Students

Third year non-placement students continue PDP. At the start of the year, they will review PDP with their supervisor. MEng students should consider what it means to be a graduate of a MEng degree.

Any student may request a meeting with their supervisor to discuss their engagement in PDP if they wish.

2.12.5 Returning Placement, Exchange, LoA and combined students

Students returning from placement, North American Exchange, or third year Leave of Absence, (and all students taking the joint degrees with Mathematics), will not take part formally in PDP. However, they may wish to consult the PDP website and request review meetings with their supervisor.

2.13. Careers and Personal Development Advice

There are a number of excellent sources of advice for students needing help with their career plans, skills needs, or other activities not directly related to the degree courses.

Supervisors are not qualified to give detailed advice on career and personal development needs. A supervisor would normally recommend that a student consult the following sources to seek professional advice or training.

2.13.1 Careers Advice

The Careers Service can provide assistance in securing employment after graduation. The staff can provide a wide range of services after graduation, and have extensive experience. They are also approachable: students can either "drop in" for an informal chat, perhaps with the duty Careers Advisor, a receptionist or an Information Officer, or they can make an appointment for an "in-depth" consultation. For further information, students should enquire in person at the Careers Service, or see http://www.york.ac.uk/services/careers. The Department also has a Careers Liaison Officer, whose name is listed in section 6.3.

2.13.2 The York Award

The York Award is a personal development programme for students at the University of York. It addresses "key skills" such as communication, numeracy, improving one's own learning, working with others, information literacy, time management and negotiation. It is supported by several industrial organisations. For further information, see: http://www.york.ac.uk/admin/ya

2.13.3 Languages For All

The Languages For All (LFA) programme offers students the opportunity to take a course in a foreign language in addition to their main subject of study. Languages in the LFA scheme are offered at various levels so a student can continue the study of a language they already know or start a new one. For further information, see: http://www.york.ac.uk/admin/uao/ugrad/studying/lfa.htm

2.13.4 English Language Support for International Students

The English as a Foreign Language (EFL) Unit runs the York English for Academic Purposes Programme to provide English language support for international students. All overseas and EU students enrolled at York on undergraduate or postgraduate courses are eligible for free English language support.

Students can choose whether to take courses, attend workshops or sign up for consultations with one of the EFL tutors. Each eligible student can take one free

course, or the equivalent in workshops or consultations. For more information, see http://www.york.ac.uk/inst/ltc/efl/index.htm

2.13.5 Crash Course on C (CCC)

All non-first year students are invited to attend the Crash Course in C (CCC), which is an unassessed voluntary module taking. Knowledge of C is required for the modules LSA, CGV and CGO and all students who do not already have such background are encouraged to attend this module. It is also useful for students who may choose to use C in their projects or who may be required to program in C on a Sandwich Placement.

2.13.6 Setting up a Business (SUB)

This course aims to introduce a novice to the idea of setting up a company to sell a technology, idea or skill. The aim of module is to provide an overview to what is involved in setting up a business. On completion of the module, students should be able to understand the processes in starting up a company, the problems and pitfalls of doing so and who to approach for the next step. At the end of it, students will still need to take further advice, but should have a better idea of the issues that they will need to address.

2.14. Student Representatives on Departmental Committees

Student representatives for various departmental committees are elected each year during the autumn term (see sections 7.1, 7.8 and 7.5 for further details). The role that student representatives play on these committees is vital and all students are encouraged to consider serving on one or other of these committees.

2.14.1 The student view

The following is a description of what a being a student representative on the Board of Studies involves; it was written by a student representative in 2002.

- Why be a student rep?

Being a student rep allows you to champion the student cause in departmental policy making. You can make a real difference by taking responsibility for ensuring that the department is giving students what they want from it.

In addition, you can gain valuable experience. In an increasingly competitive job market, with the flood of graduates, students need to look for ways of distinguishing themselves. Academic qualifications are a start, but most employers are looking for evidence of skills beyond those. By being a student rep, you can show development of the sorts of skills they want. For example, you can show understanding of how meetings are conducted, and use of communication (listening & speaking) and problem-solving skills.

- What is being student rep about?

There are student reps for each group of students: Research students, MSc students (IT, SWE, SCSE) and undergraduate courses (Maths/CS, 1st Year CS, 2nd Year CS, 3rd Year CS, 4th Year MEng). Student reps are paired with staff reps for guidance. Reps are elected in the autumn term, for that academic year.

Student reps provide the link between the Board of Studies and the students. Each rep is a member of the Board of Studies (BoS) and a sub-committee. As a student rep, you are responsible for voicing student opinion on departmental issues in and out of BoS meetings. For example, if there are problems with a module, you might want to communicate the relevant views directly to the lecturer, or if that has no immediate effect, to bring that matter to the attention of the staff rep for joint action. The final step, if the problem has proved unsolvable thus far, may be to raise the issue for discussion at a committee meeting. Being a student, you are a valued part of the decision making process because of your fresh view on matters. You may also be asked to channel information the other way: from staff/department to students.

- When are BoS meetings held?

BoS and subcommittee meetings are always held on Wednesday afternoons. Two BoS meetings are held a term: during week 2 and week 9. There is one DTC meeting in week 6 of each term and two MTC meetings each term, one in week 3 and one in week 8. A full diary of events, including meetings may be found at:

http://www.cs.york.ac.uk/bos/current/Diary.php

- What are the meetings like?

The meetings are fairly relaxed affairs discussing a list of topics. The topics will be from a pre-distributed agenda: in DTC/ MTC, this includes contributions from the various staff/student pairs. The contributions will be issues that you want to highlight and discuss: for example, problems, along with possible solutions.

- How much of my time will being a student rep take up?

Depending on whether you go to all the meetings, and how much trouble there is with your course, this figure will vary between virtually none, up to two/three hours a week. If you have other commitments then you can be excused attendance by sending an apology to the Secretary of the committee.

2.14.2 Elections for Representatives

Elections take place in the Autumn term, according to the following timetable:

AUT/2/MON/12:00	Nominations open
AUT/2/FR/12:00	Nominations close
AUT/3/MON/12:00	Election starts
AUT/3/FRI/12:00	Election ends

2.15. Visiting Students

This section briefly sets out the pattern of study at York for visiting undergraduate students. Such students are usually registered for a Bachelor's degree at a university in another country. They come to York, perhaps as part of an agreed Exchange Scheme, for a year (or part-year) of their studies.

2.15.1 Terms

Visiting students are expected to be available for teaching and examination from Monday to Friday throughout the term. To be absent except at weekends requires explicit permission.

2.15.2 Supervision

The Department assigns each student a supervisor, who is a member of the teaching staff. As a minimum requirement, the University expects all students to meet their supervisor at the start and end of each term. Visiting students should make contact with their supervisor as soon as possible to discuss their choice of modules. The supervisor and student might then arrange to meet at intervals during the term.

Supervisors combine academic and pastoral supervision. Students who are ill or otherwise hindered in their studies should let their supervisor know straight away. The supervisor is then in a position to help - for example, by putting the student in contact with appropriate professional advisors, or by seeking revised arrangements for any imminent assessments. For further details, see section 2.7.

2.15.3 Modules and credits

Courses of study are divided into modules. In the Computer Science department, almost all modules are arranged to take place either in Part A (autumn term, usually with examinations in week 1 of the spring term) or in Part B (spring term, and first half of the summer term, usually with an examination in weeks 7-9 of the summer term). For further details, see section 14.1.3.

A York undergraduate is expected to take modules totalling 120 credits in each year of study, and visiting students should aim to do the same. The division of credits between Part A and Part B is usually either 40:80 or 50:70.

Visiting students will usually choose modules taken by home students at a similar stage in their degree course. However, it may be possible (subject to academic approval and timetabling constraints) to combine modules across years of the York degree schemes.

Some modules have prerequisites, i.e. prior knowledge or a module that students must have taken previously. A visiting student wishing to take a module with prerequisites should consult the lecturer involved to check whether their prior knowledge is sufficient. For further details, see section 6.1. Some module prerequisites cannot be waived.

Each module is taught only once a year. It is not possible to re-take a module, for example in the hope of obtaining an improved result.

2.15.4 Languages For All

Languages For All modules are available to students across the University, whatever their degree subject. Visitors wishing to take one of these modules as part of their formally credited study in York should consult the Language Centre directly. For further details, see

http://www.york.ac.uk/admin/uao/ugrad/studying/lfa.htm

2.15.5 English Language Support for International Students

The English as a Foreign Language (EFL) Unit runs the York English for Academic Purposes Programme to provide English language support for international students. All overseas and EU students enrolled at York on undergraduate or postgraduate courses are eligible for free English language support.

Students can choose whether to take courses, attend workshops or sign up for consultations with one of the EFL tutors. Each eligible student can take one free course, or the equivalent in workshops or consultations. For more information, see http://www.york.ac.uk/inst/ltc/efl/index.htm

2.15.6 Projects

Most York students in their third or fourth year take a 40-credit or 50-credit project as a major part of their course. These projects are on topics individually selected by students, and supervised one-to-one by staff. Visiting students do not usually do this sort of project, but a visitor wishing to explore the possibility should contact the Chair of the Board of Studies.

The Computer Science Writing (CSW) module can only be taken in conjunction with a project and is thus not normally available to visiting students.

2.15.7 Assessment and marks

Almost all modules taught by the Computer Science Department are formally assessed. Visiting students are required to take the same assessments, at the same times, as home students. In particular, visiting students should note that autumn term closed papers are taken in the January of the following year and spring and summer term closed papers are taken in June of the same year.

Visiting students with special impairments may be entitled to special conditions for the completion of assessments (both open and closed). University practice requires a written case supporting a request for such conditions to be submitted to the University Standing Committee on Assessment by the Department's Disability Advisor (see section 6.3) on behalf of the Chair of the Board of Studies. Students with special impairments should first consult their supervisor, and then supply written evidence of their needs as soon as possible after arriving at York. For further details, see section 7.1.

2.16. Departmental Seminars

The Department organizes a programme of seminars during each academic term. Seminars are open to all members of the Department, and students of all years are particularly encouraged to attend. The member of the Department responsible for the organization of these seminars is given in section 6.3. In addition, some research groups within the Department organize their own series of seminars. Information on all seminars is available through the web page:

http://www.cs.york.ac.uk/seminars/

2.17. Departmental Functions

The Department organizes a number of receptions throughout the academic year. The exact details vary from year to year but usually include

Leaving reception for end of MSc courses	September - date varies
Joining reception for start of MSc courses	Aut/1/Fri
Reception for new first year undergraduates	Early October - date varies
Graduands' reception	Degree Day - dates vary

Further information about departmental functions can be obtained from the Departmental Functions Co-ordinator (see section 6.3).

2.18. Departmental Sport Activities

The Department organizes a number of sports events throughout the year, including the Staff vs Students football and the Staff vs. Students cricket matches that are held towards the end of the year.

2.19. Libraries and Bookshops

There are two places within the University from which books, journals, videos and other physical information resources can be obtained.

1) University (J.B. Morrell) Library. This is the main source of books and periodicals. Funds are allocated to each department annually for the purchase of new books and the subscription to new and existing journals. See the literature distributed by the Library for further details. The catalogue of the University Library is accessible via the Web http://www.york.ac.uk/services/library/
2) University Bookshop. The bookshop is operated by Blackwell's University Bookshop Ltd, a branch of Blackwell Retail Ltd. It is an independent commercial concern, for which the University is not responsible in any way. The Department informs the bookshop what texts it will be recommending, when, and to how many students, but the bookshop staff decides what to get in stock.

Copies of project reports and theses written by students in this Department may be borrowed from the Departmental Library. For further information, consult the Departmental Librarian (section 6.3), or see

http://www.cs.york.ac.uk/library/index.php

The name of the member of the Department with overall responsibility for library and bookshop matters is given in section 6.3. Please direct any suggestions or requests to that person. That person is the Department's representative on the University Library Users' Committee as well as being the Department's liaison with the bookshop. Suggestions for additions to the stock of each of the libraries or the bookshop should be directed to that person. See also the Library and Bookshop Liaison pages at:

http://www.cs.york.ac.uk/books/

3. Regulations

The Department will treat the breach of any of these regulations, or any of the university's regulations as a serious disciplinary matter.

3.1. Smoking

The Department of Computer Science is a non-smoking Department. This means that smoking is not allowed anywhere in the Department, in buildings, in terminal classrooms, in lectures or during any other teaching activity given by a member or members of the Department.

Students and staff are required to abide by the University's policy on smoking. Smoking is permitted outside the building. Smokers must not smoke near to, or underneath, office windows, or close to the building entrances. Ashtrays are provided outside the building so that smokers can dispose of their cigarettes conveniently.

3.2. Departmental Letterhead

The Departmental letterhead may only be used on official departmental business: it must not be used for incidental personal correspondence or for private dealings with companies or organizations. College notepaper is available for personal use: this should be used when a student wants to use printed University stationery. A supervisor may give a student specific permission to use the Departmental letterhead if they conduct official correspondence, e.g. as part of an individual project.

3.3. Damage to or Theft of Library Books

It is an offence to write in, mark or otherwise deface library books or periodicals. Anyone found to have done so will be charged for the full replacement and administrative costs, and may be subject to further penalties. Theft is treated as a serious disciplinary offence.

3.4. Photocopying

The photocopying of material in copyright is restricted under law. In brief, single copies may normally be made of individual articles from journals or of relatively short extracts from books or other written works, provided the copy is intended for your research or private study. Otherwise, permission will need to be obtained from the copyright owner before a photocopy or photocopies can be taken. In cases of doubt, the Registrar's Department should be consulted.

The Department has one photocopier for taught course students' use and several others that may be used by members of staff and research students. The cost per page is less than elsewhere on campus, and they can do duplex (two-sided) copies. Pre-payment cards are available from the Departmental Office and only cards that you have paid for should be used. Other photocopiers are available in the University Library.

3.5. Departmental Computing Facilities

All new undergraduates, taught-course postgraduates and research students are given a printed copy of these regulations, which set out the terms and conditions under which the Department's computing facilities are made available to students, and they are required to sign a declaration stating that they have read, understood and agree to abide by these regulations before they are issued with an account on the Departmental computers.

These regulations change from time to time to reflect changes in technology and the relevant law. The current version can be found at

http://www.cs.york.ac.uk/support/studreg.php,

whilst the regulations listed below are those that were in force as of January 2007.

1) Departmental computing facilities must be used only within the Regulations and Guidelines issued by the University's Computing Service. The following regulations apply in addition to the University regulations.
2) You may use the computing facilities administered by the Department of Computer Science only if (i) you are a student registered for one of the Department's undergraduate degree courses (that is, the courses in *Computer Science*, *Computer Systems and Software Engineering*, *Management Information Technology and Language* and *Computer Science/Mathematics*), (ii) you are an MSc/MRes/Diploma/Certificate student on one of the courses in *Bioinfomatics*, *Information Technology*, *Natural Computation*, *Safety Critical Systems*, *Software Engineering*, *Systems Safety Engineering* or *Embedded Control Systems - Gas Turbine Control* (iii) you are a research student registered in the Department, (iv) you are a visiting student attending Computer Science modules, or (v) you have written authorisation from the Department of Computer Science.
3) Your authorisation to use the facilities of the Department is deemed to be withdrawn at the end of your course or period of registration, and any information stored beyond the end of the authorised period may be destroyed without notice. Information may be retained centrally by prior arrangement with the Department.
4) The username and resources allocated to you are for your use only, and you will be held responsible for their use.
5) You must use the username and resources allocated to you only for work related directly to your course of study. Personal work may only be undertaken subject to the Regulations.
6) You must not make use of usernames and resources allocated to other users.
7) You must not connect any items of personal electrical equipment (including laptop PCs) to the mains supply in the Department unless that equipment has been electrically safety-tested by the Departmental hardware staff. You must not unplug from the mains any item of Departmental equipment in order to plug in electrical equipment of your own.
8) You must not attempt to connect personal computers or other equipment to the Departmental network or computers (other than by USB) unless given explicit permission to do so by the Laboratory & Facilities Manager. Permission is automatically granted to connect via wireless, or by Ethernet cable (in the student common room, CS/002, only) if you observe the further regulations posted on the Web page http://www.cs.york.ac.uk/support/wireless.php.

9) You are reminded that under the terms of the Computer Misuse Act 1990 it is a criminal offence (i) to cause a computer to perform any function with intent to secure access to any program or databases held in any computer when it is known that the access is unauthorised, (ii) to use a computer in the commission of a further, more serious offence, such as fraud or blackmail, and (iii) to make an unauthorised modification of data or programs held in computers or storage media (for example, by introducing a virus).
10) Departmental facilities are to be used for the activities and purposes for which they are assigned, and are not to be used for commercial purposes without written authorisation from the Department. In these cases the Department may require payment of appropriate fees.
11) The Department reserves the right to modify or withdraw privileges and access to resources.
12) Breaches of these regulations will be regarded as disciplinary offences and dealt with under the University disciplinary procedures as laid down in the Ordinances and Regulations. If disciplinary proceedings are brought against you under these regulations, the Head of Department may exclude you from access to all Departmental computing facilities pending the outcome of such proceedings. Offences under the Computer Misuse Act 1990 are punishable by substantial fines and terms of imprisonment.

3.6. Data Protection Act

The Data Protection Act 1998 came into force on 1 March 2000 and is concerned with

- the right of individuals to gain access to personal information held about them by an organisation or individual within it
- the right to challenge the accuracy of data held.

The terms of the Act relate to data held in any form, including written notes and records as well as electronic data. In accordance with the University Policy on Data Protection, it is the duty of students to ensure that any information provided by them to the University is accurate and kept up-to-date. Any student who is processing personal data about members of staff or other students, such as a student representative on a University committee or group, or a secretary of a student society, must ensure that they comply with both the University Policy and the requirements of the Act; it should be noted that this also applies to personal data about individuals held on web pages or accessed via them. More information on the Data Protection Act and the University's Policy, Procedures and Guidelines can be found at:

http://www.york.ac.uk/recordsmanagement/dpa/dppolicy2002.htm

3.7. Software Misuse Act

The Department takes an extremely serious view of any student who attempts to decrypt the password file on any computer system. Students are reminded that it is a criminal offence (under the Software Misuse Act 1990) to cause a computer to perform any function with intent to secure access to files when it is known that the access is unauthorized. Possession of programs that, if executed, would attempt to decrypt the password file will be taken as evidence of intent to secure unauthorized access.

The Department takes an extremely serious view of any student who indulges in anti-social behaviour in their use of the Department's computer systems. These systems are provided as an important and general-purpose resource that has to be shared amongst all students. Any student who maliciously prevents other students from accessing the computer systems is liable to exclusion from those systems.

3.8. Libellous Statements on the Internet

Legal opinion is of the view that the Internet is a means of publication and that statements made in this medium may be regarded as libellous. Posting an article to a Usenet news-group or Web forum and the setting up of a page on the World Wide Web constitute publication in the eyes of the law.

Under English law, both the distributor (the University) and the author of a libel can be held responsible for the libel.

Potential damages from such libel actions could be high, as a large number of people world wide have access to any libellous statements and these people are likely to be those working in the area of the person libelled. That is, the libel is distributed to a highly focused group on which it is likely to have the maximum effect.

No information may be transmitted internally or externally which could bring the University or Department into disrepute, or which contravenes laws, University or Departmental policy or conventions on equal opportunities. Information is understood to include text, images and sound. Transmission is understood to include printing information, posting information via electronic mail and bulletin boards such as Usenet News and Web fora, and providing information on distributed systems such as the World Wide Web.

The University expects that all publications—paper and electronic—will uphold the normal high standards of scholarship and debate.

4. Health and Safety

4.1. Introduction

The University's aim is to provide and maintain a safe working environment, which is without risks to health and offers adequate facilities and arrangements for the welfare of staff and students. It is the duty of all individuals to exercise personal responsibility, to familiarize themselves with Departmental instructions regarding safety procedures, and to do everything possible to prevent injury or damage either to themselves or to others. Information about safety and welfare matters is located on a notice board outside room CS101.

The University also regards harassment as a serious matter. Where serious allegations of harassment are proved by a formal investigation, disciplinary action (including dismissal or expulsion) may be taken against the harasser. In addition to any penalty imposed by the University, those responsible for harassing others may be subject to criminal and/or civil proceedings.

See:

http://www.york.ac.uk/admin/eo/harassmt.htm

for further details.

4.2. First Aid

4.2.1 Departmental First-Aiders

A current list of all First Aiders is displayed adjacent to the disabled toilet on the first floor. The departmental First Aiders can be e-mailed at <firstaiders@cs.york.ac.uk>. Departmental First-Aiders include:

Name	Room	Telephone
John Murdie	CS121	2752
Lindsay Maxwell	CS121	2751
Oleg Lisagor	CS120N	4728
Mark Nicholson	CS119J	2789
David Pumfrey	CS119I	2735
Marc Thomas	CS010	2758
Carol Lock	CS121	2753

4.2.2 First-Aid boxes

Ground floor:	In main corridor between CS006 and CS007 In CS009 (Hardware Teaching Laboratory) In CS010 (Hardware Workshop) In CS011 (Hardware Teaching Laboratory)
First floor:	Outside CS115 (disabled toilet, near the lift)
Second floor:	Outside CS201M (near the lift) In kitchen area at east end

4.3. Doctor or Ambulance

If an ambulance is required, dial 9-999 from any telephone. Then inform University Central Control on extension 3333 (day or night).

If a doctor is required, day or night, dial the University emergency number (ext. 3333)

Further help and advice on healthcare issues is available from NHS Direct (tel: 9-0845 4647, http://www.nhsdirect.nhs.uk).

The Health Centre, located close to the Physics Building and Central Hall, is open only during office hours; its extension is 3290. It will not normally deal with accidents.

The nearest Accident and Emergency department can be found at York District Hospital, Wigginton Road (tel: 9-631313). An NHS Walk-in Centre is situated on Monkgate (tel: 9-674557). All accidents must be reported to the Departmental Safety Officer (See section 6.3).

4.4. Fire and Other Emergencies

When the fire alarm is heard it is your responsibility to vacate the building quickly (without running) and quietly. In the laboratories, the supervising technician may direct your exit but it is your responsibility to know the location of the emergency exits. The assembly points for the Computer Science Department are:

- For those leaving on the north side of the building (from exits at first and second floor level) - the path across the front of the building before the car park
- For those leaving on the south side of the building (from exits at ground floor level) - in front of the University Library (J.B. Morrell Library).

Do not re-enter the building until given permission to do so by a fire marshal.

The fire alarms are tested each Monday morning at approximately 9.45am. When the alarm sounds briefly at this time, it is not necessary to evacuate the building.

4.5. Security

There have been a number of burglaries in the Department and valuable equipment has been stolen. If you are working in the Department outside office hours, it is in your own interest:

- To contact Security immediately if you are suspicious or concerned about any strangers seen wandering in the building – red autodial telephones are located in CS006 and CS007
- To ensure that the external doors are locked after you have entered or left the building
- Not to open an external door to any stranger
- Additionally, two sets of panic alarm buttons are also located adjacent to the doors of CS006 and CS007. If pressed these will automatically alert Security to a problem.

4.6. General Safety

You are required to take reasonable care for the health and safety of yourself and others who may be affected by your actions or inactions. Make sure that you familiarize yourself with the following:

- University notices giving instructions on the action to be taken in cases of emergency, which are posted in the laboratories and elsewhere in the building
- "First Aid at Work" notices displayed in the laboratories
- The position of Emergency Exits
- The position of First-Aid boxes
- The position of the main power switch controls and emergency cut-outs

Food and drink must not be consumed in the laboratories. Footwear must be worn at all times. Mobile phones may not be used in any part of the building. Technicians may refuse admittance to a laboratory or workshop to any person who:

- Is unsatisfactorily dressed
- Refuses to use the safety equipment provided (e.g. guards on drills)

4.6.1 Good practice for working with PCs

A poster is displayed in each of the three software teaching laboratories entitled "Working Comfortably?" The intention of the posters is to draw attention to good practice when working at a computer. Specifically this relates to:

- Your posture
- The height of your arms in relation to the keyboard
- The angle of the screen

You are required to take time to study the posters and to adjust your chair, screen and keyboard as suggested; a few simple modifications to your working environment can help eliminate pain and discomfort in various parts of your body and reduce the chances of developing a more serious upper-limb disorder.

4.6.2 Hardware teaching laboratories

1) Safety in the hardware teaching laboratories (CS009 and CS011) is the responsibility of the supervising member of the academic staff, hereinafter called the supervisor.
2) Neither demonstrators nor technicians can be responsible for the safety of undergraduate students.
3) In principle, the supervisor should be present at all times when students are present. This does not preclude brief absences for good reason. In exceptional cases, longer periods of absence are acceptable, provided that the supervisor "drops in" frequently to make sure that all is well.
4) An exception is made for open laboratory classes, which have been classified by the Departmental Safety Officer as "low-risk". (An example is the time spent by students in the laboratory working on their MCP projects, outside scheduled practical sessions.) In such cases, the supervisor must conduct a risk assessment and agree it with the Departmental Safety Officer (section 6.3).

4.6.3 Electrical safety

Students who are required to build electronic equipment as part of their project will be supervised by the Head of Hardware Support (see section 6.3). The design of such equipment must be approved by your supervisor and built to the standards of the University Safety Regulations, a copy of which can be obtained from the Departmental Librarian or the Laboratory and Facilities Manager (see section 6.3). Electrical equipment for your project brought in from outside (e.g. from your sponsor) must be tested and approved before use. You may not bring in electrical equipment for repair.

Mains voltages may be present in almost any item of equipment. In particular, computer terminals, oscilloscopes and other cathode ray tube displays will have voltages present in excess of 10 kilovolts. Undergraduates are not permitted to remove the cases of equipment, or to wire mains plugs or to replace mains connectors or fuses, unless directed by a technician or other member of staff.

All devices that contain cathode ray tubes should be treated with care; if a tube breaks there will be a vacuum implosion, which may cause others, as well as yourself, to be blinded.

In the event of someone experiencing an electric shock, switch off the current at the main power switch. This switch controls all power except the cleaners' wall sockets and the ceiling lights. Be careful not to touch the casualty's skin before the current is switched off. If breathing is failing or has stopped, you must start resuscitation immediately and shout for assistance. Note the time. Continue resuscitation until breathing is restored. You must not leave a casualty alone (unless you are yourself in danger if you remain) as they may stop breathing again or they may be unconscious and be unable to keep their airway open. Anyone who has required resuscitation must go to hospital.

5. Departmental Computing Facilities

5.1. Staff Responsible for Computer Systems

The member of staff with overall responsibility for the computer systems is the Laboratory and Facilities Manager. Software on the machines is in the charge of the Software Experimental Officers assisted by the Software Technicians. Hardware is the responsibility of the Hardware Technicians. For more details, see section 6.3.

5.2. Equipment

The Department operates several compute / file servers for use by students. They are:

Name	Use	Type of server	Operating System	Users
Hercules	Compute / File	Sun Fire V240	Solaris 9	Undergraduates and MSc
Milan	Compute	P4-based PC	Slackware Linux 10.0	Undergraduates and MSc
Aurora	File	Dual Opteron-based PC	Windows Server 2003	Undergraduates and MSc
Turin	Compute	P4-based PC	Slackware Linux 10.0	Undergraduates and MSc

PC Workstations for access to the above systems are located as follows:

Room	Workstation	No.	Operating System	Users
CS001	PC	18	Windows XP/Linux	Modular MSc
CS006	PC	49	Windows XP/Linux	Undergraduates/MSc
CS006	PC (''Ios'')	1	Linux	Student file transfer
CS007	PC	49	Windows XP/Linux	Undergraduates/MSc
CS007	PC (''Io2s'')	1	Linux	Student file transfer
CS009	PC	27	Windows XP/Linux	Class/project use
CS011	PC	28	Windows XP/Linux	Class/ project use

As shown in the tables above, computing facilities are made available for certain classes of student, or for certain types of use only. Unauthorized use is not permitted.

5.3. Network Facilities

5.3.1 Electronic mail (e-mail)

All staff - lecturers, administrators, experimental officers and technicians - can be reached by electronic mail. Their user names, together with their internal telephone numbers and their room numbers, are available using the phone command on the departmental Unix/Linux systems. For example:

```
$ phone wright
Peter       Wright       (pcw)(PCW)    CS203F       2741
```

This information can also be accessed on the Web

http://www.cs.york.ac.uk/carphone/carphone.html

Lecturers' e-mail addresses are also listed in the "Lecturers" section of the on-line Handbook (see section 6.1).

5.3.2 World Wide Web

Both the Department and the University have a presence on the World Wide Web. Students will be taught how to use a Web browser in an introductory course on the use of the Department's computers if they are not already familiar with one. Most lecturers have a "home page", and many use the Web as a means of distributing course information. The following URLs (Web addresses) will be found useful:

URL	Description
http://www.york.ac.uk/	The University's home page
http://www.cs.york.ac.uk/	The Department's home page
http://www.cs.york.ac.uk/hdbk/	On-line version of this Handbook
http://www.cs.york.ac.uk/support/	Departmental technical support
http://www-course.cs.york.ac.uk/	Course-related teaching material
http://www-course.cs.york.ac.uk/exam/	Past exam papers

5.3.3 Web Forums

Students should regularly read the appropriate Web forums from the following list for information about course-work and for general announcements. These can be accessed via the URL http://www.cs.york.ac.uk/forum/index.php

Forum	Who should read
Student	All Students
Undergraduate First Undergraduate Second Undergraduate Third Undergraduate Fourth	First-year undergraduates Second-year undergraduates Third –year undergraduates Fourth-year undergraduates
MSc IT MSc NC MSc SCSE MSc SWE	MSc IT students MSc NC students MSc SCSE students MSc SWE students

5.4. Technical Support

Information can be found on the "support" pages on the World Wide Web at the URL (web address):

http://www.cs.york.ac.uk/support/

For assistance with matters concerning departmental computing facilities, contact the Support Staff by e-mail at one of the following addresses:

- e-mail faults@cs.york.ac.uk to report problems with printers or photocopiers and other obvious hardware problems
- e-mail recover@cs.york.ac.uk to ask for deleted files to be recovered

- e-mail support@cs.york.ac.uk with reports of other problems, and with requests for assistance (but see below)

The "support" Web page has an introductory section that explains how you should go about requesting assistance. If you have a question about how to do something, before e-mailing it to "support" you should look at the "support" Web pages to see if you can find the answer there.

The progress of a "support" request can be tracked using the SQUINT system:

http://www.cs.york.ac.uk/support/squintuse.php

5.5. Computer System Availability

The computer systems run 24 hours a day seven days a week, except for occasional periods of maintenance of which users are warned in advance by computer systems' "message of the day" and by notices on system status whiteboards. Note that these systems run unsupported outside of normal working hours. Any problems that arise outside working hours will not be addressed until the start of the following working day.

When machines are unavailable because of a hardware or software failure, those machines still working will carry a notice of the problem. In addition, a notice will normally be posted on the student system status whiteboard opposite room CS002.

5.6. Security of Undergraduate Files

It is Departmental policy that if a student is suspected of abusing the Departmental computer system, an authorised member of the software staff has the right to examine the contents of any computer file used by that student on the Departmental computer system. The member of the software staff who is carrying out the investigation will inform the student's supervisor and the Head of Department, and in certain cases the Chair of the Board of Studies, if there is evidence of abuse.

The contents of the relevant file(s) may be seen by other staff members of the Board of Studies only if the abuse is of such a serious nature that it must be considered at a full meeting of the Board.

Any such investigations will be carried out strictly in accordance with the terms of the Regulation of Investigatory Powers Act (2000).

5.7. Printing Facilities

The Software Teaching Laboratories contain laser printers for self-service student use. A charge is made for laser printing. For details, see the Support web page "Student Printing":

http://www.cs.york.ac.uk/support/studprint.php

The Computing Service student print queues are also available from Computer Science's computer systems. Computing Service charges separately for the use of their printers.

Please be considerate in your use of the printers. Paper is expensive; do not order printouts that you will not use. Avoid printing large jobs at peak times and remember to collect your printout once it has been printed.

At certain times, the print queues in Computing Service are substantial, causing severe delays in receiving your printout. Students should bear this in mind relative to any assessment hand-in dates.

5.8. Documentation

A wide range of documentation is available on-line, and can be accessed from the "support" web pages at:

http://www.cs.york.ac.uk/support/

You will be given a variety of printed documentation in an introductory course on the use of the Department's computers, and you will be shown how to use the on-line documentation of the operating systems in use. The availability of printed documentation specific to a module will be announced in lectures.

5.9. Use of Laboratories

The teaching laboratories are:

Room	Description
CS001	Modular MSc Teaching Laboratory
CS006	Software Teaching Laboratory 1
CS007	Software Teaching Laboratory 2
CS009	Hardware Teaching Laboratory 2
CS011	Hardware Teaching Laboratory 1

Food and drink must not be consumed in any laboratory. No unauthorized persons are permitted in any laboratory.

5.9.1 Software teaching laboratories

The main software teaching laboratories (CS006 and CS007) are shared by undergraduates, MRes BI, MSc NC and MSc IT students. Access to them is on a 24-hour basis to holders of the appropriate card key who are authorized to know a main door entry code at the discretion of the technical staff present. When practical classes take place in the Software Teaching Laboratories and not all computers are needed by students attending the class, the spare PCs are generally available for casual use.

To minimize disruption, students attending a class are asked to prefer PCs located towards the front of the room, so that spare ones at the back may be used by casual users.

There is one exception to the above rule. Occasionally, a practical is also a timed examination (an assessed practical, see section 14.4). Casual use of the laboratory is not permitted during an assessed practical of this sort, as it could compromise the

examination arrangements. Notices' stating that such an assessed practical is in progress, with start and finish times, will be displayed on the doors to the laboratory.

5.9.2 Hardware teaching laboratories

Access to the hardware teaching laboratories is permitted only when a member of staff is present. Access to the Hardware Teaching Laboratories during a timetabled practical session is restricted to students who are attending the scheduled practical. See also section 14.4.

5.10. Use of Departmental Computer Systems

Students' use of Departmental computer facilities is restricted to work related directly to their course of study and is subject to a strict quota on the amount of disk space available to each user. Access to the regular Internet is provided free of charge, but students may be invoiced for any additional charges arising from their use of the network. Students must not use Departmental computer facilities for financial gain.

Attempts to interfere with the Department's networks or computers or the accounts and files of other users will be treated as system abuse and dealt with accordingly.

At the start of their first academic year, all student users will be issued with a copy of the regulations that govern the use of the Department's computer systems, and they must sign a form to say that they have read and understood these rules and agree to abide by them. Only then will they be issued with an account (user name and password) for the computer systems, and a card key and entry code for the building. The Department employs the same user names allocated for the use of the Computing Service systems, but the Computer Science and Computing Service accounts are separate and will have different passwords. The card key and entry code allow students 24-hour access to the Software Teaching Laboratories via the main entrance on the lowest floor of the building. Students who abuse the computer systems will have their computer accounts withdrawn and their card keys recalled.

Students must not interfere with Departmental equipment (including PCs, printers and scanners), and should report any problems with such equipment by sending an e-mail to "faults". Students should never press the power button or the reset button of a PC while it is running an operating system because this breaks the system software and can damage the user's own files. If they wish to switch to running another operating system on the PC, there are posters on the walls in the laboratories giving instructions on how to do this. Students must not lock PC screens if they intend to be away from the PC for more than a few minutes - leaving screens locked for longer than this is highly anti-social. Students should try to avoid touching PC screens with their fingers because it leaves marks, which make the screen contents harder to see.

Information on good practice for working with PCs can be found in section 4.6.1.

Personal computers (laptops and PDAs) may be connected to the Department's network by wireless connection in the building or by using the network sockets in CS002; connection by any other method is strictly forbidden (see section 3.5 item (**Error! Reference source not found.**). For details of the departmental wireless network see:

http://www.cs.york.ac.uk/support/wireless.php

Section 3.5 contains a full list of the terms under which the Department's computing facilities are made available to students.

5.11. Responsible use of The Internet

Computer networks in general, and the Internet in particular, provide many opportunities to share information, conduct debates and investigations, and facilitate communication throughout the world. Hitherto, discussions via bulletin boards, newsgroups etc have been conducted largely by the technical experts in a given area and have developed their own culture in which robust criticism and opinion stated as fact have become the norm. This approach has been satisfactory provided everyone knows the rules and is happy to abide by them. With the rapid growth of the Internet, however, many more people have access to this information without the cultural background and some issues are arising which could have far-reaching consequences. In particular, cases have been reported in which the statements made on the Internet by one person have been construed as libellous by another and writs have been issued. Since the statements made on bulletin boards and newsgroups can be read by many people, this is considered a means of publication and the normal legislation applies, including the laws of libel. In one of the reported cases, a company whose alleged business practices had been criticised took action under American law and initiated a libel action. In the second case, an individual in the UK issued a writ against a fellow scientist for alleged defamatory remarks made across the Internet. Under English law, the distributor of a libel can also be held responsible and there has been a threat to issue a writ against a group of Canadian universities. Potential damages from such libel actions could be high, as a large number of people worldwide have access to any libellous statements and these people are most likely to be those working in the area of the person libelled, i.e. the libel has been distributed to a highly focused group on which it is likely to have the maximum effect. All these issues need to be tested in the courts, but legal opinion is strongly of the view that the means of publication- electronic or paper - is immaterial to the libel and hence that appropriate cases may well succeed. It is thus essential to be aware that any electronic communication to a group of people could be considered as publication and hence that the relevant law applies, including the law of libel. Regardless of whether the University could be considered a distributor, the University expects that all publications will uphold the standards of scholarship, debate and publication promoted by the University. Use of the Internet and other networks offers great potential for research and for crystallising ideas and theories. With the continuing responsible approach of those at York, these advantages may be enjoyed without contravening any legislation and incurring penalties.

6. Staff

6.1. Internal Teaching Staff

The following table shows the names and acronyms of all permanent members of academic staff who are members of the Board of Studies in Computer Science (at the time of going to press)

Name	Acronym	Room	E-mail	Ext.
Mr. Richard Allarton	RJA	CS120L	rja@cs.york.ac.uk	2791
Dr Neil Audsley	NCA	SBD116	neil@cs.york.ac.uk	2787
Professor Jim Austin	JA	IT Centre	austin@cs.york.ac.uk	2734
Dr Chris Bailey	CB	CS201L	chrisb@cs.york.ac.uk	2739
Dr Iain Bate	IJB	SBD127	ijb@cs.york.ac.uk	2786
Dr Ian D Benest	IDB	CS203H	idb@cs.york.ac.uk	2736
Dr Guillem Bernat	GB	SBD129	bernat@cs.york.ac.uk	2772
Dr Adrian G Bors	AGB	CS201F	adrian@cs.york.ac.uk	2780
Professor Sam Braunstein	SLB	CS202F	schmuel@cs.york.ac.uk	4720
Professor Alan Burns	AB	SBD101	burns@cs.york.ac.uk	2779
Dr Ana Cavalcanti	ALCC	CS202H	alcc@cs.york.ac.uk	2813
Professor John A Clark	JAC	CS201B	jac@cs.york.ac.uk	3379
Dr James Cussens	JC	B/S111 Biology	jc@cs.york.ac.uk	4732
Dr Alistair D N Edwards	ADNE	CS203E	alistair@cs.york.ac.uk	2775
Dr Mike Freeman	MJF	CS210G	mjf@cs.york.ac.uk	2760
Dr Alan M Frisch	AMF	CS201A	frisch@cs.york.ac.uk	2745
Professor Edwin R Hancock	ERH	CS201G	erh@cs.york.ac.uk	3374
Dr Jeremy L Jacob	JLJ	CS203L	jeremy@cs.york.ac.uk	2747
Dr Dimitar L Kazakov	DLK	CS202A	kazakov@cs.york.ac.uk	4775
Dr Tim Kelly	TPK	CS120E	tpk@cs.york.ac.uk	2764
Mr Chris Kimble	CK	CS119F	kimble@cs.york.ac.uk	3380
Dr Steve King	SK	CS202G	king@cs.york.ac.uk	3068
Dr Daniel Kudenko	DK	CS202B	kudenko@cs.york.ac.uk	4776
Dr Gerald Luettgen	GL	CS203K	luettgen@cs.york.ac.uk	4774
Dr Suresh Manandhar	SKM	CS201C	suresh@cs.york.ac.uk	2746
Dr Ling Ma	LM	CS203G	ling@cs.york.ac.uk	4751
Professor John McDermid	JAM	CS120B	jam@cs.york.ac.uk	2726
Mr Sergio Mena de la Cruz	SM	CS202G	smenadel@cs.york.ac.uk	8556
Dr Mark Nicholson	MN	CS119J	mark@cs.york.ac.uk	2789
Dr Simon O'Keefe	SOK	CS201I	sok@cs.york.ac.uk	2762
Dr Richard Paige	RFP	CS119G	paige@cs.york.ac.uk	3242
Dr Ioannis Patras	I_P	CS201D	yiannis@cs.york.ac.uk	4733
Dr Nick E Pears	NEP	CS201K	nep@cs.york.ac.uk	2730
Professor Helen L Petrie	HLP	CS203C	petrie@cs.york.ac.uk	4336
Dr Jon Pickering	JHP	CS201N	jhp@cs.york.ac.uk	4723
Dr Detlef Plump	DP	CS203J	det@cs.york.ac.uk	4778

Name	Acronym	Room	E-mail	Ext.
Dr David Pumfrey	DJP	CS119I	djp@cs.york.ac.uk	2735
Dr Fiona A C Polack	FACP	CS203M	fiona@cs.york.ac.uk	2798
Professor Colin Runciman	CR	CS202D	colin@cs.york.ac.uk	2740
Professor Susan Stepney	SS	CS119M	susan@cs.york.ac.uk	2781
Dr Savita de Souza	SDS	CS119I	savita@cs.york.ac.uk	2735
Dr Jonathan Timmis	JT	CS119D	jtimmis@cs.york.ac.uk	2348
Dr Malcolm Wallace	MW	CS119A	malcolm@cs.york.ac.uk	3384
Professor Andy J Wellings	AJW	D114	andy@cs.york.ac.uk	2742
Dr Richard Wilson	RCW	CS201E	wilson@cs.york.ac.uk	4726
Dr Alan M Wood	AMW	CS203N	wood@cs.york.ac.uk	2776
Professor Jim Woodcock	JCPW	CS202I	jim@cs.york.ac.uk	4335

Rooms starting 'SBD' are located in Sally Baldwin D block first floor. Rooms 'BS' are in a Portakabin situated in Biology and some are also situated in the IT Centre

6.2. External Lecturers

The following table shows the names and acronyms of all lecturers on Computer Science modules that are not members of the Board of Studies in Computer Science.

Name	Acronym	E-mail
Freeman, W. (Computer Science)	wf	wf@cs.york.ac.uk

6.3. Administrative Responsibilities

Those departmental administrative responsibilities of members of the Board of Studies and other members of staff with which students are most closely concerned are listed below.

Senior Administrative Responsibilities	Name(s)
Head of Department	Professor John A McDermid
Deputy Head of Department (Teaching)	Dr Steve King
Associate Head of Department (Heslington East Strategy)	Professor Susan Stepney

Administrative Responsibility	Name(s)
Admissions Tutor (Modular MSc)	James Cussens, Carol Nicholls
Admissions Tutor (MSc IT)	Suresh Manandhar, Carol Nicholls
Admissions Tutor (Research Degrees)	Colin Runciman, Filomena Ottaway
Admissions Tutor (Undergraduate)	Tim Kelly, Jenny Baldry
BCS Liaison Officer	Alan Burns
Bookshop Liaison	Adrian Bors
Careers Liaison Officer	Gus Vigurs
Chair, BoS	Chris Kimble
Chair, BoE	John Clark
Chair, DTC	Fiona Polack
Chair, MTC	Alan Wood

Administrative Responsibility	Name(s)
Course Coordinator, Modular MSc	Alan Wood
Course Organizer, MSc IT	Iain Bate
Course Organizer, MSc NC	Simon O'Keefe
Course Organizer, MSc SWE	Gerald Luettgen
Course Organizer, MSc SCSE	Mark Nicholson
Data Protection Officer	Corrie Allan
Departmental Administration Manager	Marysia Koc
Departmental Finance	David Hull
Departmental reports (yellow)	Andy Wellings
Disability Advisor	Jeremy Jacob
Display Screen Equipment Assessment Co-ordinator	Diane Neville
Examinations Officer	Marysia Koc
Examinations Administrator	Chris Linfoot
Functions Co-ordinator	Truda Counsell
General Office Manager	Anne Edwards
Graduate Administrator	Filomena Ottaway
Graduate Student Recruitment	Gerald Luettgen
Harassment Advisors	Fiona Polack, Katrina Attwood
Head of Department	John McDermid
Head of Hardware Support	Peter Cooper
Head of Software Support	David Snowden
Higher Education Academy (Dept Contact)	Ian Benest
IET Liaison Officer	Ian Benest
IEEE Student Adviser	Ian Benest
Industrial Placements Consultant	Gus Vigurs
Laboratories, Teaching	David Hull (Laboratory & Facilities Manager)
Librarian, Departmental	Ian Patrick
University (J.B. Morrell) Library Liaison	Adrian Bors
North America Exchange Co-ordinator	Alan Frisch
Options Co-ordinator	Truda Counsell
PDS Co-ordinator	Gus Vigurs
Postgraduate Programmes Manager	Louise Earnshaw
Prizes, Postgraduate	Richard Paige
Prizes, Undergraduate	Richard Paige
Project Co-ordinator, Selecting	Dimitar Kazakov
Project Co-ordinator, Marking	Alistair Edwards
Project Presentations	Adrian Bors
Reception Administrator	Pauline Greenhough
Research Support Office Manager	Ginny Wilson
Returning Officer	Alistair Edwards
Safety Officer	David Hull
Secretary, BoS	Richard Paige
Secretary, BoE	Daniel Kudenko
Seminar Co-ordinator	Alan Frisch
Senate	John McDermid, Fiona Polack, Steve King

Administrative Responsibility	Name(s)
Sponsorship	Gus Vigurs
Staff Representative (First year students)	Ian Benest
Staff Representative (Second year students)	Richard Wilson
Staff Representative (Third year students)	Sergio Mena
Staff Representative (CS/Maths students)	Richard Wilson
Student Records Co-ordinator	Truda Counsell
Students' Handbook Editor (2006 edition)	Chris Kimble
Students' Handbook Editor (2007-8 edition)	Jeremy Jacob
Students' Handbook Editorial Assistant	Truda Counsell
Teaching Laboratories Technician	Ron Leath
Technical staff	David Hull
Timetabling Officer	Chris Bailey
UCAS Open Day Arrangements	Dimitar Kazakov, Jenny Baldry
Undergraduate Prospectus	Tim Kelly
University News-Sheet	Anne Edwards
University Open Day Organizer	Dimitar Kazakov

7. Boards and Committees

7.1. Board of Examiners in Computer Science (BoE)

The Board of Examiners in Computer Science consists of all the staff members of the Board of Studies together with the External Examiners in Computer Science and any member of the academic staff of the University involved in an examination in Computer Science.

This Board receives the results of examinations from those of its members who have assessed them, and presents the results to the appropriate (possibly Combined) Board of Studies. The Board of Studies then presents its recommendations for the award of degrees to the Senate of the University. The Board of Examiners has absolute discretion in its recommendations for the award of a degree. The officers of the Board of Examiners are as follows:

Professor J.A. Clark	Chair
Dr D. Kudenko	Secretary

7.2. Board of Studies in Computer Science (BoS)

The Board of Studies is responsible for the department's taught courses (graduate and undergraduate) and most other undergraduate and graduate student matters. It is constituted in accordance with the University Ordinances:

http://www.york.ac.uk/admin/aso/ordreg/1.htm

There are full meetings of the Board of Studies in weeks 2 and 9 of every term. (In Autumn week 2, open minutes are received, but no open business decisions are made.)

The membership of the Board of Studies in Computer Science includes all full-time teaching staff, current student representatives and certain co-opted staff. See section 6.1 for a list of teaching staff. The officers of the Board of Studies are as follows:

Mr. C. Kimble	Chair
Dr R. F. Paige	Secretary

7.2.1 Student members

The following student members are elected during the autumn term. See section 2.14 for a student view of being a student representative.

One First Year student representing all first-year undergraduates
One Second Year student representing all second-year undergraduates
One Third Year student representing all third-year undergraduates
One Fourth Year student representing MEng fourth years
One MSc IT student representing MSc IT students
One MSc SWE student representing the MSc SWE students
One MSc SCSE student representing the MSc SCSE students
One Research student representing research students

The student representative on the CS/M Executive may attend meetings of the Board of Studies in Computer Science, but is not a voting member. The current student representatives can be found at:

http://www.cs.york.ac.uk/bos/BoS.php

The up-to-date membership is summarised at:

http://www.cs.york.ac.uk/bos/current/Members.html

Specific concerns of the Board of Studies include the design, organisation and teaching of courses; consideration of methods of teaching and assessment; the supervision of the academic progress of students (undergraduate and graduate); the approval of variants from the normal course content or structure (including elective modules, non-standard sandwich placements etc); the approval of graduate students' reports; the organisation of examinations (including special requirements for particular students or particular module examinations) and the consideration of assessment results presented to it by the Board of Examiners.

The Board of Studies is not responsible for the operation of the Department's computing facilities or any other resource matter. The University defines resourcing and staffing to be the responsibility of the Head of Department.

Students (or staff) wishing to raise matters with the Board of Studies should communicate with the officers of the Board. An E-mail notice is sent out to all current members of the Board before each meeting. However, many issues can be dealt with outside meetings. This is particularly the case where the issue concerns individual people or an individual module.

The following are classed as "reserved" business, from which student members of the Board shall be excluded from discussion and voting:

1) Matters involving individual students or members of staff, including such questions as teaching-loads for individuals, requests for leave of absence, and the evaluation of performance
2) Methods of examination marking where knowledge of these could affect examination tactics
3) Examination results (including the award of postgraduate degrees)
4) The appointment of examiners
5) The allocation of research money

Members of staff registered for York degrees will be excluded from discussion of and voting on issues relating to those degrees, (e.g. a member of staff registered for a PhD cannot be present during business relating to other PhD students). Staff are also required to declare any conflicts of interests when considering named individuals, e.g. for degree awards.

7.3. Bioinformatics Committee

For the MRes course in Bioinformatics (see section 22) there is a Combined Board of Studies comprising all members of each department's Board of Studies. The day-to-

day administration of the course is undertaken by an Executive Committee, whose members are:

Dr Sandra Baldauf	Placements Organizer (Biology)
Ms Emma Rand	Teaching Fellow (Biology)
Dr James Cussens	Chair (Computer Science)
Prof Rod Hubbard	Admissions (Chemistry)
Dr Leo Caves	Course Organizer (Biology)

7.4. Computer Science / Mathematics Committee

For the joint courses in Computer Science and Mathematics there is a Combined Board of Studies comprising all members of each department's Board of Studies. The officers of the combined Board of Studies are:

Dr Gustav Delius	Chair (Mathematics
Dr Detlef Plump	Secretary (Computer Science)

In addition, there is a small Executive Committee made up of representatives of the Board of Studies of each department. The Executive Committee is responsible for the co-ordination of the subjects in the course, and for advising combined course students on their programme of studies.

7.5. Departmental Teaching Committee (DTC)

The Departmental Teaching Committee is a sub-committee of the Board of Studies, to which it reports. It meets in week 6 of each term. The DTC is responsible for undergraduate teaching except that all matters relating to the MEng fourth year are in the remit of the Masters Teaching Committee (MTC). Individual projects for MMath students are in the remit of DTC. The Modular MSc and the MRes Bioinformatics courses are outside the remit of the DTC. The DTC normally holds open meetings, but staff members may consider closed business when appropriate.

The DTC considers the principles on which the Department's taught courses (undergraduate) are run, within policies approved by the Board of Studies. This includes the co-ordination of teaching across and within years, and module content. In consultation with the Head of Department (or deputy), it decides the allocation of teaching to lecturers. The DTC discusses, and recommends to the Board of Studies, strategic changes to the Department's courses as a whole.

DTC issues module and assessment schedules and approves module descriptions for undergraduate courses.

The committee:

1) Reviews the annual report of undergraduate teaching that is submitted to the University Teaching Committee
2) Responds to the University Teaching Committee
3) Reviews student feedback on end-of-term (yellow) forms
4) Reviews reports of external examiners (at the autumn meeting) and defines an action plan

5) Reviews teaching and assessment plans (at the spring meeting)
6) Reviews the response to the action plan (at the summer meeting)

The officers of the DTC are:

Dr. F. A. C. Polack	Chair
Dr J. L. Jacob	Secretary

It is a requirement of the University that the committee be chaired by a member of staff. In addition, there are three staff-student pairs, namely one representative pair for:

- All first year undergraduate courses
- All second year undergraduate courses
- All third year undergraduate courses

A Computer Science/Maths representative attends the Committee.

The DTC provides a channel of communication between students and staff. It takes responsibility for the day-to-day running of undergraduate modules, and is responsible for monitoring and controlling the effectiveness of the Department's teaching. This is effected by a brief written report from each year pair, considered at each termly meeting, and a review of student feedback on modules.

The staff and student representative for each year carry joint responsibility for monitoring and reacting on a day-to-day basis to issues that arise in their year's modules. In performing these duties, the representatives may consult or involve other staff and students; however, only the designated representatives or their nominated stand-ins are members of the DTC.

The DTC is not responsible for monitoring or controlling resources such as buildings, computers, library stock or laboratory equipment. Resources are the concern of the Head of Department (or deputy).

7.6. Masters Teaching Committee (MTC)

The Masters Teaching Committee is a sub-committee of the Board of Studies, to which it reports. There is one DTC meeting in week 6 of each term and two MTC meetings each term, one in week 3 and one in week 8.

MTC is responsible for masters-level teaching, including the MEng fourth year. MTC has no remit for year 1 – 3 of the undergraduate courses.

MTC issues course and assessment schedules and approves module descriptions for masters-level courses. The committee:

1) Reviews the annual report of postgraduate teaching that is submitted to the University Teaching Committee
2) Reviews student feedback
3) Reviews reports of external examiners (at the Spring meeting) and defines an action plan

4) Reviews teaching and assessment plans (at the Spring meeting)
5) Reviews response to the action plan (at the Autumn meeting)

The officers of MTC are:

Dr A.M. Wood	Chair
Dr N. E. Pears	Secretary

In addition, the senior admissions tutor for the MSc SWE and MSc SCSE is a member, along with four staff-student pairs, namely one representative pair for each of:

- MEng fourth years
- MSc IT and its diploma variant
- MSc SCSE and its diploma and certificate variants plus the certificate SSE
- MSc SWE and its diploma and certificate variants
- MSc NC

The MTC provides a channel of communication between students and staff. It takes responsibility for the day-to-day running of postgraduate and MEng fourth year modules, and is responsible for monitoring and controlling the effectiveness of the Department's teaching. This is effected by a brief written report from each course-pair, considered at each termly meeting, and the review of student feedback on modules.

The staff and student representatives for each course carry joint responsibilities for monitoring and reacting, on a day-to-day basis, to issues that arise in their modules. In performing those duties, the representatives may contact or involve other staff or students. However, only the designated representatives or their nominated stand-ins are members of the MTC.

The MTC is not responsible for monitoring or controlling resources such as buildings, computers, library stock or laboratory equipment. Resources are the concern of the Head of Department (or deputy).

7.7. Departmental Research Committee

This committee comprises heads of the research groups and meets regularly to discuss strategic research issues of departmental significance; for example, it is responsible for producing responses to the HEFCE's Research Assessment Exercises. The committee has a small budget that it can use to respond to requests for travel funding for research purposes - there are four calls a year - and is involved in the allocation of departmental research technicians to projects.

Professor Edwin Hancock	Chair

7.8. Departmental Safety Committee (DSC)

The Departmental Safety Committee is responsible for reviewing the safety procedures within the Department, including receiving reports on accidents that have occurred and initiating action to prevent future occurrences.

Professor John McDermid	Chair
David Hull	Safety Officer

7.9. Information Committee (INC)

The Information Committee is responsible for making recommendations on IT policy to the Head of Department to ensure a high quality of information dissemination both internally and externally. The committee meets approximately once a month. The committee also manages the Handbook and oversees the department's web presentation and administrative support systems.

T.B.C.	Chair

8. Professional Institutions and Learned Societies

8.1. British Computer Society

The BCS, representing practitioners in every area of computing, was founded in 1957 after some years of increasing contact between one group of people with scientific and engineering interests and another group with industrial and commercial interests. Since 1968, the BCS has had a professional structure: examinations (in two parts, plus a project) are set for Membership. Members with sufficient experience may become Fellows. Members (MBCS) and Fellows (FBCS) can obtain Chartered Engineer status (CEng).

In 1971, the BCS established a Code of Conduct for the computing profession. The Society is currently active in the fields of privacy, legal protection of computer programs, and the establishment and maintenance of technical standards, this latter through the British Standards Institute and international bodies. The Society publishes a number of magazines and journals, including *IT Now* which is a monthly publication devoted to short topical and expository articles, new items, reports of meetings, announcements and book reviews; and the *Computer Journal* which is a quarterly publication devoted to original papers and articles of permanent interest. Members receive the former in return for their membership. Members can purchase copies of the Computer Journal at a favourable rate. Under reciprocal arrangements, BCS members can obtain the publications of the (U.S.A.) Association for Computing Machinery at reduced rates.

Students can obtain membership details, including those of the reduced fees for students, and application forms from the Society's web pages at http://www.bcs.org.uk/

8.1.1 BCS exemption

Membership of the British Computer Society entails passing the Society's Part I and Part II examinations and the Professional Project. (These educational requirements are necessary, but not sufficient, for Membership.) Part I entails broad coverage of CS and IT at a modest level. Part II entails study of a specialist area in some depth. The Professional Project must be of a 'practical and problem-solving nature'.

Exemption from Part I and Part II examinations and Professional Project:

1) MEng Computer Systems and Software Engineering, with honours
2) BEng / BSc Computer Science, with honours

Exemption from Part II (only) examinations and Professional Project:

- MSc Safety Critical Systems Engineering
- MSc Software Engineering (provisional exemption)

Exemption from Part I (only) examinations and Professional Project:

- MSc Information Technology

No automatic exemptions of any kind:

- BSc Computer Science / Mathematics (EQ)
- MMath Mathematics / Computer Science (EQ)

The compulsory taught material in the combined courses falls short of what is required (all optional material being invisible for the purposes of exemption) and there is no guarantee that a graduate will have completed a project; and, if they have, that it was of a 'practical and problem-solving nature'. If these concerns can be addressed in any individual case, then exemption from any or all of Part I, Part II and the Professional Project can be obtained. Graduates in this position should consult with their Computer Science supervisor or the BCS liaison person (see section 6.3)

8.2. Institution of Engineering and Technology

The Institution was formed from the merger of the IEE and IIE in 2006. It is an international organisation with more than 150,000 members ranging from students to distinguished and highly qualified members of the profession. Over a quarter of the members live and work outside the UK, and IET centres exist in various parts of the world. The IET promotes the advancement of electrical, manufacturing and information engineering to facilitate the exchange of knowledge and ideas. Thus, the IET's coverage includes power engineering, manufacturing engineering, communications, electronics, computing, information technology, software engineering and control. It is concerned with management, design, science and education.

The IET:

- Grants Chartered status to its members as a mark of their professional competence
- Acts as the voice for the profession in matters of public concern
- Sets standards of qualifications
- Accredits degree courses in relevant subjects at universities and colleges
- Provides an extensive range of lectures, meetings, conferences, seminars, residential vacation schools and publications designed to enable members to keep abreast of developments
- Sets standards for the professional conduct of its members
- Operates a computer-assisted information service, INSPEC, which has the world's largest computerised database in the English language in physics, electro-technology, computer science and control engineering
- Publishes twelve bi-monthly learned journals
- Publishes a fortnightly periodical which provides for rapid dissemination of short research contributions
- Publishes six current awareness journals and a tabloid monthly newspaper
- Publishes conference publications and colloquia digests

The IET headquarters at Savoy Place in London (next door to the Savoy Hotel) contains two lecture theatres, a number of meeting rooms, a Library, and a Members' bar where coffee and newspapers are provided. The IET Library, which incorporates the British Computer Society Library and the Institution of Manufacturing Engineers Library, is available to members for borrowing books from the extensive collection and for obtaining photocopies of articles from journals and conference proceedings. The Technical Information Unit has a team of highly trained technical specialists who are

available to answer enquiries on technical, commercial, educational and historical aspects of electrical and electronic engineering and computer science. The Library has on-line access to over 700 databases and will carry out customised searches for members on specific subjects. Regional Engineering Centres have been established in Birmingham and Glasgow.

While engineers may change jobs or work abroad, the IET is always there as a "professional home", providing a base from which it is possible to network with others in the profession. It provides this through one or more Professional Networks. It operates a Career Advisory Service and a local mentoring scheme. You may set up your own e-mail alias with IET.

It is possible to join as a student in which case you can add the letters TMIET after your name. Upon graduation and becoming a full member you are entitled to use the letters MIET after your name (provided the annual subscription is paid).

At about the age of thirty, a member should consider applying for registration as a Chartered Engineer or Incorporated Engineer. If successful, it is permitted to use the designations CEng or IEng after your name (again, provided the annual subscription is paid).

Registering as an engineer is a two-way recognition of professional competence requiring proof of educational, technical and managerial skills. This is achieved through a form that must be completed and success at an interview.

The MEng degree in Computer Systems and Software Engineering satisfies the educational requirements for CEng. The BEng/BSc in Computer Science satisfies the education requirement for IEng. BEng/BSc students who wish to register as CEng will need to prove that they have undertaken further learning such as would be provided by an accredited advanced MSc in computer science.

In 2006, the annual membership rates were:

Student	£12.00 (1 year); £24 (3 years); £30 (4/5 years)
Member aged 21 - 25	£37.00
Member aged 26 - 28	£52.00
Member aged 29 – 34	£78.00
Member 35 or over, included in the register of professional engineers	£95.00

If UK income tax is paid, income tax relief can be claimed on both your subscription and any payments made for IET journals. Application forms for student membership are available on line.

The URL for the IEE is http://www.iee.org.uk/

After joining the IET, it is possible to sit on organising committees and contribute to the work of the IET and the chosen area of work.

8.3. Institute of Electrical and Electronics Engineers

The Institute of Electrical and Electronics Engineers (IEEE) was founded in 1884 and is the world's largest professional engineering society. Its membership of over 360,000 people worldwide is divided geographically into 10 regions (York is in region 8) within which there are 260 local IEEE Sections serving as centres of activity at the local level (York is in the United Kingdom and Republic of Ireland section). Internationally the IEEE is split into 35 Societies (for example the Computer Society and the Systems, Man and Cybernetics Society), which together produce more than 60 publications.

The purposes of the IEEE are:

- To advance the theory and practice of electrical engineering, electronics, computer engineering and computer sciences, and the allied branches of engineering and the related arts and sciences. It achieves this by holding meetings for the reading and discussion of professional papers, and the publication and circulation of works of literature, science and art
- To advance the standing of members of the profession it serves. It achieves this by the conduct and publication of surveys and reports on matters of professional concern to the members of such professions, collaboration with public bodies and with other societies for the benefit of the engineering professions as a whole, and the establishment of standards of qualification and ethical conduct
- To enhance the quality of life for all people throughout the world through the constructive application of technology in its field of competence. It endeavours to promote understanding of the influence of such technology on the public welfare

Members belong to an appropriate class of membership depending upon their experience and qualifications. The classes are as follows.

- Fellows (F.I.E.E.E.): a distinction conferred by invitation of the Board of Directors upon a person of outstanding and extraordinary qualifications and experience in IEEE designated fields, who has made important individual contributions to one or more of these fields
- Senior Members (S.M.I.E.E.E.): the highest grade of membership for which application may be made. It requires experience reflecting professional maturity. A candidate shall have been in active professional practice for at least 10 years and shall have shown significant performance over a period of at least five of those years
- Members (M.I.E.E.E.): a professional grade limited to those who have demonstrated professional competence in IEEE designated fields
- Associate: a grade for technical and non-technical applicants who do not presently meet the qualifications for Member grade, but who would benefit through membership and participation in the IEEE and for those who are progressing, through continuing education and work experience, towards the qualifications for Member grade
- Student: a member who is a registered undergraduate or graduate student currently enrolled for at least 50% of a normal, full-time course of study in electrical engineering or electronics engineering, computer engineering and computer sciences, an allied branch of engineering, engineering technology or the related arts and sciences

Students taking the MEng Computer Systems and Software Engineering, BEng / BSc Computer Science, BSc Computer Science / Mathematics (Equal) and postgraduate students undertaking a research degree in Computer Science are eligible for student membership. The IEEE does not offer a route to Chartered Engineer status.

In 2006, the annual student membership rate was $25.00 (approximately £15.00) for which one received the magazine IEEE Spectrum. Membership of the Computer Society was an additional $23.00 (approximately £14.00) for which one received the journal IEEE Computer.

Application forms for student membership are available from the IEEE web site. Such applications need to be counter-signed by the IEEE Student Adviser. The URL for the IEEE is http://www.ieee.org/

8.4. Institute of Mathematics

BSc students in Computer Science and Mathematics may apply for membership of the Institute of Mathematics and its Applications. The Institute takes an active interest in the mathematical foundations of formal programming. It has a long-standing interest in mathematical modelling of all kinds, and in numerical analysis.

Further information may be obtained by writing to: The Secretary and Registrar, Institute of Mathematics and its Applications, 16 Nelson Street, Southend-on-Sea, Essex SS1 1EF. The student subscription for 2005/6 was £13.00. The URL for the IMA is http://www.ima.org.uk.

General Information Related to Taught Courses

- This section of the handbook contains material concerning academic matters that are of general relevance to taught courses.

- For general information relating to students on any taught course, see the previous section of this handbook.

- For specific information on a particular degree scheme, see the last section of this handbook.

9. Academic Misconduct

The University's Statement on Academic Misconduct

Students are responsible for ensuring that their work does not contravene the University's rules on academic misconduct, which are set out in Regulation 5 (see http://www.york.ac.uk/admin/aso/ordreg/r5.htm). The University takes a very serious view of such misconduct and penalties will be applied to students who are found to have attempted to mislead examiners. Forms of academic misconduct include:

- Cheating - deliberate failure to comply with the rules governing examinations, e.g. by making arrangements to have unauthorized access to information
- Collusion - assisting another individual to gain advantage by unfair means, or receiving such assistance yourself
- Fabrication - misleading the examiners by presenting work for assessment in a way which intentionally or recklessly suggests that you have collected factual information which has not in fact been collected, or falsifies factual information
- Impersonation - producing work to be submitted as that not of yourself but of another, or assuming the identity of another individual in order to deceive the examiners, or soliciting another individual to act or appear as yourself, or to produce work on your behalf
- Plagiarism - incorporating within your work without appropriate acknowledgement material derived from the work (published or unpublished) of another

The penalties for academic misconduct will depend on the seriousness of the offence. Students found guilty of academic misconduct may, for example, have their degree class reduced, fail their degree or be asked to leave the University. If you have any queries about what constitutes academic misconduct, and in particular, about the proper attribution of material derived from another's work, you should seek advice from your supervisor or tutors

9.1. Plagiarism and Collusion

Plagiarism is defined in the Collins Pocket English Dictionary as "the taking of ideas, writings, etc. from another and passing them off as one's own". In an academic environment, this is regarded as a very serious offence.

The University's regulations state that examination candidates must not by implication or otherwise represent the work of others as their own. All sources, whether published books and articles or unpublished material of any kind including that found on the Internet, must be explicitly acknowledged, and quotations and close paraphrases clearly attributed. In addition, candidates must not by implication or otherwise represent work, done in collaboration with others, to be their own unaided work; nor may any member of the University, whether or not a candidate in the examination, knowingly allow their work to be used without being acknowledged by examination candidates.

If an examiner suspects plagiarism, a sub-committee of the Board of Examiners will investigate the matter, including interviewing the candidate(s) concerned, and

determine a mark for the submitted work, taking into account its academic worth. The penalties for plagiarism are severe. A candidate can be suspended or excluded from the University, a lower class of degree can be awarded, the award of a degree can be withheld or the entitlement to resit an examination can be withdrawn.

Plagiarism can by avoided by always acknowledging the sources of the material you have used (including software and information on the web). If you copy a passage of text verbatim, clearly mark the entire extent of the quotation (for example, using quotation marks, italic or a different point size) and cite its source.

This Department's guidelines for mutual assistance and collaboration are given in section 9.2 (the relevant University Regulation is 5.4), and it is each student's responsibility to be aware of those and to follow them. Students are encouraged to consult their supervisor if in any doubt as to the meaning of "plagiarism" or "collusion" in the context of their own work.

It is the responsibility of students on joint courses or taking elective modules in another department to ensure that they are aware of the Academic Misconduct rules in each department where they are attending teaching. There may be small but significant differences in the definitions of, for instance, acceptable collaboration in different disciplines.

9.2. Guidelines on Mutual Assistance and Collaboration

9.2.1 General guidelines

The pre-eminent activities of a university are learning and extension of knowledge. In each of these activities, it is necessary (a) to assess achievement and (b) to ensure the free interchange of information in oral and written form. These two requirements sometimes conflict, but do not do so inevitably. It is the purpose of this section to help students resolve any such conflict that they might experience. These guidelines mainly apply to assessments that are undertaken by individual students. For assessments which are done in pairs (such as CTS) or in groups (such as TSP), setters will provide additional guidelines on the level of allowable collaboration within the pair or group.

Requirement (a) means that work you submit to be read by members of the teaching staff must represent your own knowledge and understanding, and not that of someone else. If it does not represent your own work, it may constitute an act of plagiarism or collusion (see section 9.1).

Requirement (b) means that, in the pursuit of knowledge and understanding, you should exploit to the full the published literature and the time and patience of your teachers and colleagues.

There are three categories of submitted work:

- Closed examinations
- Open assessments
- Unassessed work

Assessed practicals requiring electronic submission are classified as closed examinations.

Closed assessments pose no problem in the present context. You have free access both to the published material and to your contemporaries during revision, and invigilators in the examination room ensure that there is no collusion or use of unauthorised material.

Open assessments are similar to closed assessments in that you should have free access to published material, and to your contemporaries, in carrying out the preparatory groundwork. However, once you have received the assessment, discussions with your contemporaries are only allowed for understanding the nature of the assessment and not its possible solution. The solution you submit, including the writing of the piece of work itself, must be done by you alone.

For unassessed work, you should have free access to published material and to your contemporaries, in carrying out the preparatory groundwork and for considering potential solutions. However, the final organization and writing of the piece of work itself must be done by you alone.

The foregoing discussion will have served to prepare you for the following guidelines.

1) Collaboration in learning, the sharing of insights, and resolution of difficulties, is desirable. This extends to preparation before an assessment is issued.
2) Do not collaborate when producing the answer to an assessment. Do not copy another's work, nor allow another to copy yours. Your responsibility is as great in each direction.
3) If in doubt as to whether you should give assistance, ask yourself whether a supervisor or tutor would be likely to give it.
4) When you draw on the work of others (including software and information found on the Web), you must acknowledge it, with citations in your text. If you copy a passage of text verbatim, clearly mark the entire extent of the quotation (for example, using quotation marks, using italics, or a different point size) and cite its source. If you use an author's facts, ideas, software or data, acknowledge that you have done so. (This latter rule can be relaxed if the information can be regarded as common knowledge as is often assumed, for instance, in an introductory textbook.) If in doubt, cite where you found the material.

These ideas are now summarized in the context of writing first an essay/report and then a program.

9.2.2 Writing an essay or report

In setting about writing an essay (or report), it is first necessary to determine what is required from the essay/report. The process of determining the nature of the question being asked is one that can involve collaboration, and this is permissible. Once you understand what is required of the essay/report, you will need to select relevant pieces of information from available sources and to evaluate their relative usefulness and consistency. The process of selection and evaluation, often involving careful analysis and judgement, is one in which collaboration and assistance from others is not permitted. Of course, any information used in the essay must be explicitly referenced.

What has been said in the previous paragraph does not preclude discussion of general aspects of the question, which you discover that you have not fully understood before starting to write, or obtaining help with grammatical problems when writing. It is as permissible to seek advice at this stage, as it would be to consult a textbook or dictionary. It is not permissible, however, to discuss the details of your essay/report with others.

9.2.3 Writing a program

Writing a program is a close parallel to writing an essay. Again, there must be a first stage during which the requirements are analysed and clarified. Here, collaborative effort is permissible if you find yourself in difficulties. However, remember that it is only the setter of the assessment who can rule on any perceived ambiguities of the requirements.

There follows the second stage of working predominantly alone, during which you determine the detailed structure of the program, invent data names, write language statements, annotate, document, design test runs and test data and so on. Again, you will encounter problems: you will not know how to use the language to achieve a particular effect; you will not understand some diagnostic; you will be unable to detect a bug. Again, discussion on or assistance in this aspect alone is valuable and permissible. However, the basic structure and algorithms of your program must be yours.

The use of standard programs (or data files issued by members of the teaching staff) will usually be permitted, but such use must be acknowledged. In particular, when programming, do not "re-invent the wheel": if a piece of code exists that does what you want, use it. If it is a significant and well-defined piece of code (say a procedure or function obtained from a textbook), you must include an acknowledgement of its source in the comment heading or elsewhere in the internal documentation. If it is just a detail involving a few lines then this can be regarded as common knowledge and need not be acknowledged. Where significant code is reused (or has been written for you by someone else), it is imperative that you show that you understand how that code works; for example, by showing a proof of correctness for the code or a detailed performance analysis. Without this, no credit can be given for its inclusion.

Where programs form part of a project, again code may be re-used. Clearly, if you re-use significant amounts of code then the examiners will expect you to make greater progress towards meeting the aims of the project. As most projects are open ended, a student who re-uses code will be expected to progress further than a student who does not.

Remember, code that you have not written yourself, and which does not have an explicit reference to the author in the code, will be subject to normal penalties for plagiarism and/or collusion.

10. Electives, Transfers and Options

10.1. Elective modules

Some third and fourth year students (see below) can apply to take elective modules as 10 or 20 credits of their year's study. In all cases, the approval of the relevant Chair of the Board of Studies must be obtained for any proposed elective module (see section 10.3.1).

The Chair of the Board of Studies must be satisfied that the syllabus of any elective module is genuinely distinct from the student's normal course of study, that the module is sufficiently demanding and that it involves a full university assessment of the student's performance. (In this context, students should note that first year mathematics modules are rarely acceptable: they are similar to material in the CS degree or A level Maths, and some do not have a full university assessment.) A requirement for an elective's approval is that its assessments do not impinge on computer science module commitments, and that the results are available to the department by the Monday of week 9 of the summer term.

Electives are approved subject to timetabling constraints: if attendance at the elective clashes with commitments on the computer science modules, students have to revert to computer science options. Some departments may also set quotas for electives.

- Third year CS and MEng students can apply to import up to 20 credits from any undergraduate course in any other department
- Third year CS/Maths students (3M1, 3M3, 3N1 and 3N3) can apply to do one 10 credit elective overall. Maths imposes the restriction that if the elective replaces a maths module, it has to be in the final year. CS imposes the restriction that if a CS module is replaced, it has to be a 3rd year module (no matter if in the BSc or MMath course). Fourth year MMath students (4N1 and 4N3) can apply to import up to 10 credits from undergraduate courses in any other department (that is, except Computer Science and Mathematics). Approval should be sought from the Chair of the Joint Board
- MEng fourth years are not normally allowed to take elective modules

10.2. Course Transfers

A course transfer involves changing degree schemes. Course transfers may be between degree courses in Computer Science, or from one department to another. Transfers involving CS/Maths are treated as transfers between departments, since the CS/Maths courses are managed by the Joint Computer Science/Maths Board rather than the Computer Science Board of Studies.

It is possible in certain circumstances to transfer from one degree course to another. Permission for such a transfer must be obtained from both Boards of Studies concerned: the importing Board and the exporting Board.

Requests for transfers between departments are given careful and sympathetic consideration. However, it is not always possible to arrange the transfer. For example, the destination degree may be full, or you may not meet its entrance requirements. In general, students should expect to have to restart in year one of the chosen degree in the destination department. Students should assume that they will have to pass any

outstanding exams in their department of origin first. If you are considering applying for transfer to a different department, you should consult your supervisor and the Chair of the Board of Studies (section 7.2) at the earliest opportunity. You should also contact the admissions tutor of the destination department. The Board of Studies does not normally refuse to release students who have been accepted for another course. However, written evidence of that acceptance (indicating the date at which the transfer is proposed to take place) is normally required before the Chair of the Board of Studies can sign your course transfer form.

Students from other departments are normally only accepted for transfer into single-subject computer science courses if they have met the entrance requirements in full and the course is not already full. Students can normally only transfer to restart year one of the computer science courses.

Transfers within the computer science department are restricted by various external regulations. The definitive position is given in the relevant degree details. For example, regulations for transfer between BEng/BSc and MEng in both directions are given in section 18.2.1. Students applying for transfer between degrees within computer science must talk to their supervisor, and must then write to the Chair of the Board of Studies to request the transfer. Both supervisor and student must sign the letter. Transfers on to a sandwich course must also be signed by the Industrial Placement Consultant (see section 6.3).

Any transfer that lengthens the degree, including transfer onto a sandwich variant, must be completed before the start of the second year. Since the transfer takes time to take effect, students must apply to transfer before the end of the summer term of their first year. Later transfers can normally only be made by application to the University's Special Cases Committee. This requires that the Chair of the Board of Studies prepare a case, and will require the student to brief the Chair and provide a more detailed written request. UK students should note that course-lengthening transfers after the cut-off date remove a student's entitlement to any mandatory local authority award. This is an absolute deadline enshrined in statutory regulations and LEAs have no power to ignore it.

Transfer from MEng to BEng/BSc cannot be accepted after the end of the second year. Students who do not meet the conditions for continuation on the MEng at the end of their second year will be required to transfer to the BEng/BSc for their third year. Transfers from the sandwich to the non-sandwich variants of the BEng/BSc and MEng courses are required for those students unable to obtain a placement. If, having registered for a sandwich course, a student decides that they do not after all wish to have a placement, then they must inform the Industrial Placements Consultant (see section 6.3) no later than the start of the second year.

A transfer form must be filled in and submitted, even for an automatic change of degree title. Remember that a transfer to or from a CS/Maths course requires the permission and signature of the Chair of the Joint Board of Studies. Please see further information on

http://www.york.ac.uk/admin/uo/cfm/transfer/studentguide.htm

Students on the BEng/BSc course who are in their final year will be e-mailed in January to enquire whether they wish to graduate with a BSc or a BEng.

10.3. Options

Second, third, and fourth year students are required to select optional modules by a process that is initiated by the Department at the beginning of the preceding Summer Term. This process is performed on-line; students on sandwich placement will have access to the same process. Students should see individual course schemes for further details of the options available and seek advice on their choice of options from their supervisor. MSc students should see section 23.2.5 before selecting any options.

10.3.1 Selecting an elective module

Third year students who wish to take a module given by another Department – a so-called elective module (see also section 10.1) - must seek approval from the relevant Chair of Board of Studies and then obtain a (paper-based) form entitled "Registration for an Elective Module" from the Computer Science Departmental Office and have it signed by the relevant Chair of the Board of Studies (see section 6.3). Permission to study an elective option is not automatic. Electives are only approved subject to timetabling and other constraints and are taken at the student's risk. Students are responsible for ensuring that they are registered for the modules they wish to do, and that their total number of credits is correct. Module registrations can be checked at https://evision.york.ac.uk/. Students taking an elective module must comply with the rules of the department offering the module (eg. concerning attendance and submission of work.)

10.3.2 Changing modules

Students may drop or add a module in Part A not later than Aut/2/Fri, and may drop or add a module in Part B no later than Spr/2/Fri, providing that they attend the whole of the module to which they are changing and complete the relevant (paper-based) change of module form obtainable from the Departmental Office.

Disclaimer

The University reserves the right in exceptional circumstances to change the menu of modules on offer. A module may be cancelled for the following reasons, among others:

- too few numbers of students opting to take the module;
- impossibility of timetabling the module in a suitable room;
- unavailability of a member of staff to teach it

The University does not normally allow a student to take more (or fewer) than the specified number of credits a year; extra options cannot be formally taken or recorded against a student's university record.

The University does not normally allow a student to repeat modules.

11. Sandwich Scheme

Please note that the sandwich and the North American Exchange Schemes (see section 12) are only available to certain students.

The Department of Computer Science at the University of York complies with the Quality Assurance Agency Code of Practice on Placement Learning (QAA CoP PL) using the British Computer Society (BCS) University Personal Development Scheme (UPDS), for which it is fully accredited.

Details are at:

http://www.qaa.ac.uk/academicinfrastructure/codeOfPractice/section9/PlacementLearning.pdf

and

http://www.bcs.org.uk/updsusers

username bcsupds password upds_ps

The department's Industrial Placements Consultant (IPC) administers the sandwich scheme.

11.1.1 Placements

Students admitted to the BEng / BSc and MEng and MMath Sandwich schemes undertake a twelve to fifteen month salaried industrial placement, between their 2nd and 3rd academic years only, as part of their course. The point of contact for all industrial placements and sponsorships for the Department is the Industrial Placements Consultant (IPC) (see section 6.3). The IPC is also the point of contact for the University Professional Development Scheme (UPDS). Sandwich Placements are operated in accordance with the UPDS.

The IPC facilitates placement contracts between sandwich students and their chosen company. There is no obligation on students to accept a contract with a company of which they do not approve. If it is not possible to arrange sandwich employment, or the student does not wish to be considered for a placement, then a transfer out of the sandwich scheme into the conventional third year of the BEng / BSc and MEng and MMath non-sandwich scheme will be made (see section 10.2). Transfer into the sandwich scheme by students admitted for the conventional course is easy to arrange during the first year of a student's course, but is more difficult later (for reasons associated with LEA grants), and application to the University's Special Cases Committee for leave of absence to take a placement may have to be made. Students are urged, therefore, to respond to the IPC's e-mails, as required, if they plan to apply for a sandwich placement, even if they only wish to explore the possibility of doing so. The Department strenuously advises all UCAS applicants to apply for the sandwich variants, in order to keep their options open.

Before allowing a student to undertake a sandwich placement, the University, through the Board of Studies, requires:

1) That the student has the Board's approval
2) That the proposed site of the industrial placement be approved

Students whose placements are arranged by their sponsoring company or by themselves rather than through the Department must obtain this approval by consulting the IPC.

11.1.2 Responsibilities

The IPC reserves the right not to process Placement Students who refuse to follow the Placement Process. These students may be allowed to continue by finding their own Placements, but these Placements still have to meet the requirements of the Department, the QAA CoP PL and UPDS as verified by the IPC.

The IPC is responsible for:

- Circulation of CVs (curricula vitae) and the arrangement of interviews with fast track companies
- Conducting briefings and progress reviews
- Visiting all students twice per placement
- Acting as a point of contact for all BCS UPDS matters

Students are responsible for:

- Timely provision of CVs to the IPC, in the required format
- Pursuing applications with companies in conjunction with the IPC
- Attending all interviews and briefings which have been arranged with companies (for which the companies will normally pay expenses)
- Securing suitable accommodation for the tenure of the placement
- Arranging adequate personal insurance for the duration of the placement
- Completion and submission of a UPDS log book for each placement

It is the student's responsibility to ensure that normal course requirements are met during the application process for placement. Students, in consultation with the IPC, should endeavour to arrange interviews so that they are not prevented from attending compulsory practicals or tutorials. Attendance at an interview is not an adequate reason for missing or seeking an extension for assessed work.

11.1.3 Schedule

When		What
Year 1	Sum/3	PD1 placement initial briefing
	Sum/4	PD1 placement CV presentation
	Sum/4/Fri	Placement registration deadline
	Sum/6/Fri	1st version placement CV deadline
	Sum/11/Mon	Final version placement CV deadline (including exam results subject by subject, with acronyms expanded)
Year 2	Aut/0/Mon to Aut/7/Fri	Fast track placement interviews

When		What
	Aut/8/Mon to Sum/8/Fri	Open season placement interviews
	Sum/9/Tue	Placement final briefing

The placement (sandwich) year runs from mid July (latest) to September; the first placement visits take place during Aug/Sep/Oct with second placement visits taking place during the spring.

When		What
Year 3	During Aut/4	12.00, 1 November - UPDS PDS logbook submission deadline

11.1.4 BCS University Professional Development Scheme (UPDS)

The Department has adopted the British Computer Society (BCS) University Professional Development Scheme (UPDS) as its mechanism and standard for validating placements and compliance with the QAA CoP PL. The UPDS also forms an accelerated track towards achieving Chartered Engineer status with the BCS.

The University pays the BCS membership subscriptions on behalf of placement students for one year.

Further advice on how to conduct the UPDS scheme will be given by the IPC at the placement briefing in the summer term, before the placement starts and during official placement visits, when UPDS log books will also be inspected.

The latest interactive version of the Industry Structure Model is a file of some 41Mb and that can be downloaded at:

http://www.cs.york.ac.uk/UPDS/

Further information on the Placement scheme and its process can be found at

http://www.cs.york.ac.uk/placements

12. North American Exchange Scheme

Please note that the sandwich and the North American Exchange Schemes (see section 11) are only available to certain students.

University of York undergraduates can spend a year studying at any one of five North American universities: the University of California, which includes campuses at Berkeley, Los Angeles, San Diego, Santa Barbara, Davis, Irvine, Riverside, and Santa Cruz; the University of Illinois at Urbana-Champaign, which is 120 miles south of Chicago; Ohio State University, whose main campus is in Columbus, the state capital of Ohio; Columbia University in Manhattan, New York City; and York University, which is in York, a suburb of Toronto in Canada.

BSc, BEng and BA (non-sandwich) students can spend their second year abroad; non-sandwich second or third year MEng and MMath students can spend either their second or third year abroad.

MEng and MMath (sandwich) students can spend their third academic year on exchange. The year in North America replaces the corresponding year of the degree programme at York, and marks obtained abroad count towards the classification of your degree.

Students interested in participating in one of the exchange schemes should read the information pack that will be available in the Departmental office in late October or early November. This pack contains important information about each of the exchange programs, including details about how to apply and what the financial costs are likely to be. After reading the information pack students should let their supervisor and the Department's North America Exchange Co-ordinator (see section 6.3) know that they are interested in applying for a year abroad. Both can help to prepare an application, and the Exchange Adviser can answer any questions there may be about the schemes.

The application must include a provisional list of courses to be taken during the year abroad and this must be approved in advance by the Department's North American Exchange Co-ordinator.

Applications are normally due in early January of the academic year preceding the exchange. Therefore, it is crucial that students begin the application process in November at the latest.

Though these exchange schemes are open to all University of York undergraduates, the Board of Studies will not normally allow a student to take part in a sandwich placement in the year following an exchange because of the difficulty of obtaining the sandwich placement. A sandwich-course student who wishes to study abroad can apply for an exchange and transfer out of the sandwich course if offered a place in the exchange programme. Thus, sponsored students should seek the approval of their sponsors before applying.

13. Individual Projects

Projects are an important component of all of the Department's degree and diploma schemes. Details are given in the module descriptions in the online part of the Handbook (see the table below). This section of the Handbook focuses on regulatory issues such as the format, submission and marking of project reports.

13.1. Synopsis

Hours per credit: 10

Degree Course	Module	Credits	Marks
BSc / BEng	PR3	40	200
MMath Part IV	PR4	40	200
MEng Part IV	PR5	50	250
MSc IT	PPC + PRC‡	60	350
Dip IT	PPC + PRD‡	30	150
MSc NC	PRN	90	450
MSc SWE	PPC + PR8‡	90	450
Dip SCSE/ SWE	PPC + PRB‡	30	150
MRes BI †		30	150
MSc SCSE	PR9	90	450

‡ The requirement to produce a written report during PPC is at the discretion of the supervisor.
† Consult the MRes BI co-ordinator.

Project reports are subject to length restrictions, partly to encourage a concise style of writing. The limits for undergraduate and taught master's projects (except MRes BI) are expressed in terms of both the number of words and the number of pages. This means, for instance, that a report that contains a large number of diagrams will have a smaller word count, but will still have to meet the page limit. The maximum length for all undergraduate and MSc IT and all Diploma project reports is 35,000 words and 70 pages (i.e. neither limit may be exceeded).

Penalties may be applied to reports that are over-length. For undergraduates and MSc IT students, these are calculated according to the following table:

Words	Pages	Multiplier
0-35,000	0-70	100%
35,001-36,750	71-73	95%
36,751-38,500	74-77	90%
38,501-40,250	78-80	85%
40,251-42,000	81-84	80%
42,001-43,750	85-87	75%
43,751-45,500	88-91	70%
45,501-47,250	92-94	65%
47,251-49,000	95-98	60%
49,001-50,750	99-101	55%

50,751-52,500	102-105	50%
>52,500	>105	0%

The reports for part time MSc, MSc SWE and MSc NC projects have a limit of 50,000 words and 100 pages; the above word and page counts are adjusted pro-rata. MRes students should consult the MRes BI co-ordinator for details of their project limits.

In other words, reports up to 50% over-length have a proportionate penalty applied. The Board of Studies retains discretion as to whether to apply these penalties. A report that is even longer than that will automatically be given a mark of zero, unless the Board of Studies explicitly decides otherwise. There is no minimum length. However, students should be aware that a very short report is unlikely to have sufficient content to be worthy of a good mark.

The limits include all material that is to be marked (including the title page, abstract, tables of contents, body of the report, and marked appendices). Bibliographies and unmarked appendices that are included for completeness (such as program listings and tables of data), are not included. The method of counting words and the material to be included in the count must be agreed in advance with the student's supervisor. For marked-up text (e.g. LaTeX), a Unix wc word-count of the input should be used, as, for example, `detex <report.tex> | wc -w`. The title page of the report must include a declaration of the word count, what is included in that count and how that count was derived.

For example:

Number of words = 34,101, as counted by the MS Word word count command. This includes all the body of the report and Appendix A, but excludes Appendix B.

13.1.1 Choosing a project

This section does not apply to MRes BI students, who should consult the Department of Biology. Students completing a part time MSc should see the appropriate section of the handbook. Sandwich students and students on leave of absence might need to visit York to talk to project supervisors before they select, but should e-mail or telephone the academic staff first to arrange a date for the meeting. Projects can be discussed over the telephone.

Allocation of students to projects is overseen by the Projects Co-ordinator (see section 6.3), using information supplied by supervisors and students to an on-line database via a Web interface. Students can browse the available project proposals and specify a number of projects, in order of preference. For each of the projects they are offering, supervisors can specify a number of students, in order of preference. A program based on the Stable Marriage algorithm computes an optimum allocation automatically. The list of available projects is available on-line from the issue date (see section 13.1.3).

All students must follow this automated procedure unless there are exceptional reasons for not doing so. In such exceptional cases, the current supervisor must be consulted as soon as possible. The Projects Co-ordinator should be only consulted if the current supervisor cannot be contacted.

13.1.2 Self-Defined Projects

Students who wish to propose their own project should follow the procedure given on the projects web page:

http://www.cs.york.ac.uk/projects/index.php

All self-defined projects will need to be submitted as a proposal that will need to be vetted by a member of staff. Each project proposal should be about 100 - 150 words in length and should include a few references to define the starting point. Be sure to make the following aspects of the proposal clear:

- An indication of the topic and the subject area into which it falls.
- The literature review element and its starting point. If possible, provide references to relevant items in the literature.
- The main technical objectives of the project together with some idea of their relative importance.
- What type of artefact is expected to result from the project; e.g. hardware, software or an extended literature review.
- A description of any special methods or equipment that will need to be used to meet the objectives.

For externally linked projects, it is important that the external organization is made aware that the final project must have significant academic content and that the student is not just a source of free effort that can be used to undertake a routine task. Students whose projects involve an external organisation will need to get the agreement of that organisation before submitting a proposal. The proposal should give details of a contact person in the organisation; there might also be a need to identify a suitable budget (see section 13.1.4).

13.1.3 Timetable

This section does not apply to MRes BI students, who should consult the Department of Biology.

Project selection takes place in the spring term. The timetable for project selection is published on-line at:

http://www.cs.york.ac.uk/projects/

Students who wish to self-define a project should start discussing a self-defined project with an eligible member of staff as soon as possible. Once the topic for a project has been agreed, the supervisor will submit the project for vetting and, if this is successful, will enter the vetted proposal into the database marked as "student-defined" and include the student's name. This process must be completed before the end of Phase 2 below.

There are three phases to project selection:

Phase 1: Spr/7/Mon-Spr/8/Thu project proposals are made available on-line. Students start discussing project proposals suitable to their course with supervisors.

Both students and supervisors start entering their preferences into the allocation database. No projects are allocated at this stage.

Phase 2: Spr/8/Fri-Spr/9/Fri the allocation algorithm is activated. If a pair of student and project (supervisor) have ranked each other as their first choice, (1) they are marked as a perfect match (or "marriage") and a firm, never to change, allocation is made, then (2) the project is removed from the list of available projects and the student is removed from all other project choices. This can in turn trigger the creation of new perfect marriages, as the remaining students rise in the supervisors' lists of choices.

The remaining students and projects are paired by the stable marriages algorithm. A non-perfect, stable, marriage can be changed if one of the partners changes their preference. Either side (say, the student) can see which of their potential partners (in this case, supervisors) has selected them as their first choice. Reciprocating that choice and choosing such a partner as one's first choice will instantly create a perfect match and, hence, a firm, never to change, allocation.

At the end of this phase, the database closes and all non-random allocations are made permanent.

Phase 3: Spr/10/Tue-onwards. The database is re-opened again with the remaining few students. The current supervisors of these students are e-mailed and requested to advise the students and/or make a final choice on their behalf. The process ends when all allocations are made.

13.1.4 Budgets and special equipment for project work

Most projects require nothing in the way of special equipment or facilities. An example might be a purely software project - perhaps involving the writing of a compiler - that can be done on almost any hardware or software platform. Some projects require special hardware or software; perhaps a certain type of workstation, a particular interface or a compiler for an unusual language. The Department has a wide range of hardware and software available, and it will normally not be necessary to purchase items specifically for project work.

If a project does require items - hardware or software - which the Department does not possess, it will be necessary to buy them, or to make them. This must be agreed between the student and their supervisor. In consultation with the supervisor, the student should prepare a budget listing the equipment required and its likely cost. A small amount of money is set aside each year for this purpose. The budget statement should be submitted to the Laboratory & Facilities Manager (section 6.3) for approval.

Special-purpose hardware can be built by the Department's technicians in the Department's hardware workshops. This takes time: careful planning is necessary if a student wishes to have equipment built in time for it to be of use during their project. Supervisors will be able to provide advice.

13.1.5 Conducting project work

Projects are (deliberately) immensely varied; most are open-ended; that is to say, they offer the opportunity for much more work than can possibly be completed within the allocated time-span. It is easy to squander time on a project, and time is the most

precious resource a student has. It is therefore vital to plan work with great care, and monitor progress continually. It is also vital to do this in consultation with supervisors, whose experience in these matters is the most valuable thing they have to offer.

Undergraduates and full time MSc students are normally expected to meet their supervisors for project supervision each week during term-time throughout the project period. The normal expectation is an average meeting time of half an hour per week. Where "Vac" appears in a course table, weekly project supervisions continue throughout the summer vacation. Where the supervisor is away (for annual leave, attendance at academic conferences, and so on) suitable arrangements will be made for pastoral care.

Undergraduates must see their project supervisor before the end of term 6 to discuss their project and to plan what preliminary activities, if any, can be accomplished during the summer vacation. Undergraduates taking PR3 should also attend the taught part of CSW.

Attendance at scheduled project meetings is mandatory; if necessary, students should feel free to request additional meetings if further assistance is required. If a student is dissatisfied with the frequency or duration of project meetings, they should raise the matter with their supervisor in the first instance and, if the problem is not resolved, should inform the Chair of the Board of Studies.

Students should make sure they agree with their supervisor the milestones to be met as the work on the project advances. Time management is essential for the success of a project of such duration, and is likely to be the aspect of the project where predictions would be the least accurate. Here are some useful guidelines to follow.

Although not required, some students opt for doing preliminary research in the field of their project before the actual start of the project. Should a student wish to do so, they may meet the supervisor to discuss recommended reading. If the project starts at the beginning of the autumn term, students should meet their supervisors as soon as possible - this is the period when a lot of time can be invested in the project. It is generally a good idea to attempt to produce a 10 - 12 page draft of one of the chapters and hand it in to the supervisor for comments halfway through the project. If the student is a slow writer, this will give them the chance to realise it, and adjust the schedule to allow for more writing-up time. In any case, students should take extensive notes on the literature they read, as it is likely their memory will need refreshing by the time they start their work on the final version of the paper. In their work on the Literature Review, they may be aided by "lookrefs", a Departmental database of internal publications available on some of the UNIX machines, the content of which can be searched by keywords. There is also a Web archive of material in the departmental library. Finally, students should keep the last 4-5 weeks almost exclusively for writing up.

13.1.6 Project web pages

For guidance on how to do a project, see:

http://www-course.cs.york.ac.uk/csw/

All online information relating to undergraduate and MSc IT projects is accessible from the projects web page:

http://www.cs.york.ac.uk/projects/

Undergraduate and MSc IT students should visit this web page and read the "Information for Students" very carefully. The corresponding information for Part time MSc students is at:

http://www.cs.york.ac.uk/MSc/SCSE/projects.html

13.2. Project Submission

Two paper copies of the project report and any documentation are to be handed in to the Departmental Office (CS109), by the published deadline. The Department will arrange for both copies of the project to be bound.

In addition to the paper versions, an electronic version of the project report and documentation should be submitted in PDF format via the electronic project submission web page. This can be done up to 24 hours after the published paper submission deadline. In the event of failure of the electronic submission, all faults should be reported to support@cs.york.ac.uk. The Department cannot accept responsibility for any external systems failing which result in electronic submissions not being submitted by the published deadline. The examiners will mark the paper copies, not the electronic copy.

After the Board of Examiners has met to agree the marks, one paper copy of the project report and documentation will be retained in the Departmental Library and an electronic version of those project reports that have achieved at least a pass mark will be made available in the Digital Library. The other paper copy will be made available for collection at the Departmental Office provided an electronic version has been submitted. For undergraduates, reports are available on the last day of the summer term.

Part of the project assessment is an assessed presentation. Students should check with their supervisors to find out the dates of these presentations.

13.2.1 Extensions

In exceptional circumstances, extensions may be granted to the project hand-in deadline. Extensions will be granted for any event or occurrence beyond the student's control, which is judged to have had a significant detrimental effect on the progress of a project. Evidence of the extenuating circumstance will be required. This applies to events that occur at any time during the project's duration. The length of the extension will be decided based on the amount of time judged to have been lost. However, other factors may also be taken into account. For instance, if the extension implies that the student will be expected to work during the vacation, but during that time, he or she will have limited or no access to required facilities (e.g. computers) then an adjustment might be made (e.g. setting the hand-in deadline in the next term, when the student will have the required access).

Extensions amounting to more than 10% of the normal project period (e.g. more than 2 weeks for a project set over two terms) are to be deprecated. That is to say, that if, having done the calculation implied above, the result comes out at more than 10%, the Board of Studies would consider whether some other action such as a Leave of Absence or a reduced project is more appropriate. Furthermore, extensions will only be considered if they have the support of the supervisor (who, having the student's best interests in mind and a broad view of their welfare, might feel that an extension is not in the student's interests)

The student can expect the normal level of supervision (i.e. a meeting per week) during the extension – but no more. If there will be problems due to the unavailability of the supervisor, a volunteer stand-in can be sought. If that is not practical, the length of the extension may be adjusted. Supervisions may take place face-to-face, by e-mail, phone, videoconference or whatever is convenient.

Application for any project extension must be made, in writing, with the necessary evidence, to the Chair of the Board of Studies.

13.2.2 Format regulations

This section contains the formal regulations that govern the presentation of the project report. Students will be penalized under the marking scheme if they do not follow them. Extensive, less formal, advice is available on-line at:

http://www-course.cs.york.ac.uk/csw/

In addition, students should read the following carefully before they start writing their report.

1) All source material that is used, whether by direct quotation or not, must be acknowledged (see sections, 9.1 and 9.2). A standard convention for citing such acknowledgements should be used throughout the report.
2) Reports should always be printed unless there is a compelling reason to do otherwise. If necessary, some formulae or figures may be handwritten or hand-drawn. Use black ink unless colour is essential.
3) Reports should be submitted on good quality A4 paper, so that double-sided printing can be used without one side showing through to the other. Though double-sided printing is preferred, single-sided printing will be accepted.
4) Inside and top margins should be a minimum of 2 cm; other margins should be a minimum of 1 cm. You might find it simplest to leave 2 cm all round. Large blocks of closely spaced text can be hard to read, so if you use single-spaced lines, leave a good gap between paragraphs and around headings.
5) Requirements 1 - 4 above also apply to any program sources or similar materials included as appendices. Double-column landscape can be a useful format for such sources, but only if print quality is high enough to avoid problems of readability. Do not include unnecessarily long source listings: ask your supervisor if in doubt.
6) Students should adhere to the word and page limits given in section 13.1: students who exceed the limits will be marked down. Quality is much more

important than quantity; students should not aim to come close to the upper limit simply to make their report appear substantial.

7) Sheets must not be fixed together in any way. Each copy of the report must be submitted in a wallet-style folder. Mark each folder clearly with your name and "copy 1" or "copy 2".
8) The report must start with a title sheet, containing title, author, date and wording to the effect that it is the report on a project submitted for the degree of such-and-such in the Department of Computer Science at the University of York. It should also contain a declaration of the word count, as described in section 13.1. The second sheet should normally contain an abstract of not more than 200 words.
9) Subsequent sheets should show the contents of the report; this should include a table of contents showing the title and page number for each chapter and section (or each section and subsection). Where appropriate, appendices may start with their own table of contents. Each main subdivision (e.g. section, chapter or appendix) should start on a new page.
10) All tables, figures and equations should be labelled or numbered. Where appropriate, separate tables of tables, figures and equations should be included at the start of the report. Conventions for labelling or numbering tables and figures should be applied consistently.
11) Numbering of subsections to one level of decimals (e.g. 2.1) is desirable; numbering to two levels (e.g. 2.1.2) is acceptable. Numbering to further levels (e.g. 2.1.2.3) is not normally desirable. Conventions for headings and indentation at various levels should be applied consistently.

13.2.3 Classified material

In certain circumstances, particularly with projects undertaken with industrial collaboration, some material relevant to the project might be considered classified or "commercial - in - confidence". It is up to the student to arrange to have the report cleared by the appropriate authorities, though assistance in seeking permission can be obtained from the student's supervisor. If appropriate, confidential material, which is supplemental to the main project report, may be placed in a separately bound appendix. Only the main report would then be lodged in the Departmental library.

14. Notes on Assessment

14.1. Introduction

Work whose submission is required for assessment towards a degree is either to be undertaken in a closed examination room, invigilated, and with a time limit of up to three hours; or is to be carried out in unrestricted conditions with a time limit of a week (normally) or more. These modes are called closed and open assessments respectively.

14.1.1 Assessment rubrics

All University examinations in Computer Science, whether closed or open, except assessed practicals requiring electronic submission, are notified by an examination paper that carries the following rubric (note that examinations set by other Departments may not conform to these guidelines).

Module number
UNIVERSITY OF YORK

BA / BSc / BEng / MEng / MMath / MSc Examinations yyyy

COMPUTER SCIENCE
Module Title

Part pp

This paper consists of the following sections
[if any, for closed papers]

Time allowed [for closed papers]

University-provided calculators may be used
[or other rules concerning calculators, tables, dictionaries, etc. for closed papers]

Time and date of issue, time and date for submission
[for open papers]

Your attention is drawn to the Guidelines on Mutual Assistance
and Collaboration in the Students' Handbook
[for open papers]

All queries on this assessment should be addressed to name of setter
[for open papers]

You must not write your name anywhere on your submission.
Your examination number should be written on the front of your submission.
[for open papers]

Details of the University-provided calculators may be found at

http://www.york.ac.uk/admin/eto/exams/StudentInfo/notesstudents.htm

Work that carries such a specification constitutes a formal assessment. Assessed practical work requiring electronic submission also constitutes a formal assessment. The setting of all such formal assessments is overseen by External Examiners appointed by the Senate, and all assessment of the results is carried out by the Board of Examiners of which the External Examiners are members. Students may assume that any other specification of work is to be done for general education purposes. Any assessment of such work will be for feedback to students, to inform them of their progress, and not for marks towards their degree classification. Such work is not the subject of this chapter of the Handbook.

14.1.2 Registration for assessments

Students sit only those closed examinations that apply to the modules that they have taken, and carry out only those open assessments that are appropriate for their scheme of study. All students will be registered automatically for their examinations by the Department. However, those students who choose option modules from a menu of modules have a duty to ensure that the Department knows which modules they are doing so that their examination registrations can be made. Students should check their registration (see section 10.3) at the start of each academic year and inform the Department of any errors. (https://evision.york.ac.uk/)

14.1.3 Timing of assessments

The dates of issue and of submission of open assessments can be found in the course charts for each degree scheme. Closed assessments usually take place in Spr/1 and Sum/8 for 1st, 2nd years undergraduates and MSc IT students. Closed assessments for final year undergraduates usually take place in Spr/1, Sum/7 and Sum/8. MSc SWE and MSc NC closed assessments usually take place in Spr/1; all other assessments for Part time MSc students are open assessments. Detailed timetables for closed examinations are posted on the notice boards on the main ground floor corridor (CS021).

Where possible, the issue and submission dates for open assessments will be staggered throughout the three terms of the academic year. The dates for open assessments are set in advance by the Board of Studies and cannot be varied without prior approval by the Board of Studies; if such alterations are made the revised dates will be published by the department.

Students should note that some overlap of assessments is almost inevitable. Computer Science / Mathematics students may have assessments set at different times of the year. Students should also note that Part A closed examinations normally start as early as Monday week 1 of the spring term.

14.1.4 The role of assessment setters

If students are having difficulties with a particular assessment, they should consult the member of staff who set that piece of work. The setter of an assessment will be identified on the cover sheet of the assessment. The setter will be best able to judge how much help to give. Where setters decide that giving some help is appropriate, they will disseminate that information to the whole group, e.g. by posting an article to

the appropriate Web forum (see http://www.cs.york.ac.uk/forum/). The setter will take into account the amount of help given to the whole group when marking the assessment.

14.1.5 The role of supervisors in assessments

Supervisors are able to offer general advice and guidance about modules, but cannot give direct help or even hints about particular assessments. Clearly, different supervisors are, either by expertise or by inclination, able to offer differing degrees of help and this would be unfair.

14.1.6 Missing an assessment

University regulations state that attendance at all University examinations is compulsory and that candidates who fail to present themselves for an examination at the time and place published, except when prevented from doing so by illness or other good cause, will be deemed to have failed in that part of the examination. Misreading of the examination timetable will not be regarded as "good cause". Similarly, with open assessments, a student who does not submit any work at all for a particular open assessment will be awarded a mark of zero. Persistently handing in work late or repeated non-submissions, may be taken into further account by the examiners. If a student becomes ill, or encounters other difficulties that they think the Board of Studies should take into account when considering their examination performance, they should fill in a green Extenuating Circumstances form (see section 14.2).

14.1.7 Feedback

All paper setters are required to give feedback on open assessments, usually within four term weeks of submission of that assessment. They will make available, usually through supervisors, the Departmental Office or by e-mail, at least a letter grade in the range A - F that is indicative of each student's performance on the assessment. This grade is intended to help assess progress and does not form part of the final degree assessment.

Grade	Interpretation
A	70-100
B	60-69
C	50-59
D	40-49
E	35-39
F	0-34

Feedback on closed assessments can be problematic, as the marks must first be reviewed by the Board of Examiners. In practice, this means that students will need to see their supervisors late in the afternoon on the day of meetings of the Board of Examiners. As a general rule the marks for the examinations taken in the first part of a year (Ia, IIa, etc.) should be available during week Spr/5 and those taken in the second part (Ib, IIb, etc.) should be available late in Sum/10/.

Students should note that marks released in Spr/5 for Part A examinations will be provisional, as they will not have been approved by an External Examiner. Such approval takes place at the summer meeting.

It is departmental practice to send every student a statement just after the end of the summer term detailing the student's marks in that year's formal assessments. The department gives no other feedback on the performance in closed examinations.

Students should also be aware that strict departmental processes are in place to ensure that assessments are rigorously monitored. All closed examinations and open assessments are presented to the external examiner with model solutions. Marks are allocated anonymously or double marked. The following guidelines should be followed if a student wishes to query the marks awarded for an open or closed assessment.

1) The student may request a meeting with the supervisor, who should then check that the mark given to the student is consistent with the mark on the assessed piece of work (and double check for addition errors), and with the mark presented to the Board of Examiners.
2) If the query is still not resolved, the student may request a meeting with the module assessor who will explain what was expected in the assessment (e.g., the specimen answer). The student will not be shown the marked assessment.
3) Where performance is hindered by personal circumstances, the extenuating circumstances procedure should be invoked.
4) In any other circumstances, which fall outside of the province of academic judgement, the student may, as a last resort, write formally to the Chair of the Board of Examiners, querying the mark and giving reasons why they have done so. "I thought I had done better" is not an acceptable reason, and students should be aware that under University regulations, there is no right of appeal against the academic judgement of examiners. Papers are not re-marked.

14.1.8 The Data Protection Act and examinations

All personal data produced and processed for the purpose of examinations and assessment may be obtained by a data subject (i.e. in this case, a student) via a data subject request. The only exceptions to this are examination scripts, which are expressly exempted.

Internal and external examiners' comments are both covered by the Act, and may be requested by the data subject within a stipulated timescale, normally 40 days.

Minutes of Examination Boards and the Extenuating Circumstances Committee are also covered by the Act, unless the data cannot be disclosed without additionally disclosing personal data about a third party. As personal data, examination results will not be disclosed to third parties without the data subject's consent. The department will provide pass lists with degree classification only for finalists who have given consent to their results being displayed in all or any particular fora (by signing a form issued by the Undergraduate Office); pass lists for all non-finalists will be displayed without degree classification.

Anyone wishing to make a data subject enquiry (a request to see whatever personal/sensitive information is held on them within the University, including examination and assessment data) must first approach the University's Data Protection Co-ordinator, see

http://www.york.ac.uk/admin/dpc/

Proof of identity is required and a small fee is payable for access to relevant information.

See section 3.6 for more details on the Data Protection Act.

14.2. Extenuating Circumstances Forms

Extenuating Circumstances Forms are available at the department Reception desk. Students can ask examiners to take account of medical or compassionate circumstances that have affected any assessment by completing the relevant parts of an Extenuating Circumstances form and providing relevant supporting evidence. Forms must be received by the Department before the Department's consideration of the relevant examination results (see University Regulation 5.3). Extenuating Circumstances Forms without supporting evidence will not be considered.

The supporting evidence should be a statement from a person competent to assess the case professionally. For example, a doctor's note for illness; a police crime number for victims of crime; a letter from parents if there have been family problems; a letter from a counsellor if their have been personal problems etc. Written medical evidence of illness should always be provided. Any medical certificate should give dates between which the doctor considers the student to be unfit. Note: self-certifications (see section 2.6.1) cannot be used in these circumstances.

14.3. Open Assessments

14.3.1 Dates of issue and submission

The dates of issue and submission of all open assessments are given in the course charts in this handbook. Submission dates are set by the Board of Studies and are staggered throughout the academic year (see section 14.1.3).

14.3.2 Issue of open assessments

Open assessments are not handed out during lectures. On the day of their issue, students should collect and sign for their copy of the assessment at the Departmental Office.

14.3.3 Submission of open assessments

All work for open assessments should be submitted to the Departmental Office. All students should submit their own work and sign the standard submission sheet to record the date and time of their submission; students failing to do this cannot expect to receive credit for their submitted work. The Departmental Office will not accept work submitted more than 24 hours before the stipulated deadline.

14.3.4 Penalties for late submission

An important feature of the Department's courses is that students should appreciate the need to complete work on time. To this end, the Department has a system of penalties for the late submission of work where the mark awarded will be multiplied

by a scaling factor that is determined by the time of submission. The deadline for the submission of work for an open assessment is normally 12 noon on a Wednesday; based on this assumption, the scaling factor would be as follows:

Factor	Description
1.00	For work submitted before noon on Wednesday
0.95	For work submitted after noon on Wednesday but before noon on Thursday
0.90	For work submitted after noon on Thursday but before noon on Friday
0.60	For work submitted after noon on Friday but before noon on Monday
0.20	For work submitted after noon on Monday but before noon on Tuesday
0.00	For work submitted after noon on Tuesday

If the deadline is not a Wednesday then similar penalties to the above apply based on the number of working days late. A weekend is considered to be two working days.

When an assessment is set, start working on it immediately. Near deadlines, computers have a perverse habit of breaking down. It is not the Department's practice to give extensions due to problems with a student's own computer. Similarly, an extension will not be given if the department's computers are at fault, so long as a reasonable amount of time was available to students before or after the problem.

14.3.5 Extensions for open assessments

This section deals with extensions for open assessments only. For extensions to projects, see section 13.2.1.

Students who are likely to submit late should consult their supervisor at the earliest possible opportunity. When medical or other problems occur, extensions may be granted, or account of these circumstances may be taken by the examiners. If a student has a problem that affects any assessed work, they should complete an Extenuating Circumstances form (see section 14.2).

Normally, extensions will only be granted:

1) To cover writing up; no extra laboratory time will be arranged for working on an artefact
2) For absences of one (working) day or more. That is to say that there will be no allowance for the odd hour or two at local job interviews - even if several of them add up to more than one day
3) If the absence amounts to 20% or more of the time allotted to the assessment (e.g. 1 day out of a 5-working-day assessment). In that case, an extension of 24 working hours will be given for every whole day's absence. Documentary evidence, e.g. the letter inviting the student for an interview, will be required.

Only the setter of the assessment, after discussion with the Chair of the Board of Studies, can grant extensions in line with the above guidelines.

14.3.6 Format of submission

In view of the large number of students who may be submitting work for assessment, it is important that everyone adheres to the following guidelines in order to ease the

burden both on office staff when the work is handed in, and on the person marking the work.

Submissions must carry your examination number. Your name and/or user name must not be present anywhere in your submission. The only exceptions to this rule are:

- Log books for sandwich placements
- Reports for the projects listed in section 13.1

Students must submit a cover page with at least their personal examination number, the title of the assessment and the examination paper number (e.g. 061120)

It is in a student's own interests that their written work should be legible and neatly laid out. It is difficult to give a good mark to work that is hard to read. Students should proof-read and spell-check their work before they hand it in: it is surprising how many sentences are written that do not make sense, or contain spelling mistakes.

Where program listings are to be submitted, they should be bound so that all pages can be read without having to remove the listing from the binder. Documentation should be securely attached, but be detachable for ease of reading. The student's examination number, the title of the assessment, the examination paper number (e.g. 061120) and the date should appear on the front of the binder in a position that can be clearly seen when the binder is face up. The personal examination number, the title of the assessment, the examination paper number and the date should also appear on any attachments to the binder (e.g. supporting documentation).

14.4. Assessed Practicals

Some modules are partly or wholly assessed by practical work carried out under examination conditions in the Department's laboratories and require electronic submission of work. These assessments are called assessed practicals and are classified as closed examinations.

The timing of assessed practicals requiring electronic submission will be published on the notice boards at the start of the module, and made available on the module's web page.

Most arrangements for assessed practicals are much the same as for conventional closed examinations. Work has to be completed within a timed period. Invigilators indicate when work can begin, and give a warning when the period is nearly over. Students who are entitled to extra time in closed examinations, for medical or other reasons, are also allowed extra time in assessed practicals. Students may not communicate with one another during the examination period. Any student needing to leave the laboratory temporarily (e.g. to go to the toilet) must be accompanied by an invigilator. Where students have to leave without returning, because they are ill, they should ask their doctor to send a medical certificate to the Department as soon as possible.

There are however two important differences between assessed practicals and conventional examinations. First, assessed practicals are normally open book: students may take their notes and books into the laboratory and freely refer to them. Secondly,

assessed practicals normally involve the use of computers. Students are allocated an examination account with a login name based on their examination number. Instead of answers written on paper, solutions are submitted electronically by the end of the examination period. Any student experiencing a failure of any part of the computer system during an assessed practical should immediately alert an invigilator.

A laboratory in use for an assessed practical is only open to students who are taking the assessment. A notice posted on the laboratory door should state the times between which the laboratory is unavailable for general use.

14.5. Assessment of Individual Projects

Each project report is marked by two members of staff: the supervisor and a second marker. Discrepancies in their marks are investigated and resolved. When necessary, additional internal examiners or the external examiners will consider the project. The care taken with project assessment reflects the high weighting given to project marks.

All project assessments also include an assessed presentation. However, with that exception, the report and associated documentation are the only evidence of which the examiners can take account. No matter how brilliant a student's ideas or notes, they will only be marked on what they submit.

Examiners use a standard form (mark sheet) on which to record their marks for a project. This form should be consulted in order to obtain an idea of which aspects project examiners consider important. Details of marking sheets and the most up-to-date versions of the project requirements (including presentations) can be found at:

http://www.cs.york.ac.uk/projects/

14.6. Returning Work to Students

It is a University rule that examination material must be retained for at least one year following its consideration by the full Board of Examiners.

Closed papers and Open assessments are not returned to students. The only exception to this is the project report. One copy of the project report will be returned to students after the final examiners' meeting of the academic year. For undergraduates, project reports are usually made available late on the last day of term, or on Degree Day.

Students who wish to make copies of submitted work to keep for their own reference or to show to prospective employers must do so before handing in the work. In the absence of provision to the contrary, the University is considered to own all material, including software, submitted for examination, for both undergraduate and higher degrees.

15. Notes on Examinations

15.1. Introduction

The Board of Examiners in Computer Science is responsible for all matters concerned with the setting and conduct of examinations. It consists of all the staff members of the Board of Studies together with the External Examiners in Computer Science and any member of the academic staff of the University involved in an examination in Computer Science. The Board of Examiners has absolute discretion in its recommendations for the award of a degree or diploma.

More detailed information about the Department's Assessment Policies and Procedures can be found at

http://www.cs.york.ac.uk/exams/DataPro/Procedures.htm

15.1.1 Examination paper rubrics

The rubrics for closed assessments vary and it is important that students read the rubric carefully before commencing the paper. Where a candidate attempts more than the specified number of questions, the marks for the best whole questions will be counted. Students should also note that the rubrics for open assessments vary widely from year to year.

15.1.2 Extenuating circumstances forms

Students can ask examiners to take account of medical or compassionate circumstances that have affected any assessment by completing an Extenuating Circumstances form (see section 14.2).

15.1.3 Past examination papers

The University (J.B. Morrell) Library holds a paper archive of all closed examination papers ever set by the Department. In addition, copies of past papers for Departmental closed assessments are available on-line on the Department's web pages, but these only go back three years (see section 5.3.2).

Past open papers and past resit papers (whether open or closed) are not available on-line, and are not lodged in the University Library. However, past MCP and TSP open papers are now available on-line. Model answers to past papers may be provided at the discretion of the lecturer. Answers to questions that require formal problem solving are more likely to be provided than answers that require short essays.

When a module is taught for the first time, or if it has been radically changed, or if the examination paper will be significantly different from that of previous years, the lecturer concerned must provide students on the module with a specimen paper.

15.2. First Year Examinations

At the end of the first year, the Board of Examiners in Computer Science sums the marks for Parts Ia and Ib examinations and arrives at a set of marks for Part I. The Board of Studies in Computer Science receives these, may take account of Extenuating Circumstances forms submitted by students, and makes recommendations to the

Senate. The Part I examination in Computer Science is a qualifying examination in which papers on related topics from both Part Ia and Ib are grouped into clumps. It is necessary to pass all clumps at 40% or more in order to continue with the course.

15.3. Second Year Examinations

At the end of the second year, the Board of Examiners in Computer Science sums the marks for Parts IIa and IIb examinations and arrives at a set of marks for Part II. The Board of Studies in Computer Science receives these, may take account of Extenuating Circumstances forms submitted by students, and makes recommendations to the Senate. The Part II examination in Computer Science is a qualifying examination in which papers on related topics from both Part IIa and IIb are grouped into clumps. It is necessary to pass all clumps at 40% or above in order to continue with the course.

MEng and MMath students who have achieved less than 50% aggregate after the Part II examinations are required to transfer to the relevant three-year degree at this stage (see sections 18.2.1 and 17.1.1).

15.4. Third Year Examinations

At the end of the third year, the Board of Examiners in Computer Science sums the marks for the examinations in each Part, including the project if applicable. Marks from Parts I, II and III, denoted by m1, m2 and m3 are normally combined in proportion 1:3:5. Considering T1, T2 and T3 as the maximum total marks of Parts I, II and III, the final mark M is computed as follows and expressed as a percentage

$$M = 100 (m1 + 3m2 + 5m3) / (T1 + 3T2 + 5T3)$$

For BSc/BEng students, the Board of Studies receives the relevant marks, considers the value of M, cumulated Extenuating Circumstances and any exceptional cases and recommends a classification to the Senate. The Senate then ratifies a classified degree list.

Certain candidates are examined viva voce; see section 15.9.

MEng and MMath students are required to achieve at least 50% at this stage in order to remain on the course. Refer to section 18.2 or 17.1 respectively.

Resits are not normally permitted at Part III. The University regulations should be consulted for a definitive statement on this point.

15.5. Fourth Year Examinations

At the end of the fourth year, the Board of Examiners in Computer Science combines the marks for the examinations in each Part, including the project. Marks from Parts I, II, III and IV are normally combined in proportion 1:3:5:7 in a similar way.

$$M = 100 (m1 + 3m2 + 5m3 + 7m4) / (T1 + 3T2 + 5T3 + 7T4)$$

The Board of Studies receives the relevant marks, considers the value of M, cumulated exceptional circumstances and any exceptional cases and recommends a classification to the Senate.

Certain candidates are examined viva voce; see section 15.9.

There are normally no resits for Part IV MEng or MMath examinations.

15.6. Failure to complete assessments

Where an undergraduate candidate has not submitted an element or elements, amounting to a small proportion (approximately one-ninth) of the weighted contributions to the overall degree assessment, and there are compelling medical or compassionate circumstances, then it is within the discretion of Boards to waive this element and award a classified degree on the work submitted and on such other written work as is available. In such a case, the total weighted contributions are calculated to a reduced maximum.

15.7. Undergraduate Degree Classification

The Department observes the University mark scale, which is as follows:

First Class Honours	70-100%
Upper Second Class Honours	60-69%
Lower Second Class Honours	50-59%
Third Class Honours	40-49%
Pass	35-39%
Fail	0-34%

Marks above 80% will be considered by the Board of Studies for recommendation to the University for a starred first class degree. Degree classification is not always the outcome of mechanical application of classification guidelines, since the Board of Studies takes into account various factors in arriving at the overall result. These include any extenuating circumstances recorded during a student's course of study.

15.8. Resit Examinations

Progress through the course requires students to pass all Year 1 and Year 2 clumps at honours level (>40%). Candidates who fail one or more clumps of papers in the Department's Part I or Part II examinations may, at the discretion of the Board of Examiners and the Board of Studies, and on payment of a fee, be permitted to resit the failed papers in those clumps prior to the start of the second/third year. Resits are not normally permitted in Part III or Part IV.

Resit papers are not normally identical to those taken the first time. Normally the Department will require candidates to resubmit answers to failed open papers by the middle of August, and to resit, under the same conditions as before, failed closed papers. The overall mark carried forward into later years will be the greater of 40% and the overall mark obtained when first taking the papers. A second failure at resit in one or more clumps will mean failure and exclusion from the University. In addition, students should also note that:

1) Students are responsible for finding out which resits they have to do.

2) Students are responsible for finding out when both open and closed resits will be held. Closed resit examinations are invariably held in the week before the August Bank Holiday.
3) Computer Science Departmental policy does not normally permit students to take closed resit examinations abroad. Thus, students should not make unchangeable plans (e.g. non-transferable flight bookings) for the summer vacation without considering whether they will need to be in York for resits in August.
4) Resits of open laboratory-based papers will normally require a student to be resident in York during some or all of the period of the examination.
5) Non laboratory-based open resit papers will be sent to students by post; it is the student's responsibility to inform the Department if they do not arrive by the scheduled date.
6) It is vital to provide up-to-date addresses for vacation (and other) periods via e:Vision at https://evision.york.ac.uk/.

Second-year students who are going on sandwich placement but who have to take resits will be expected to take them in the summer immediately following their Part II examinations, i.e. at the same time as their non-sandwich peers. In cases where this would cause severe difficulties students may apply to the Board of Studies for permission to defer the resits for one year, however, this will only be granted in exceptional circumstances.

Examinations that have to be re-taken, or taken late, on medical grounds, do not count as "resits" in the sense of this section.

15.9. "Viva Voce" Examinations

Each year the Board of Examiners chooses a small number of examination candidates for viva voce examination. The candidates chosen are usually those whose overall examination performance puts them near a degree classification borderline and whose ability as exhibited in the viva will be used as an additional indicator of whether or not they should be awarded the higher class. Distinction candidates are always given a viva voce examination. Note that it is the Department's policy not to use vivas to downgrade students who are just above a borderline.

Notice of the date on which the vivas will take place will be made on the Departmental notice board. Notice of which candidates have been chosen for viva will be made on the Departmental notice board on the day of the vivas. All final-year students, and all third-year MEng and MMath students, are required to be available for viva and should check the notice board on the appointed date to see whether they have been chosen and at what time and at what place they should attend.

Each candidate is normally interviewed by a small number of examiners - usually only three or four - including at least one of the External Examiners. MSc candidates are not normally subjected to viva voce examinations.

15.10. Poor Overall Performance in Examinations

For all degrees, the Board of Examiners has absolute discretion in its classification, but it is guided by the weighting system used for each part of the degree, in which each

constituent module counts in proportion to its importance in the course scheme and the load that it places upon the student. In each part, the Board of Examiners will take account of a notably good or bad performance in broad areas of the course (such as programming, or electronics). The examiners may withhold the award of a degree, or award an ordinary degree instead of an honours degree, or award a lower class of honours degree, or restrict the right to choose between a BEng and BSc degree, or restrict the right to advance from the third year to the fourth year of the MEng degree to a student who:

- Fails all or almost all closed papers; or
- Fails all or almost all open papers; or
- Fails to submit a satisfactory final-year project; or
- Repeatedly fails to submit, or submits late, open assessments.

15.11. Prizes

15.11.1 The Mike Pinson bursary

Mike Pinson was a graduate of the Department who died a short time after graduating, in 1996. Mike's family and friends established a bursary of £250 annually as a tribute to his memory. It is intended to assist individual students facing adversity to improve the quality of their University life. Precedence is given to nominees suffering a hearing impairment, and to undergraduates in the Computer Science Department.

Nominees should be undergraduates in their second year of study of a three-year course, or second or third year of study of a four-year course. Students about to enter a sandwich year are not eligible for the award. Nominations are made to the University Prizes and Scholarships Committee by the Board of Studies, and students wishing to be considered for nomination should consult their supervisors during the summer term of the year preceding eligibility.

15.11.2 Sponsored prizes

Some or all of the following industrially sponsored prizes are awarded on the recommendation of the Board of Studies in Computer Science.

Sponsor	Prize	Course	Year	Award
Logica CMG	£150	CS, CSM, CSSE, MCSE	1st	Outstanding performance in exams
Detica	£150	CS, CSM	2nd	Outstanding performance in exams
BAe Systems	£150	CSSE, MCSE	2nd	Outstanding performance in exams
Detica	£150	CSSE, MCSE	3rd	Outstanding performance in exams
QinetiQ	£150	CS, CSM	Final	Outstanding performance in exams (excluding project)
Logica	£150	CS, CSM	Final	Best final year project
IET	£50 + 2 yr membership	CS, CSM, CSSE	Final	Final Year best performance

Siemens Medal	£250 + medal	CSSE	Final	Best Final Year Student
Pinson Bursary	£250	CS, CSM, CSSE, MCSE	3rd or 4th year entry	Working "in adversity", preference deaf, CS

In addition to the above, each year the Department may award a small number of prizes to students with outstanding performances in Part I, Part II, Part III, Part IV or MSc examinations.

15.11.3 Other undergraduate prizes

The Institution of Engineering and Technology awards a prize annually to the student who submits the best finals project report in the IET-accredited undergraduate degree courses offered by the Department of Computer Science. The prize consists of a certificate and a sum of money, and is presented at a meeting of the Institution.

IBM Hursley donates a prize to the members of the winning team in the second-year team systems project (TSP module). The winning team is entered in the National ThinkPad Challenge competition at IBM Hursley's research laboratories, in autumn of the same calendar year.

Specific Information Related to Taught Courses

- This section of the handbook contains specific information material on a particular degree scheme.

- For general information relating to taught courses, see the previous section of this handbook.

- For information that is of general relevance to all students on taught courses, see the first section of this handbook

16. Degree Courses in Computer Science

16.1. Synopsis

Study in the Department leads to the following degrees.

Undergraduate Degrees		Postgraduate degrees					
Degree	BSc, BEng, MEng, MMath	MSc SWE	MSc IT	MSc NC	MRes BI	MSc SCSE	MSc GTC
Handbook Section	17 & 18	19	20	21	22	23.4	23.6

Key:

BEng	Bachelor of Engineering
BSc	Bachelor of Science
MEng	Master of Engineering
MMath	Master of Mathematics
MRes	Master of Research
MSc	Master of Science

16.2. Undergraduate Degree Courses

The undergraduate degree courses taught by the Department are:

UCAS codes			Degree	Course title	
Standard (3 years)	**Sandwich**	**Enhanced (4 years)**		**UCAS Title**	**Full Title**
G400	**G401**	**-**	**BEng/ BSc**	**Comp Sci**	**Computer Science**
GG41	**GGK1**	**-**	**BSc**	**Comp/ Maths EQ**	**Computer Science/ Mathematics**
-	**GG1K**	**GG14**	**MMath**	**Maths/ Comp EQ**	**Mathematics/ Computer Science**
-	**G461**	**G460**	**MEng**	**Comp SS Eng**	**Computer Systems and Software Engineering**

- Standard means 3 years at University, with no placements
- Sandwich means 3 or 4 years at University, with a 1-year placement between years 2 and 3
- Enhanced means 4 years at University

Students registered for the single-subject Computer Science course will normally be asked during their final year to choose whether they want to receive a BEng or BSc degree. There is no difference in the programme content. The advantage of choosing BEng is that it *shows* that the programme from which you have graduated has been partially accredited by a professional engineering institution.

At York, the designation BEng is available only for the *Computer Science* programme. Our *Mathematics/Computer Science* program is not accredited by any professional engineering institution, and so its designation is always BSc.

The Department uses a scheme of course codes to identify students in particular years of particular variants of its first degree courses:

First digit: year of course	Letter: subject combination	Last digit: Amount of other subjects
1 = 1st year 2 = 2nd year 3 = 3rd year 4 = 4th year (MEng and MMath)	X = Computer Science (Single Subject) Y = Computer Systems and Software Engineering (MEng) M = Computer Science with Mathematics (BSc) N = Mathematics with Computer Science (MMath)	0 = Single Subject degrees 1 = Main Computer Science, Subsidiary Maths 2 = Equal Computer Science and Maths 3 = Subsidiary Computer Science, Main Maths

The letter S is appended to indicate that the student is registered for the sandwich variant of the degree course. The letter R is appended to denote a student who has returned from a sandwich placement (see table 1).

Students registered for each of the degrees listed above take an appropriate course scheme in each year. Table 1 shows the course scheme (or alternative schemes in the case of Comp Sci / Maths students) for each year of each course.

The third and fourth year Mathematics combinations permit flexibility. In these cases, the last digit indicates the proportion of Mathematics options being taken in the year in question. On course GG14 and GG1K (MMath), it is possible to choose any of the four combinations of 3N[13] followed by 4N[13], without restriction.

SITS Route	UCAS	Degree	1st year	2nd year	3rd year	4th year	5th year
UBCOMSCOM3	**G400**	BEng / BSc Comp Sci	**1X0**	**2X0**	**3X0**	**-**	**-**
UBCOMSIND4	**G401**	BEng / BSc Comp Sci (Sandwich)	**1X0S**	**2X0S**	**3X0S**	**3X0R**	**-**
UMCSESCSE4	**G460**	MEng Comp SS Eng	**1Y0**	**2Y0**	**3Y0**	**4Y0**	**-**
UMCSESIND5	**G461**	MEng Comp SS Eng (Sandwich)	**1Y0S**	**2Y0S**	**3Y0S**	**3Y0R**	**4Y0R**
UBCOMAMAT3	**GG41**	BSc Comp Sci / Maths EQ	**1M2**	**2M2**	**3M[13]**	**-**	**-**
UBCOMAMAT4	**GGK1**	BSc Comp Sci / Maths EQ (Sandwich)	**1M2S**	**2M2S**	**3M2S**	**3M[13]R**	**-**
UMMATACOM4	**GG14**	MMath Maths / Comp Sci EQ	**1N2**	**2N2**	**3N[13]**	**4N[13]**	**-**
UMMATACOM5	**GG1K**	MMath Maths / Comp Sci (Sandwich)	**1N2S**	**2N2S**	**3N2S**	**3N[13]R**	**4N[13]R**

Table 1 List of all undergraduate degree schemes

Note: "3N[13]" means "3N1 or 3N3"

16.3. Postgraduate Taught Courses

There are seven varieties of postgraduate taught courses available, these are distinguished, for the purposes of this handbook only, by a code:

MRes BI	MRes in Bioinformatics	FT
MSc IT	MSc in Information Technology	FT
MSc SWE	MSc in Software Engineering	FT
MSc NC	MSc in Natural Computation	FT
MSc GTC	MSc in Gas Turbine Control	PT
MSc SCSE	MSc in Safety-Critical Systems Engineering	PT
Cert. SSE	Certificate in System Safety Engineering	PT

These are further distinguished as being either full time (FT) part time (PT) courses.

Some postgraduate taught courses also exist as "diploma" or "certificate" versions (e.g. Cert SWE: Certificate in Software Engineering). These are lesser qualifications that demand a reduced scheme of study, e.g. fewer modules or a shorter project report. For full details, refer to the appropriate section of this Handbook.

Unless the context indicates otherwise, the term "MSc" in this Handbook includes the Diploma and Certificate variants, if they exist.

17. BSc / MMath Computer Science and Mathematics

This section of the handbook deals with the BSc and MMath Degree courses.

17.1. MMath Degree Regulations

The formal regulations relating to academic progress, course transfers and the award of degrees are contained in the booklet Ordinances and Regulations, a copy of which is issued to all students when they register at the University. The following is an explanation of how the relevant regulations are applied by the Boards of Studies in Computer Science and in Computer Science and Mathematics.

17.1.1 Transfer between BSc and MMath courses

1) Students are permitted to transfer from the BSc (CS / Maths) course to the MMath course at any time up to the end of their second year, subject to making satisfactory progress. However, a student who is in receipt of Local Authority fees must complete any course transfer before the start of Year 2 if the transfer requires an extension of the period of study.
2) Similarly, students are permitted to transfer from the MMath course to the BSc (CS / Maths) at any time up to the end of the second year.

17.1.2 Progress from year II to year III

1) Progress to year III is conditional upon satisfactory academic results in the first two years. Students are normally expected to have achieved an aggregate mark of at least 50% in Computer Science and at least 60% in Mathematics.
2) If this standard is not reached, a student is normally required to transfer to the BSc course for their third (and final) year; only in exceptional circumstances would the Combined Board of Studies recommend to the university that a student should continue to be registered for the MMath degree despite marks below the required standards.

17.1.3 Progress from year III to year IV

1) Students who fail to obtain an aggregate mark of 50% overall after Part III examinations, but do not have a failing mark, are normally recommended for the award of a BSc degree at the end of the third year, with the appropriate classification.

17.1.4 Progress during year IV

1) To qualify for the award of the MMath degree, students must normally pass in the project (PR4 or the Mathematics Project, as appropriate).
2) The MMath degree is an honours degree that may be awarded in one of the following classes: Class I; Class II division (i); Class II division (ii); Class III. In appropriate circumstances, the degree of MMath with Honours (Aegrotat) may be awarded. There is no "Ordinary" MMath degree.
3) Students who proceed to year IV of the course normally relinquish their right to the award of a BSc degree. However, in exceptional circumstances a student who is unable to complete year IV of the course may apply through the Joint Board to the University's Special Cases Committee for the award of a BSc degree. The

award of a BSc degree in such circumstances may be deferred until the date when the MMath course would normally have been completed.

17.2. CS / Maths First Year Modules (1[MN]2)

17.2.1 CS / Maths First Year Modules Part A

Module	Code	Full Title	Credits	Clump	Strand	Lecturer	Assessment 1	Assessment 2
PD1	0610325	Professional Development Seminars	0.00			ss	unassessed	unassessed
ICS	0610111	Introduction to Computer Systems	10.00	CS1-B	AR	facp	Closed: 1.5 hrs	
POP	0610110	Principles of Programming	10.00	CS1-A	PR	dlk	Open: Aut/6/Mon - Aut/6/Fri	Open: Aut/10/Mon - Aut/10/Fri
TUT		Tutorials	0.00			tut	Unassessed	Unassessed
Maths Dept		Mathematics Modules	30.00					

Table 2 CS / Maths First Year Modules Part A

17.2.2 CS / Maths First Year Modules Part B

Module	Code	Full Title	Credits	Clump	Strand	Lecturer	Assessment 1	Assessment 2
SUB	-	Setting up a Business	0.00			ja	Unassessed	Unassessed
CAR	0610121	Computer Architectures	20.00	CS1-B	AR	cb, ja	Closed: 3 hrs	
ADS	0610120	Algorithms and Data Structures	20.00	CS1-A	PR	jlj, jt	Open: Sum/2/Tues - Sum/5/Weds	Closed: 1.5 hrs
TUT		Tutorials	0.00			tut	Unassessed	Unassessed
Maths Dept		Mathematics Modules	30.00					

Table 3 CS / Maths First Year Modules Part B

17.3. CS / Maths Second Year Modules (2[MN]2)

The division of workload between parts A and B for Computer Science modules will be 20 credits in part A and 40 credits in part B. The division of workload between parts A and B in Mathematics will normally be the same but there may be some room for flexibility.

Students must take exactly two of the following 30 credit strands in Computer Science: SE, SY, UI, TH/AI and maths modules worth 60 credits.

CGV may also be available as an option in the third or fourth year for students who did not take it in their second year.

Note that TSP has a Team open assessment in Sum/1/Wed to Sum/2/Fri. This sometimes clashes with Maths exams.

The use of mathematical methods or the application of mathematical results plays a major role in the following modules: CGV, TOC and LPA.

In Computer Science, CS/Maths second year students must choose two strands from the following:

1) MSD+RDQ+TSP (Software Engineering strand - SE)
2) OPS+NDS+LSA (Systems Strand - SY)
3) DOI+CGV (User Interfaces strand - UI)
4) TOC+LPA (Theory/AI strand - TH_AI)

You must additionally choose 60 credits of Maths

- The strands cannot be split.
- The options CGV and LSA require that you have knowledge of the programming language C. A crash course on C is held in Autumn Week 1.
- The Team System Project option may clash with Mathematics examinations in the first week of the Summer term; students who take this module do so at their own risk.
- The use of mathematical methods or application of mathematical results plays a major role in the following modules: CGV, TOC and LPA.
- CGV may be available as a 3rd year option to those who do not take it in their 2nd year.

17.3.1 CS / Maths Second Year Modules Part A

Module	Code	Full Title	Credits	Clump	Strand	Lecturer	Assessment 1	Assessment 2
CCC		Crash Course on C	0.00			adne	Unassessed	Unassessed
MSD	0620147	Modelling and System Design	10.00	CS2-A	SE	facp, rfp	Closed: 1.5 hrs	
TOC	0620132	Theory of Computation	10.00	CS2-D	TH	dp	Closed: 1.5 hrs	
OPS	0620131	Operating Systems	10.00	CS2-B	SY	nca	Closed: 1.5 hrs	
Maths Dept		Mathematics Modules	20.00					

Table 4 CS / Maths Second Year Modules Part A

17.3.2 CS / Maths Second Year Modules Part B

Module	Code	Full Title	Credits	Clump	Strand	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00			ja	Unassessed	Unassessed
NDS	0630164	Networks and Distributed Systems	10.00	CS2-B	SY	ijb, nca	Closed: 1.5 hrs	
TSP	0620359	Team Systems Project	10.00	CS2-A	SE	tpk	Open: Sum/1/Weds - Sum/2/Fri	
RDQ	0620358	Relational Databases and Query Languages	10.00	CS2-A	SE	alcc	Closed: 1.5 hrs	
LSA	0620354	Lexical and Syntax Analysis of Programming Languages	10.00	CS2-B	SY	adne, skm	Closed: 1.5 hrs	
LPA	0620146	Logic Programming and Artificial Intelligence	20.00	CS2-D	AI	amf, dk	Closed: 3 hrs	
CGV	0620145	Computer Graphics and Visualisation	20.00	CS2-E	UI	agb, ip	Open: Sum/3/Weds - Sum/6/Weds	Closed: 1.5 hrs
Maths Dept		Mathematics Modules	40.00					

Table 5 CS / Maths Second Year Modules Part B

17.4. CS / Maths Third Year Modules (3[MN][13])

Computer Science options are taken from the list in section 0 and 18.5.4. There is no compulsory stranding for CS / Maths students, but prerequisites must be met and students are encouraged to pick modules in strands. The use of mathematical methods or the application of mathematical results plays a major role in the following modules: AGM, CVI, FPD, FSS, FUN, and SEM.

Third-year MMath students will take a 10-credit writing module. This module must be Computer Science Writing (CSW) if the student is doing a third-year CS project, otherwise it must be Mathematical Writing.

Third-year BSc students who do a project will take a writing module in the same subject. Those who do not take a project will not take a writing module. The Computer Science Writing module is assessed as part of the 40-credit CS project. Mathematical Writing is assessed separately from any Maths project.

MMath students doing projects in both the third and the fourth year must take their projects in different subjects.

CS/Maths students must decide whether they want to be a 3M1 or a 3M3 student: 3M1 students do slightly more Computer Science than Maths (70:50), including a Computer Science project; 3M3 students do slightly more Maths than Computer Science (70:50), and do not do a Computer Science project. Similarly, 3N1 students do slightly more Computer Science than Maths (70:50), including a Computer Science project; and 3N3 students do slightly more Maths than Computer Science (70:50), and do not do a Computer Science project in the third year.

If you decide to be a 3M1 or 3N1 student, you must take PR3 - the project worth 40 credits, which includes the lectures from CSW, but not the assessment. CSW lectures are given in the Autumn term. You must then choose a further 30 credits of Computer Science and 50 credits of Mathematics. In addition, 3N1 students will not be allowed to take a second Computer Science project in their final year.

If you decide to be a 3M3 or 3N3 student, you do not do a Computer Science project in your third year. You must choose 50 credits of Computer Science and you will then choose 70 credits of Mathematics. Note that if you decide to be a 3N3 and you intend to take a Computer Science project in your fourth year, you will need to take the Maths Writing Module (0590202) in your third year.

3N1 and 3N3 students should bear in mind that their 4th year options will come from a similar list as for their 3rd year. Students may choose whether or not to take a Computer Science project, as below. Either

3M1 or 3N1	
Part A	Part B
10 credits of CS option	20 credits of CS options
CS Project (PR3, 40 credits) (includes taught material from CSW)	
20 credits of Maths	30 credits of Maths

Or

3M3 and 3N3	
Part A	Part B
20 credits of CS option	30 credits of CS options
30 credits of Maths	40 credits of Maths

- The use of mathematical methods or application of mathematical results plays a major role in the following modules: AGM, CRY, CVI, FPD, FSS, FUN and NSC.
- There is no compulsory stranding (though pre-requisites must be met) but students are encouraged to pick modules in strands.
- Students should note that CGV and SDM assessments are running in parallel.
- CGV can only be taken in the third year by students who did not take it in the second year.
- CGV and CGO require that you have knowledge of the programming language C. A crash course in C is held in Week 1 Autumn Term.

17.4.1 BSc / MMath, CS / Maths (3[MN]1 = 70:50) Part A

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
CCC		Crash Course on C	0.00		adne		
AGM	0630395	Algorithms for Graphical Models	10.00	AI	jc	Open: Spr/2/Mon - Spr/5/Weds	
CSW	0630390	Computer Science Writing	10.00	MI	hp	Open: Aut/4/Weds - Spr/3/Weds	Presentation: Spr/3 or 4/tbd
FUN	0630386	Functional Programming	10.00	PR	cr	Closed: 1.5 hrs	
CGO	0630384	Code Generation and Optimisation	10.00	SY	mw	Closed: 1.5 hrs	
FSS	0630380	Formal Specification of Systems	10.00	TH	jlj	Closed: 1.5 hrs	
PR3	0630181	Third Year Project	40.00		tut (sk)	Open: Aut/1/Mon - Spr/10/Tues	Presentation: Spr/10/Thurs - Fri
PAT	0630156	Pattern Recognition and Neural Networks	10.00	AR	rcw	Closed: 1.5 hrs	

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
EMS	0630108	Embedded Systems	10.00	MI	nca	Open: Aut/5/Weds - Aut/10/Weds	
Maths Dept		Mathematics Modules	20.00				

Table 6 CS / Maths Third Year Modules (3[MN]1 = 70:50) Part A

17.4.2 BSc / MMath, CS / Maths (3[MN]1 = 70:50) Part B

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00		ja		
NSC	0640176	Non-Standard Computation	10.00	MI	ss	Closed: 1.5 hrs	
SDM	0630394	System Design Methodologies	10.00	MO	ck	Open: Sum/3/Weds - Sum/6/Weds	
PUP	0630393	Principles of Unconventional Programming	10.00	PR	amw	Closed: 1.5 hrs	
MLD	0630392	Metamodelling and Language Design	10.00	MO	facp, rfp	Closed: 1.5 hrs	
CVI	0630387	Computer Vision	20.00	AR	agb, erh, rcw	Closed: 3 hrs	
FPD	0630383	Formal Program Development	10.00	TH	sk	Closed: 1.5 hrs	
PR3	0630181	Third Year Project	40.00		tut (sk)	Open: Aut/1/Mon - Spr/10/Tues	Presentation: Spr/10/ Thurs - Fri
RTS	0630174	Real Time Systems and Programming Languages	20.00	SY	ab	Closed: 3 hrs	

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
CRY	0630109	Crypto Attacks and Countermeasures	10.00	MI	jac	Closed: 1.5 hrs	
AFG	0630106	Artificial Intelligence for Games	10.00	AI	dk	Closed: 1.5 hrs	
NLP	0630105	Natural Language Processing	10.00	AI	skm	Closed: 1.5 hrs	
LSA	0620354	Lexical and Syntax Analysis of Programming Languages	10.00	SY	adne, skm	Closed: 1.5 hrs	
CGV	0620145	Computer Graphics and Visualisation	20.00	UI	agb, ip	Open: Sum/3/Weds - Sum/6/Weds	Closed: 1.5 hrs
Maths Dept		Mathematics Modules	30.00				

Table 7 CS / Maths Third Year Modules (3[MN]1 = 70:50) Part B

17.4.3 BSc / MMath, CS / Maths (3[MN]3 = 50:70) Part A

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
CCC		Crash Course on C	0.00		adne		
AGM	0630395	Algorithms for Graphical Models	10.00	AI	jc	Open: Spr/2/Mon - Spr/5/Weds	
CSW	0630390	Computer Science Writing	10.00	MI	hp	Open: Aut/4/Weds - Spr/3/Weds	Presentation: Spr/3 or 4 tbd
FUN	0630386	Functional Programming	10.00	PR	cr	Closed: 1.5 hrs	
CGO	0630384	Code Generation and Optimisation	10.00	SY	mw	Closed: 1.5 hrs	
FSS	0630380	Formal Specification of Systems	10.00	TH	jlj	Closed: 1.5 hrs	
PAT	0630156	Pattern Recognition and Neural Networks	10.00	AR	rcw	Closed: 1.5 hrs	
EMS	0630108	Embedded Systems	10.00	MI	nca	Open: Aut/5/Weds - Aut/10/Weds	
Maths Dept		Mathematics Modules	30.00				

Table 8 CS / Maths Third Year Modules (3[MN]3 = 50:70) Part A

17.4.4 BSc / MMath, CS / Maths (3[MN]3 = 50:70) Part B

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00		ja	Unassessed	Unassessed
NSC	0640176	Non-Standard Computation	10.00	MI	ss	Closed: 1.5 hrs	
SDM	0630394	System Design Methodologies	10.00	MO	ck	Open: Sum/3/Weds - Sum/6/Weds	
PUP	0630393	Principles of Unconventional Programming	10.00	PR	amw	Closed: 1.5 hrs	
MLD	0630392	Metamodelling and Language Design	10.00	MO	facp, rfp	Closed: 1.5 hrs	
CVI	0630387	Computer Vision	20.00	AR	agb, erh, rcw	Closed: 3 hrs	
FPD	0630383	Formal Program Development	10.00	TH	sk	Closed: 1.5 hrs	
RTS	0630174	Real Time Systems and Programming Languages	20.00	SY	ab	Closed: 3 hrs	
CRY	0630109	Crypto Attacks and Countermeasures	10.00	MI	jac	Closed: 1.5 hrs	

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
AFG	0630106	Artificial Intelligence for Games	10.00	AI	dk	Closed: 1.5 hrs	
NLP	0630105	Natural Language Processing	10.00	AI	skm	Closed: 1.5 hrs	
LSA	0620354	Lexical and Syntax Analysis of Programming Languages	10.00	SY	adne, skm	Closed: 1.5 hrs	
CGV	0620145	Computer Graphics and Visualisation	20.00	UI	agb, ip	Open: Sum/3/Weds - Sum/6/Weds	Closed: 1.5 hrs
Maths Dept		Mathematics Modules	40.00				

Table 9 CS / Maths Third Year Modules (3[MN]3 = 50:70) Part B

17.5. MMath Fourth Year Modules (4N[13])

See section 10.3 for general information about your choice of options. Computer Science options are taken from the list in section 0 and 18.5.4. It may also be possible to take centrally timetabled modules from 18.6.1 and 18.6.2 but students should consult the Chair of the Computer Science Board of Studies before doing so. In 2005-6, COP, PDV, ALA, NSC and CBC were available to MMath students. Naturally, students cannot take any options that they have already taken.

Students must do either a CS or a Maths project (PR4, 40 credits) and must take 40 CS credits (either 10 in Part A plus 30 in Part B, or 20 + 20).

Students who will enter MMath fourth year in 2006 – 2007 or later must observe the requirements for projects and writing modules as described in section 17.4.

4N1 students do slightly more Computer Science than Maths (80:40), including a Computer Science project; and 4N3 students do slightly more Maths than Computer Science (80:40), and do not do a Computer Science project.

If you are a 4N1 student, you must take PR4 - the project worth 40 credits and a further 40 Computer Science credits. You will then choose 40 credits of Mathematics.

If you are a 4N3 student, you will do a Mathematics project worth 40 credits and a further 40 Computer Science credits. You will then choose 40 credits of Mathematics.

As well as 3rd year CS modules, MMath students are also permitted to take MEng modules that are centrally timetabled. Note that these are often taught in a more intensive fashion, with lectures compressed in to a few weeks rather than being spread over weeks 2-10.

- Options taken by fourth year students may only be those that they have not taken in previous years.
- CGV and CGO require that you have knowledge of the programming language C. A crash course in C is held Week 1 Autumn Term.
- Students should note that CGV and SDM assessments are running in parallel.

17.5.1 MMath, Maths / CS (4N1 = 80:40) Part A

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
CCC		Crash Course on C	0.00	adne	Unassessed	Unassessed
EVO	0640534	Evolutionary Algorithms	10.00	jac, ss	Open: Aut/9/Fri - Spr/3/Weds	
CRS	0640502	Critical Systems	10.00	ab, ijb	Open: Aut/7/Fri - Spr/1/Weds	Open: Aut/10/tbd - Aut/10/tbd
PR4	0640498	Fourth Year Project (MMath)	40.00	tut (sk)	Open: Aut/1/Mon - Sum/3/Tues	Presentation: Sum/3/ Thurs - Fri
COP	0640178	Constraint Programming	10.00	amf	Open: Aut/9/Fri - Spr/3/Weds	
AGM	0630395	Algorithms for Graphical Models	10.00	jc	Open: Spr/2/Mon - Spr/5/Weds	
QIP	0630391	Quantum Information Processing	10.00	slb	Closed: 1.5 hrs	
FUN	0630386	Functional Programming	10.00	cr	Closed: 1.5 hrs	

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
CGO	0630384	Code Generation and Optimisation	10.00	mw	Closed: 1.5 hrs	
FSS	0630380	Formal Specification of Systems	10.00	jlj	Closed: 1.5 hrs	
PAT	0630156	Pattern Recognition and Neural Networks	10.00	rcw	Closed: 1.5 hrs	
EMS	0630108	Embedded Systems	10.00	nca	Open: Aut/5/Weds - Aut/10/Weds	
Maths Dept		Mathematics Modules	20.00			

Table 10 MMath, Maths / CS (4N1 = 80:40) Part A

17.5.2 MMath, Maths / CS (4N1 = 80:40) Part B

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00	ja	Unassessed	Unassessed
EHW	0640532	Evolvable Hardware	10.00	Elec (sok)	Open: Spr/5/Fri - Spr/10/Weds	
CBC	0640512	Computing with Biology and Chemistry	10.00	sok	Open: Spr/9/Fri - Sum/3/Weds	
PR4	0640498	Fourth Year Project (MMath)	40.00	tut (sk)	Open: Aut/1/Mon - Sum/3/Tues	Presentation: Sum/3/ Thurs - Fri
NSC	0640176	Non-Standard Computation	10.00	ss	Closed: 1.5 hrs	
ALA	0640175	Adaptive and Learning Agents	10.00	dlk	Open: Spr/8/Fri - Sum/1/Weds	
SDM	0630394	System Design Methodologies	10.00	ck	Open: Sum/3/Weds - Sum/6/Weds	
PUP	0630393	Principles of Unconventional Programming	10.00	amw	Closed: 1.5 hrs	
MLD	0630392	Metamodelling and Language Design	10.00	facp, rfp	Closed: 1.5 hrs	

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
CVI	0630387	Computer Vision	20.00	agb, erh, rcw	Closed: 3 hrs	
FPD	0630383	Formal Program Development	10.00	sk	Closed: 1.5 hrs	
RTS	0630174	Real Time Systems and Programming Languages	20.00	ab	Closed: 3 hrs	
CRY	0630109	Crypto Attacks and Countermeasures	10.00	jac	Closed: 1.5 hrs	
AFG	0630106	Artificial Intelligence for Games	10.00	dk	Closed: 1.5 hrs	
NLP	0630105	Natural Language Processing	10.00	skm	Closed: 1.5 hrs	
CGV	0620145	Computer Graphics and Visualisation	20.00	agb, ip	Open: Sum/3/Weds - Sum/6/Weds	Closed: 1.5 hrs
Maths Dept		Mathematics Modules	20.00			

Table 11 MMath, Maths / CS (4N1 = 80:40) Part B

17.5.3 MMath, Maths / CS (4N3 = 40:80) Part A

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
CCC		Crash Course on C	0.00	adne	Unassessed	Unassessed
EVO	0640534	Evolutionary Algorithms	10.00	jac, ss	Open: Aut/9/Fri - Spr/3/Weds	
CRS	0640502	Critical Systems	10.00	ab, ijb	Open: Aut/7/Fri - Spr/1/Weds	Open: Aut/10/tbd - Aut/10/tbd
COP	0640178	Constraint Programming	10.00	amf	Open: Aut/9/Fri - Spr/3/Weds	
AGM	0630395	Algorithms for Graphical Models	10.00	jc	Open: Spr/2/Mon - Spr/5/Weds	
QIP	0630391	Quantum Information Processing	10.00	slb	Closed: 1.5 hrs	
FUN	0630386	Functional Programming	10.00	cr	Closed: 1.5 hrs	
CGO	0630384	Code Generation and Optimisation	10.00	mw	Closed: 1.5 hrs	
FSS	0630380	Formal Specification of Systems	10.00	jlj	Closed: 1.5 hrs	

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
PAT	0630156	Pattern Recognition and Neural Networks	10.00	rcw	Closed: 1.5 hrs	
EMS	0630108	Embedded Systems	10.00	nca	Open: Aut/5/Weds - Aut/10/Weds	
Maths Dept		Mathematics Project	40.00			
Maths Dept		Mathematics Modules	20.00			

Table 12 MMath, Maths / CS (4N3 = 40:80) Part A

17.5.4 MMath, Maths / CS (4N3 = 40:80) Part B

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00	ja	Unassessed	Unassessed
EHW	0640532	Evolvable Hardware	10.00	Elec (sok)	Open: Spr/5/Fri - Spr/10/Weds	
CBC	0640512	Computing with Biology and Chemistry	10.00	sok	Open: Spr/9/Fri - Sum/3/Weds	
NSC	0640176	Non-Standard Computation	10.00	ss	Closed: 1.5 hrs	
ALA	0640175	Adaptive and Learning Agents	10.00	dlk	Open: Spr/8/Fri - Sum/1/Weds	
SDM	0630394	System Design Methodologies	10.00	ck	Open: Sum/3/Weds - Sum/6/Weds	
PUP	0630393	Principles of Unconventional Programming	10.00	amw	Closed: 1.5 hrs	
MLD	0630392	Metamodelling and Language Design	10.00	facp, rfp	Closed: 1.5 hrs	
CVI	0630387	Computer Vision	20.00	agb, erh, rcw	Closed: 3 hrs	

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
FPD	0630383	Formal Program Development	10.00	sk	Closed: 1.5 hrs	
RTS	0630174	Real Time Systems and Programming Languages	20.00	ab	Closed: 3 hrs	
CRY	0630109	Crypto Attacks and Countermeasures	10.00	jac	Closed: 1.5 hrs	
AFG	0630106	Artificial Intelligence for Games	10.00	dk	Closed: 1.5 hrs	
NLP	0630105	Natural Language Processing	10.00	skm	Closed: 1.5 hrs	
CGV	0620145	Computer Graphics and Visualisation	20.00	agb, ip	Open: Sum/3/Weds - Sum/6/Weds	Closed: 1.5 hrs
Maths Dept		Mathematics Project	40.00			
Maths Dept		Mathematics Modules	20.00			

Table 13 MMath, Maths / CS (4N3 = 40:80) Part B

18. BEng / BSc Computer Science, MEng Computer Systems and Software Eng

This section of the handbook deals with the (1) BEng and BSc Computer Science and (2) MEng Computer Systems and Software Engineering degree courses.

18.1. BEng/BSc in Computer Science

Students on this programme can choose whether to graduate with a BEng or BSc degree. All BEng/BSc finalists will be e-mailed in the January before their graduation, asking which degree title they would like. There is no difference in course content between BEng and BSc.

18.2. MEng Degree Regulations

The MEng degree is a masters level degree awarded at the end of four taught undergraduate years. The formal regulations relating to academic progress, course transfers and the award of degrees are contained in the booklet Ordinances and Regulations, a copy of which is issued to all students when they register at the University. The following is an explanation of how the relevant regulations are interpreted by the Board of Studies and by the Senate of the University, which may delegate its powers in these matters to the Special Cases Committee.

18.2.1 Transfer between BEng / BSc and MEng courses

1) Students are normally permitted to transfer from the BEng / BSc to the MEng before the start of Year 2. Note that a BEng / BSc student who has chosen the UI strand in preference to the EL strand in the second year will not normally be allowed to transfer into the MEng course; transfer of modules from UI to EL is normally subject to a quota for EL. See section 1.3
2) Subject to satisfactory progress, students will be permitted to transfer from the MEng course to the BEng /BSc course at any time up to the end of year 2.
3) Students wishing to transfer from the MEng course to the BEng / BSc course after the beginning of Year 3 must ask the Chair of Board of Studies to make an application to the Special Cases Committee of the University for approval. The Board of Studies will support such a request only in exceptional circumstances. The award of the BEng / BSc degree may be deferred until the date when the MEng degree course would normally have been completed.
4) Students who, for whatever reason, transfer out of the MEng course without having completed a project (PR3 or PR5) accreditable by the BCS / IEE will not be eligible for the award of a BEng degree. If a degree is awarded, it will be a BSc in CSSE.

18.2.2 Progress from year II to year III

Progress to year III is conditional on satisfactory academic performance. Students normally have to achieve a mark of 50% after part II (i.e. the part I and Part II combined mark). Students achieving less than 50% must transfer to the BEng/BSc course.

18.2.3 Progress from year III to year IV

1) Progress to year IV is conditional upon satisfactory academic performance. To conform to national Masters level criteria, students must achieve a minimum grade of class II division (ii) i.e. an aggregate mark of 50% at the end of their third year. Only in very exceptional circumstances will the Board of Studies be prepared to recommend to the Senate that students who have achieved a lower grade be permitted to proceed to year IV.
2) Students who are unable to proceed to the fourth year because they fail to reach the required academic standard will be eligible for the award of a BSc in CSSE degree at the end of year III, with the appropriate classification.
3) Students who have disciplinary offences, may be required to graduate before Part IV, with the appropriate classification.

18.2.4 Progress during year IV

1) (a) To qualify for the award of the MEng degree, students starting courses before October 2005 must normally achieve a pass grade in the project (PR5).
   (b) For students starting courses in October 2005 or later: To qualify for the award of the MEng degree, students must achieve at least 50% in the final year, and must achieve at least 50% in the project (PR5)
2) The MEng degree is an honours degree that may be awarded in one of the following classes: Class I; Class II division (i); Class II division (ii). In appropriate circumstances, the degree of MEng with Honours (Aegrotat) may be awarded. There is no third class or "Ordinary" MEng degree.
3) (a) Students starting courses before October 2004 who proceed to the fourth year of the course will normally relinquish their right to the award of a BSc degree. However, in cases where there are compelling circumstances in mitigation of failure to complete year IV of the course, the Senate will consider applications for the award of a BSc degree. The award of a BSc degree in such circumstances may be deferred until the date when the MEng course would normally have been completed.
   (b) For students starting courses in October 2004 or later: A new degree has been introduced, the BSc in Computer Systems and Software Engineering (CSSE). Students are not able to register for the degree, and cannot transfer onto it. It is only available as a result of a recommendation by the Board of Studies, at the end of the third or fourth year of the MEng. The degree is not accredited by the BCS or IEE. The content of the degree is identical to the first three years of the MEng programme. The award of a BSc in CSSE will be considered in the following circumstances:
   - a 3rd year MEng student who fails to meet the requirements to progress to the 4th year (50% overall)
   - a 4th year MEng student who does not meet the requirements for an MEng degree (currently 50% overall and a pass on the project, but see 1b above).

   In both cases, a BSc in CSSE will be awarded, if appropriate, at the level achieved at the end of the third year. If a 4th year MEng student is unable to complete the year for medical or compassionate reasons, they can either request an aegrotat degree or the award of the BSc in CSSE at the level achieved at the end of the third year. If, despite being unable to complete the fourth year, a student has met the requirements for accreditation, then a recommendation may be made for the award of the BSc/BEng in Computer Science, the accreditted 3-year degree.

As with all changes in regulations, the new regulations can also be applied to students who are already part-way through the course, if it would be to their advantage.

18.3. BEng / BSc CS and MEng CSSE First Year Modules (1[XY]0)

18.3.1 BEng / BSc CS and MEng CSSE First Year Modules Part A

Module	Code	Full Title	Credits	Clump	Strand	Lecturer	Assessment 1	Assessment 2
PD1	0610325	Professional Development Seminars	0.00			ss	unassessed	unassessed
IDD	0610114	Introduction to Digital Circuit Design	10.00	CS1-C	EL	idb	Closed: 1.5 hrs	
ICM	0610113	Introduction to Computer Mathematics	10.00	CS1-D	TH	cr	Closed: 1.5 hrs	
ICS	0610111	Introduction to Computer Systems	10.00	CS1-B	AR	facp	Closed: 1.5 hrs	
POP	0610110	Principles of Programming	10.00	CS1-A	PR	dlk	Open: Aut/6/Mon - Aut/6/Fri	Open: Aut/10/Mon - Aut/10/Fri
TUT		Tutorials	0.00			tut	Unassessed	Unassessed

Table 14 BEng / BSc CS and MEng CSSE First Year Modules Part A

18.3.2 BEng / BSc CS and MEng CSSE First Year Modules Part B

Module	Code	Full Title	Credits	Clump	Strand	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00			ja	Unassessed	Unassessed
PD1	0610325	Professional Development Seminars	0.00			ss	Unassessed	Unassessed
DAD	0610125	Digital and Analogue Circuit Design	20.00	CS1-C	EL	idb, nep	Open: Aut/8/Mon - Sum/2/Weds	Closed: 3 hrs
MCS	0610123	Mathematics for Computer Science	20.00	CS1-D	TH	erh, sk	Closed: 3 hrs	
CAR	0610121	Computer Architectures	20.00	CS1-B	AR	cb, ja	Closed: 3 hrs	
ADS	0610120	Algorithms and Data Structures	20.00	CS1-A	PR	jlj, jt	Open: Sum/2/Tues - Sum/5/Weds	Closed: 1.5 hrs
TUT		Tutorials	0.00			tut	Unassessed	Unassessed

Table 15 BEng / BSc CS and MEng CSSE First Year Modules Part B

18.4. BEng / BSc CS and MEng CSSE Second Year Modules (2[XY]0)

See Section 10.3 for general information about choosing modules (if appropriate). The modules are listed in Tables 16 and 17.

18.4.1 Rules

- All students take the SE, SY and TH strands
- The EL strand is compulsory for 2Y0 students.
- 2X0 students choose between the EL and UI strands.
- Where a module is offered in both a student's second and third years (such as CGV) it may be taken in at most one of those years.

18.4.2 Notes

- Strands may not be split
- LSA and CGV require knowledge of the C programming language. (This knowledge can be obtained from the unassessed module `Crash Course in C' (CCC), taught in Aut/1.)

18.4.3 BEng / BSc CS and MEng CSSE Second Year Modules Part A

Module	Code	Full Title	Credits	Clump	Strand	Lecturer	Assessment 1	Assessment 2
CCC	0650690	Crash Course on C	0.00			adne	Unassessed	Unassessed
DOI	0620357	Design of Interactive Systems	10.00	CS2-E	UI	hp	Closed: 1.5 hrs	
MSD	0620147	Modelling and System Design	10.00	CS2-A	SE	facp, rfp	Closed: 1.5 hrs	
CTS	0620133	Chips to Systems	10.00	CS2-C	EL	cb	Open: Aut/6/Weds - Aut/10/Weds	
TOC	0620132	Theory of Computation	10.00	CS2-D	TH	dp	Closed: 1.5 hrs	
OPS	0620131	Operating Systems	10.00	CS2-B	SY	nca	Closed: 1.5 hrs	

Table 16 BEng / BSc CS and MEng CSSE Second Year Modules Part A

18.4.4 BEng / BSc CS and MEng CSSE Second Year Modules Part B

Module	Code	Full Title	Credits	Clump	Strand	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00			ja	Unassessed	Unassessed
NDS	0630164	Networks and Distributed Systems	10.00	CS2-B	SY	ijb, nca	Closed: 1.5 hrs	
TSP	0620359	Team Systems Project	10.00	CS2-A	SE	tpk	Open: Sum/1/Weds - Sum/2/Fri	
RDQ	0620358	Relational Databases and Query Languages	10.00	CS2-A	SE	alcc	Closed: 1.5 hrs	
LSA	0620354	Lexical and Syntax Analysis of Programming Languages	10.00	CS2-B	SY	adne, skm	Closed: 1.5 hrs	
LPA	0620146	Logic Programming and Artificial Intelligence	20.00	CS2-D	AI	amf, dk	Closed: 3 hrs	
CGV	0620145	Computer Graphics and Visualisation	20.00	CS2-E	UI	agb, ip	Open: Sum/3/Weds - Sum/6/Weds	Closed: 1.5 hrs
MCP	0620143	Microcomputer Communications Project	20.00	CS2-C	EL	nep	Open: Spr/2/Mon - Sum/3/Weds	

Table 17 BEng / BSc CS and MEng CSSE Second Year Modules Part B

18.5. BEng / BSc CS and MEng CSSE Third Year Modules (3[XY]0)

See Section 10.3 for general information about choosing modules. The modules are listed in Tables 18 and 19.

18.5.1 Rules

- All students take a combination of modules worth 120 credits.
- CGO and FSS are compulsory for all students.
- CSW and RTS are compulsory for MEng (3Y0) students.
- PR3 is compulsory for BEng/BSc (3X0) students; it is forbidden to MEng (3Y0) students.
- CSW is forbidden to BEng/BSc (3X0) students. (BEng/BSc (3X0) students take the lectures, but not the assessment as part of PR3).
- Where a module is offered in both a student's second and third years (such as CGV) it may be taken in at most one of those years.

18.5.2 Notes

When choosing modules students should bear in mind the following points.

- Allocation of modules to strands is for information only. Students should consider if they wish to study a number of topics in depth; they are advised to do so if considering further study.

- Work load for BEng/BSc (3X0) students is balanced across the year if 30 credit's worth of taught modules are taken in Part A, and 50 in Part B.

- Work load for MEng (3Y0) students is balanced across the year if 40 credit's worth of taught modules are taken in Part A, and 20 in Part B.

- CGV and SDM open assessments run in parallel.

- CGO and CGV require knowledge of the C programming language. (This knowledge can be obtained from the unassessed module `Crash Course in C' (CCC), taught in Aut/1.)

18.5.3 BEng / BSc CS and MEng CSSE Third Year Modules Part A

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
CCC	0650690	Crash Course on C	0.00		adne	Unassessed	Unassessed
AGM	0630395	Algorithms for Graphical Models	10.00	AI	jc	Open: Spr/2/Mon - Spr/5/Weds	
CSW	0630390	Computer Science Writing	10.00	MI	hp	Open: Aut/4/Weds - Spr/3/Weds	Presentation: Spr/3 or 4/tbd
FUN	0630386	Functional Programming	10.00	PR	cr	Closed: 1.5 hrs	
CGO	0630384	Code Generation and Optimisation	10.00	SY	mw	Closed: 1.5 hrs	
FSS	0630380	Formal Specification of Systems	10.00	TH	jlj	Closed: 1.5 hrs	
PR3	0630181	Third Year Project	40.00		tut (sk)	Open: Aut/1/Mon - Spr/10/Tues	Presentation: Spr/10/Thurs - Fri
PAT	0630156	Pattern Recognition and Neural Networks	10.00	AR	rcw	Closed: 1.5 hrs	
EMS	0630108	Embedded Systems	10.00	MI	nca	Open: Aut/5/Weds - Aut/10/Weds	

Table 18 BEng / BSc CS and MEng CSSE Third Year Modules Part A

18.5.4 BEng / BSc CS and MEng CSSE Third Year Modules Part B

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00		ja	Unassessed	Unassessed
NSC	0640176	Non-Standard Computation	10.00	MI	ss	Closed: 1.5 hrs	
SDM	0630394	System Design Methodologies	10.00	MO	ck	Open: Sum/3/Weds - Sum/6/Weds	
PUP	0630393	Principles of Unconventional Programming	10.00	PR	amw	Closed: 1.5 hrs	
MLD	0630392	Metamodelling and Language Design	10.00	MO	facp, rfp	Closed: 1.5 hrs	
CVI	0630387	Computer Vision	20.00	AR	agb, erh, rcw	Closed: 3 hrs	
FPD	0630383	Formal Program Development	10.00	TH	sk	Closed: 1.5 hrs	
PR3	0630181	Third Year Project	40.00		tut (sk)	Open: Aut/1/Mon - Spr/10/Tues	Presentation: Spr/10/ Thurs - Fri
RTS	0630174	Real Time Systems and Programming Languages	20.00	SY	ab	Closed: 3 hrs	

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
CRY	0630109	Crypto Attacks and Countermeasures	10.00	MI	jac	Closed: 1.5 hrs	
AFG	0630106	Artificial Intelligence for Games	10.00	AI	dk	Closed: 1.5 hrs	
NLP	0630105	Natural Language Processing	10.00	AI	skm	Closed: 1.5 hrs	
CGV	0620145	Computer Graphics and Visualisation	20.00	UI	agb, ip	Open: Sum/3/Weds - Sum/6/Weds	Closed: 1.5 hrs

Table 19 BEng / BSc CS and MEng CSSE Third Year Modules

18.6. MEng CSSE Fourth Year Modules (4Y0)

The 4th year of the MEng contains three components totalling 120 credits:

- An individual project (PR5), worth 50 credits and a maximum mark of 250
- A group project (PRG) worth 20 credits and a maximum mark of 100
- Five taught modules, making up the remaining 50 credits

In contrast to the previous years of the course, 4th-year MEng modules are taught in several modes, some of which are more intensive than in previous years. It is also occasionally necessary for MEng year IV modules to be taught on Wednesday afternoons. Some modules are taught in the normal way. Some are taught in one-week slots, from 9.15 on Monday to lunchtime on Friday (which will include a Wednesday afternoon). Here the teaching takes the form of lectures interspersed with exercises, small group sessions and practicals and the entire day is filled. Others are taught over longer periods.

Within these blocks, the precise arrangement of teaching, practical sessions etc is up to the lecturer concerned: more details can be found in the module web pages. However, they will normally consist of a mixture of lectures, directed research and work on larger-scale exercises with some lecturer assistance. The assessment for these modules may involve a student presentation.

Since students take only five options, there are some weeks when there is no timetabled teaching. During those weeks, students work on individual projects and on the assessments: The majority of 4th-year options are examined by an open assessment only. Assessment hand-out and hand-in dates are given in the tables that follow.

To balance the workload across the course, students must choose:

- At least one module from the Autumn Term
- Exactly one of UTP and DEM (Summer Term)

It is also recommended that students take at least 20 credits of two distinct strands. (N.B. UI, MO and MI do not count as strands.)

As noted in section 10.3.2, where enrolment for a module is judged too small to make the module viable, it may be withdrawn. Students are notified of withdrawals as soon as possible. They must normally make alternative selections within the restrictions stated.

You must take a total of 120 credits. You must take PR5 (individual project worth 50 credits) and PRG (group project worth 20 credits). You must also take 50 credits of taught modules, including exactly one of PDV and UTP (to ensure all students have teaching in the summer term).Additionally, all students must take at least one option from those offered in the second half of the autumn term (to balance workload between part A and B).

It is recommended that students take at least 20 credits each of 2 distinct strands. (MI, UI and MO do not count as strands). Please note that a student who has previously taken ALP or CSO is not allowed to take COP.

EHW (taught by Electronics), is mutually exclusive with all SYA, TPS and SMT. If EHW is taken, SYA, TPS and SMT cannot be taken. If any of SYA, TPS or SMT is taken, EHW cannot be taken.

Students should note that some of the modules available as 4th year options also form part of the MSc Natural Computation. If you think you might wish to apply for the MSc Natural Computation after completing your MEng/MMath, you MUST discuss this with the Course Coordinator for the MSc Natural Computation **BEFORE** making your option selections for the 4th year, to ensure you will have sufficient options remaining within the MSc Natural Computation.

18.6.1 MEng CSSE Fourth Year Modules Part A

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
CCC	0650690	Crash Course on C	0.00		adne	Unassessed	Unassessed
EVO	0640534	Evolutionary Algorithms	10.00	SY	jac, ss	Open: Aut/9/Fri - Spr/3/Weds	
CRS	0640502	Critical Systems	10.00	SY	ab, ijb	Open: Aut/7/Fri - Spr/1/Weds	Presentation: Aut/10/tbd -
COP	0640178	Constraint Programming	10.00	AI	amf	Open: Aut/9/Fri - Spr/3/Weds	
QIP	0630391	Quantum Information Processing	10.00	MI	slb	Closed: 1.5 hrs	

Table 20 MEng CSSE Fourth Year Modules Part A

18.6.2 MEng CSSE Fourth Year Modules Part B

Module	Code	Full Title	Credits	Strand	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00		ja	Unassessed	Unassessed
PR5	0640506	Fourth Year Project	50.00		amw, sk	Open: Aut/6/Mon – Sum/3/Tues	Presentation: Sum/3 Thurs - Fri
EHW	0640532	Evolvable Hardware	10.00	MI	Elec (sok)	Open: Spr/5/Fri - Spr/10/Weds	
CBC	0640512	Computing with Biology and Chemistry	10.00	MI	sok	Open: Spr/9/Fri - Sum/3/Weds	
TPS	0640510	Topics in Privacy & Security	10.00	SY	jac, ss	Open: Spr/4/Fri - Spr/9/Weds	
SMT	0640493	Software Measurement and Testing	10.00	SE	T.B.C.	Open: Spr/5/Fri - Sum/1/Weds	
SYA	0640204	Systems Architectures	10.00	SY	ijb	Open: Spr/3/Fri - Spr/8/Weds	
HFE	0640185	Human Factors Engineering	10.00	UI	pcw	Open: Spr/7/Fri - Sum/1/Weds	
ALA	0640175	Adaptive and Learning Agents	10.00	AI	dlk	Open: Spr/8/Fri - Sum/1/Weds	
UTP	0640511	Unifying Theories of Programming	10.00	SE	jcpw	Open: Sum/4/Fri - Sum/6/Fri	
PDV	0640177	Protocol Design and Validation	10.00	MO	gl, jlj	Open Fri/4/Sum-Sum/6Fri	

Table 21 MEng CSSE Fourth Year Modules Part B

19. MSc in Software Engineering

19.1. Introduction

The MSc in Software Engineering (SWE) is a full-time one-year course designed to provide a grounding in the techniques of software engineering to those who will become the professionals at the leading edge of progress in the field. The MSc in Software Engineering is closely related to the part time MSc courses with similar forms of organization and some overlap of material.

The courses aim to provide participants with:

- A thorough grounding in, and practical experience of, the use of state-of-the-art techniques for design and development, verification and validation in their area;
- An understanding of the principles behind these techniques so that they can make sound judgements during the specification, design, development and deployment of systems;

There are three qualifications available in this course scheme: an MSc degree, a Diploma and a Certificate. The Certificate consists of a subset of the taught components while the MSc and Diploma contain both taught components and a project, which is examined by dissertation. The taught elements are taken over the first two terms of the academic year and, for the MSc and Diploma, consist of eight assessed modules: six of which are mandatory with the remaining two are chosen from the optional modules. The project is an individual project carried out in the department, which must be completed within the same academic year as the taught components of the course.

19.2. MSc Software Engineering Degree Regulations

The general regulations in this handbook apply, except when superseded by the specific points below.

19.2.1 Attendance

See section 2.5 for general regulations.

Students should note that they must attend all of the activities associated with modules that they take. For one-week modules not shared with part time MSc courses, the standard hours are:

- Mon, Tue, Thurs, Fri 0915 - 1800 with one hour breaks for lunch, Wed 0915 - 1315

For modules that are shared with part time MSc courses, the standard hours are:

- Monday to Thursday: 0915 - 1800 with one-hour breaks for lunch, Friday: 0915 - 1315

These hours may be varied by individual lecturers to suit module needs. For modules taught over more than one week, hours are as stated in the course timetable, available at the start of each term.

19.2.2 Assessments

See section 14 for general regulations.

Examination marks are determined in the first instance by the relevant Board of Examiners, which makes its recommendations to the Board of Studies in Computer Science. Refer to section 7.1.

Some modules on the MSc SWE course are taught full-time in York over the period of one week. The assessment associated with these modules takes approximately 35 hours and might comprise of, for example, a report, essay, case study or documented piece of software. Other modules are taught over a number of weeks and are assessed by closed or open examination.

1) Assessment marks

For performance on the taught elements to be deemed satisfactory, students must normally achieve an average of at least 50% across the assessed modules. In addition, students are required to demonstrate a good level of competence across modules. The pass mark for each module is 50%. Occasional failures of modules may be allowed, however, normally, only two failures will be allowed. Allowance of failures is at the discretion of the Board of Examiners.

There are 50 marks available for each single module assessment therefore 450 marks are available in total for the taught elements of the MSc and Diploma. The final mark for the course is the sum of the marks for the taught elements and the project. Resits are not normally allowed at MSc level.

2) Satisfactory progress

Progress of students is assessed at a meeting of the Board of Examiners normally held at the end of the summer term. Students are then advised on whether their performance is satisfactory. Failing students will be required to transfer or withdraw at this point.

For performance on the project to be deemed satisfactory, students must normally achieve a mark of at least 50%. To obtain an MSc or Diploma it is necessary for students pass both the taught and project components of the course.

3) Distinctions

For outstanding performance on the course, the Board of Examiners and Board of Studies may choose to recommend the award of an MSc with distinction. Such awards are entirely at the discretion of the University Senate, but the normal criteria for recommendation of a distinction are: to have passed all assessments at the 50+% level; to have an average mark of 70+%; to have a project mark of 70+%; and to have an average of 65+% in other assessments.

19.3. MSc in Software Engineering Degree Structure

See section 19.2 for details of specific regulations for this degree. For an explanation of "credits", see section 1.2.4. Modules marked "M" are Mandatory; those marked "O" are Optional.

19.3.1 MSc Software Engineering (MSc SWE)

Taught elements: six mandatory modules, and two other assessed modules chosen from the available options (90 credits); project: a six person-month project (90 credits including PPC).

19.3.2 Diploma Software Engineering (Dip SWE)

Taught elements: as for the MSc (90 credits); project: a project report of approximately six weeks' work (30 credits).

19.3.3 Certificate Software Engineering (Cert SWE)

Taught elements: PSM and four other assessed modules (60 credits).

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1	Assessment 2
CRT	0640509	Concurrent and Real Time Programming	10.00	M	ajw	Closed: 2 hrs	
OOD	0640508	Object-Oriented Design	10.00	M	rfp	Closed: 2 hrs	
FMS	0640507	Formal Specification	10.00	M	jcpw	Open: Aut/4/Fri - Aut/5/Fri	
PSM	0640200	Practical Software Management and Management of Software Engineering	20.00	M	jhp	Open: Spr/4/Mon - Spr/10/Weds	Open: Spr/1/Weds - Sum/3/Fri
RQE	0640180	Requirements Engineering	10.00	M	gl	Open: Aut/5/Fri - Aut/6/Fri	

Table 22 MSc in Software Engineering (MSc SWE) Part A
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1	Assessment 2
PPC	0650695	Project Preparation for MScIT and SWE	10.00	M	tut (sk)		
SUB		Setting up a Business	0.00	O	ja		
RSD	0640537	Reactive Systems Design	10.00	O	gl	Open: Spr/4/Fri - Spr/9/Weds	
SMT	0640493	Software Measurement and Testing	10.00	M	T.B.C.	Open: Spr/5/Fri - Sum/1/Weds	
SYA	0640204	Systems Architectures	10.00	O	ijb	Open: Spr/3/Fri - Spr/8/Weds	
HFE	0640185	Human Factors Engineering	10.00	O	pcw	Open: Spr/7/Fri - Sum/1/Weds	

Table 23 MSc in Software Engineering (MSc SWE) Part B
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1	Assessment 2
PR8	0640520	Final Project (SWE)	80.00	M	tut (sk)	Open: Sum/8/Mon - Vac/11/Fri	Open: Vac/12/Wed Thur - Vac/12/Wed Thur

Table 24 MSc in Software Engineering (MSc SWE) Summer Vacation

20. MSc in Information Technology

20.1. Introduction

The MSc in Information Technology is a one-year full time course for students with a good first degree in any subject except Computer Science (or similar). Since the course is full time, no provision can be made for students to complete any part of the course, in particular the project, away from the University.

The objectives of the course are:

- To educate students in the theories, technologies and practices that form the essential literacy of professionals in the IT industry
- To introduce students to significant areas of current research activity
- To prepare students for jobs in the fields of information systems development and software engineering

The main content of the course is designed to be directly applicable to those areas of work identified in aim 3 above. The central emphasis is on systems, software and programming, with supporting emphasis on the one hand on mathematics and computer hardware, and on the other hand on the design and analysis of human-computer interfaces for systems and the management of information systems.

The MSc IT course is organized in terms of modules (see section 1.2.3). Students must take all of the modules. Each module comprises a mixture of lectures, problem classes and practical classes plus a significant amount of personal study time. In addition, each student is a member of a tutorial group, which meets regularly with a supervisor. Examinations take place at the points indicated in the table in sections 20.3.2, 20.3.3 and 20.3.4.

20.2. MSc in Information Technology Degree Regulations

The general regulations in this handbook apply, except when superseded by the specific points below.

20.2.1 Attendance

The course begins on Aut/1/Mon with the Pre-term Course (PTC) and finishes on Vac/12/Fri. Students on the course are expected to be in attendance at York for the full 12 months except for the following periods: (i) the Christmas vacation; (ii) the Easter vacation. Students cannot expect to take holidays during the summer vacation period, though supervisors may be prepared (following the procedure laid down in section 2.5) to grant a short leave of absence of a few days to students in good academic standing who are making satisfactory progress with their projects. Students who are offered full-time employment conditional on their being able to start work before the end of the course must consult the course organizer (see section 6.3) at the earliest opportunity.

20.2.2 Assessments

The Board of Examiners has absolute discretion in its recommendations for the award of a degree / diploma. The final results from the course are available after the final external examiners' meeting. This takes place in the autumn term after the course has

ended in order to allow time for marking project reports and resolving any problems. Usually this meeting is around the middle of November.

The Board of Examiners and Board of Studies use the following criteria in determining the award of the degree.

- Students who achieve an average of at least 50% in the 120 credits of the taught part of the course, and at least 50% in the MSc project dissertation are recommended for the MSc.
- Students who achieve an average of at least 50% in 90 credits of the taught part of the course (excluding PPC and PTC), and at least 50% in the Diploma project dissertation are recommended for the Diploma.

The Boards also take into account failures in taught modules. The pass level for each module is 50%.

- For the award of the MSc, at most three failures (in 120 credits) are normally allowed.
- For the award of the Diploma, at most two failures (in 90 credits) are normally allowed.

There is no provision for resits on this course.

Transfer to the Diploma is compulsory for students who do not attain the appropriate MSc level in taught modules but who do achieve an appropriate level for a Diploma. For those who attain the required MSc level but wish to transfer to the Diploma, transfer is normally permitted up to the start of the summer vacation term.

For outstanding performance on the course, the boards may choose to recommend the award of MSc with distinction. The award is entirely at the discretion of the University Senate, but the normal criteria for making the recommendation are to have an overall average of at least 70%; a minimum of 70% on the project; a minimum of 65% on the taught modules and to have no module failures.

20.3. MSc in Information Technology Degree Structure

There are three basic forms of assessment associated with the course: closed assessments, open assessments and the project. Closed assessments are usually taken at the same time as other university examinations. Open assessments are set at various times throughout the year with varying amounts of time being allowed for each assessment. The project is undertaken during the summer term and summer vacation.

There are two qualifications available in the courses: an MSc degree and a Diploma. Each contains taught elements and a project to be completed.

MSc Taught elements: all modules in the following table (120 credits); project: a project preparation period PPC (10 credits) and a project report (50 credits).

Diploma taught elements: modules for total of 90 credits; a project preparation PPC (10 credits) and a diploma project report (20 credits).

20.3.1 MSc in Information Technology Pre-Term Modules

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
PTC	0650601	Pre-term Course	10.00	gb, lm		

Table 25 MSc in Information Technology Pre-Term Modules

20.3.2 MSc / Diploma in Information Technology Part A

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
APC	0650697	Advanced Programming Concepts	10.00	lm	Open: Aut/10/Mon – Aut/10/Fri	
CSA	0620330	Computer Systems Architecture	10.00	jhp	Closed: Exam Spr/1	
HCI	0620355	Human Computer Interaction	10.00	T.B.C.	Closed: Exam Spr/1	
MIP	0630391	Mathematics for Information Processing	10.00	ip	Closed: Exam Spr/1	

Table 26 MSc in Information Technology Part A
(Please see MTC website for feedback dates)

20.3.3 MSc in Information Technology Part B

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00	ja		
MSO	0650696	Management Systems and Organisations	10.00	ck	Closed: 1.5 hrs	
PPC	0650695	Project Preparation for MScIT and SWE	10.00	tut (sk)		
WED	0620356	Web Design	10.00	adne	Open: Spr/10/Weds - Sum/3/Weds	
OSI	0620349	Operating Systems for Information Processing	10.00	sm	Closed: 1.5 hrs	
DIS	0620348	Design of Information Systems	10.00	skm	Closed: 1.5 hrs	
NWC	0620347	Networks and Communications	10.00	amw	Closed: 1.5 hrs	
SWI	0610320	Software Engineering for IT/IP	20.00	lm	Open: Sum/1/Weds - Sum/4/Weds	Closed: 1.5 hrs

Table 27 MSc in Information Technology Part B
(Please see MTC website for feedback dates)

20.3.4 MSc in Information Technology Summer Vacation

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2
PRD	0650694	IT Diploma Project	30.00	tut (sk)	Open: Vac/1/Tues - Vac/11/Fri	Open: Vac/12/tbd - Vac/12/
PRC	0650693	MScIT Project	50.00	tut (sk/amw)	Open: Vac/1/Mon - Vac/11/Fri	Open: Vac/12/Weds - Vac/12/Weds

Table 28 MSc in Information Technology Vacation

21. MSc in Natural Computation

21.1. Introduction

The MSc in Natural Computation is a one-year course, intended for students with a good first degree in Computer Science or a related discipline with an appropriate mathematical basis. It aims to provide participants with a thorough grounding in the use of advanced techniques of natural computation - broadening ideas about computation to include ideas from mathematics, physics, electronics and biology. At the discretion of the admissions tutor, appropriate recent experience may also be considered for applicants who do not have an appropriate Computer Science degree.

The objectives of the course are:

- To provide a broad education in areas of natural computation and associated technologies, and
- To provide more specialised knowledge in natural computation technology via the project.

The MSc is intended for graduates who wish to develop knowledge and skills in this area before undertaking industrial work or academic study. In particular, this MSc is intended to provide a route into a PhD or research in this rapidly expanding field.

21.2. MSc in Natural Computation Degree Regulations

The general regulations in this handbook apply, except when superseded by the specific points below.

21.2.1 Attendance

The course is offered as a full-time MSc, running for 12 months from October, the start of the academic year. Students on the course are expected to be in attendance at York for the full 12 months except for short periods in: (i) the Christmas vacation; (ii) the Easter vacation.

Students cannot expect to take holidays during the summer project work period, though supervisors may be prepared (following the procedure laid down in section 2.5.1) to grant a short leave of absence of a few days to students in good academic standing who are making satisfactory progress with their projects.

Students who are offered full-time employment conditional on their being able to start work before the end of the course must consult the Course Organizer (see section 6.3) at the earliest opportunity. Since the course is full time, no provision can be made for students to complete any part of the course, in particular the project, away from the University.

21.2.2 Assessments

The MSc NC course consists mainly of open examinations, with some closed examinations. Examination marks are determined in the first instance by the relevant Board of Examiners, which makes its recommendations to the Board of Studies in Computer Science. Refer to section 7.1.

For performance on the taught elements to be deemed satisfactory, the student must normally achieve an average of at least 50% for the assessed modules. In addition, the student will be required to demonstrate a good level of competence across modules. 50% is the pass mark for each module. For award of the MSc, at most two module failures will normally be allowed. Allowance of failures is at the discretion of the Board of Examiners.

For performance on the project to be deemed satisfactory, the student must normally achieve a mark of at least 50%. To obtain an MSc the student must pass both the taught and project phases.

There are 50 marks available for each single module assessment and therefore 450 marks in total are available for the taught elements of the MSc. There are 450 marks available for the project PRN. The final mark for the course is the sum of the marks for the taught elements and the project.

Resits are not allowed at MSc level.

Progress of students is assessed at a meeting of the Board of Examiners during the summer term. Students are then advised on whether their performance is satisfactory. Failing students will be required to withdraw at this point.

For outstanding performance on the course, the Board of Examiners and Board of Studies may choose to recommend the award of an MSc with distinction. Such awards are entirely at the discretion of the University Senate, but the normal criteria for recommendation of a distinction are: to have passed all module assessments (50% or more in each assessment); to have an average mark greater than 70%; to have a project mark greater than 70%; and to have an average greater than 65% in other assessments.

21.3. MSc in Natural Computation Degree Structure

The MSc NC course is available full-time only. The first half of the course is taken up by taught modules, taken over the first two terms of the academic year. Each module comprises a mixture of lectures, problem classes and practical classes plus a significant amount of personal study time. The Computer Science Writing module is mandatory. In the latter half, students undertake an individual research project, under the supervision of a member of staff. The project must be completed within the academic year.

In addition, each student is a member of a tutorial group that meets regularly with a supervisor. The project supervisor takes over the role of general supervisor when the project phase begins.

Taught elements: mandatory module CSW and eight modules chosen from the available options, subject to prerequisite constraints (90 credits in total); project: a six person-month project (90 credits).

Module	Code	Full Title	Credits	Lecturer	Assessment 1	Assessment 2	Assessment 3
CBA	0640531	Cooperative Bio-inspired Algorithms	10	jt	Open: Aut/5/Fri – Aut/10/Weds		
CSW	0630390	Computer Science Writing	10	hlp	Open: Aut/4/Wed-Spr/3/Wed		
DSA	0580029	Dynamical Systems and Applications	10	Maths	Closed: 1.5 hrs	Open: coursework	Open: Mini-project
EVO	0640534	Evolutionary Algorithms	10	jac, ss	Open: Aut/9/Fri – Spr/3/Weds		
NEU	0640535	Neural Computing	10	sok	Open: Aut/9/Fri - Spr/3/Weds		
QIP	0630391	Quantum Information Processing	10	slb	Closed: 1.5 hours		

Table 29 MSc in Natural Computation (MSc NC) Part A
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Lecturer	Assessment 1
ALA	0640175	Adaptive and Learning Agents	10	dlk	Open: Spr/8/Fri - Sum/1/Weds
CBC	0640512	Computing with Biology and Chemistry	10	sok	Open: Spr/9/Fri - Sum/3/Weds
EHW	0640532	Evolvable Hardware	10	Electronics	Open: Spr/5/Fri - Spr/10/Weds
EME	0640533	Emergence	10	ss, facp	Open: Spr/10/Fri - Sum/3/Weds
SCB	0281202	Simulating Complex Biosystems	10	Biology, ss	Open: Spr/5/Mon - Spr/7/Mon

Table 30 MSc in Natural Computation (MSc NC) Part B
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Lecturer	Assessment 1
PRN	0640536	MSc in NC Project	90	supervisors	Project: Sum/1/Mon - Vac/11/Fri Project Presentations Vac/12/Wed/Thur

Table 31 MSc in Natural Computation (MSc NC) summer

22. MRes in Bioinformatics

The MRes in Bioinformatics is a one-year, full-time course, run jointly by the Departments of Biology, Chemistry and Computer Science. Students will normally be expected to have a first or upper second class honours degree in any Biological Science-related subject, although the course is also open to students with a degree in Computer Science, Mathematics or Statistics who can demonstrate a commitment to the Biosciences.

The Computer Science Department provides the following teaching:

Module	Code	Full Title	Credits	Lecturer
IML	0690502	Introduction to Machine Learning	10.00	jc, dk, sok
IPP	0680102	Introduction to Programming (Python)	15.00	jc
JBC	0281203	Java and Biocomputing	10.00	Bio (gl, jhp)

Students are required to undertake three research projects, taking a total of 34 weeks, two at York and one on external placement usually in industry or a research institute. Project 1 (autumn term) is a 5-week project in the Biology Department in the areas of Molecular Sequences and Genomics. Project 2 (spring term) is for 10 weeks and can be chosen from projects offered in Biology, Chemistry and Computer Science. Project 3 (summer term) is for 14 weeks and is external.

The course receives 10 BBSRC (Biotechnical and Biological Sciences Research Council) studentships.

The course is administered by the Bioinformatics Executive Committee, which is responsible to the Combined Board of Studies. The members of the Executive Committee are listed in section 7.3.

Further information can be found at:

http://www.york.ac.uk/depts/biol/gsp/masters/bioinf/binfwelc.htm

23. Part time MSc courses

23.1. Introduction

The MSc in Safety Critical Systems Engineering (MSc SCSE), the Certificate in System Safety Engineering (Cert SSE) and the MSc in Gas Turbine Control (MSc GTC) courses are available as part-time courses only. Each module in these degrees qualifies as a Continuing Professional Development (CPD) activity for the Institution of Engineering and Technology and the British Computer Society.

There are three qualifications available through these part time MSc courses: an MSc degree, a Diploma and a Certificate. The Certificate consists of a subset of the taught components while the MSc and Diploma contain both taught components and a project, which is examined by dissertation.

23.2. Part time MSc Degree Regulations

The general regulations in this handbook apply, except when superseded by the specific points below. In particular, the disciplinary procedure in section 2.5.2 of this handbook also applies to all part time MSc students except that the student's supervisor initiates them.

23.2.1 Attendance

See section 2.5 for general regulations.

Each module is taught full-time at York over the period of a week. Attendance by students is **compulsory** for all activities associated with the module during that week. (In addition, students are expected to spend about 30 hours on background reading and about 35 hours on the assessment.)

The standard hours for single week course modules are:

- Monday to Thursday: 0915 - 1800 with one-hour breaks for lunch, Friday: 0915 - 1315

The standard hours for one-week modules that are shared with the MSc SWE are:

- Mon, Tue, Thurs, Fri 0915 - 1800 with one hour breaks for lunch, Wed 0915 - 1315

These hours may be varied by individual lecturers to suit module needs.

23.2.2 Assessments

See section 14 for general regulations.

There are 50 marks available for each single module assessment. In total, there are 450 marks available for the taught elements of the MSc / Diploma SCSE. For the MSc / Diploma GTC 600 marks in total are available.

23.2.3 Remote Submission

An examination number must be written on the front of a submission and each answer page. Students must not identify themselves in any other way.

To submit an assessment using the postal system it should be posted before 12 noon on the day of the submission deadline. Proof of this posting must be provided. One acceptable form of proof is to fax a Proof of Posting certificate to the Department fax, 01904 432767, before the deadline. The open assessment and an accompanying remote submission form should be posted to:

Open Assessment Submission
Dept of Computer Science
University of York
Heslington, York, YO10 5DD, UK

To submit an assessment using the electronic procedure it should be submitted before 12 noon on the day of the submission deadline. Proof of this electronic submission must be provided by printing a copy of the receipt, which is issued on submission of the assessment. It is also recommend that an md5 checksum is printed out for your records to verify submission. It is the students' responsibility to keep proof of submission. All electronic submissions should be submitted via the Departments web page: http://www.cs.york.ac.uk/submit/openassess.html

All electronic submissions must be submitted as pdf's or in postscript format. In the event of a failure of the electronic submission system, all faults should be reported to support@cs.york.ac.uk. The Department of Computer Science cannot accept responsibility for any external systems failing which result in electronic submissions not being submitted by the published deadline. We advise that large files should not be submitted using a modem connection. If multiple files are submitted these should be archived in to one zip file to prevent multiple submissions.

1) Assessment marks

All assessments for the part-time MSc courses are open assessments. For performance on the taught elements to be deemed satisfactory, students must normally achieve an average of at least 50% across the assessed modules. In addition, students are required to demonstrate a good level of competence in each module. The pass mark for each module is 50%.

Occasional failures of modules may be allowed. The aim of these courses is to produce competent engineers, and this fact will be taken into account when deciding whether to condone failures. For the Certificate, only one failure of a module will normally be allowed. For the MSc and Diploma, at most two failures will normally be allowed. Allowance of failures is at the discretion of the Board of Examiners.

The final mark for the course is the sum of the marks for the taught elements and the project. Resits are not normally allowed at MSc level.

2) Satisfactory progress

Progress of students is assessed at a meeting of the Board of Examiners normally held during the summer term. Students are then advised on whether their performance is satisfactory. Failing students will be required to transfer or withdraw at this point.

For performance on the project to be deemed satisfactory, the student must normally achieve a mark of at least 50%. To obtain an MSc or Diploma the student must pass both the taught and project phases.

3) Distinctions

For outstanding performance on the course, the Board of Examiners and Board of Studies may choose to recommend the award of an MSc with distinction. Such awards are entirely at the discretion of the University Senate, but the normal criteria for recommendation of a distinction are: to have passed all assessments at the 50+% level; to have an average mark of 70+%; to have a project mark of 70+%; and to have an average of 65+% in other assessments.

4) Extenuating Circumstances and Requests for Extensions

If students are unable to fully complete an assessment they should submit the partly completed assessment on the given hand-in date and submit an extenuating circumstances form outlining why the student was unable to complete the assessment. Extenuating Circumstances forms can be obtained from:

http://www.cs.york.ac.uk/bos/Forms/ExtenuatingCircsForm.html

In very exceptional circumstances, students may request an extension to the hand-in date for the submission of an open assessment. This will be granted only if there is good reason on the part of the student and it is practical for the assessment markers. Requests should be submitted to the lecturer (module owner) on the Extension Request Form, which can be obtained at:

http://www.cs.york.ac.uk/MSc/SCSE/local/extensionrequest.doc

The lecturer will consult the student's supervisor and respond.

Full supporting documentation should be supplied; in particular, if pressure of work is the problem, an employer's letter should be attached that confirms that this was a problem and shows commitment to giving the student sufficient time to complete the assessment by the new date. Students cannot assume that the extension has been granted until they have received a response.

23.2.4 Part time MSc projects

See section 13 for general regulations.

1) The role of the Industrial Supervisor

Any project that is involved with industry has an industrial supervisor nominated by the company. The industrial supervisor works with the academic supervisor and the student throughout the project period to ensure the success of the project. The Industrial Supervisor acts as mentor to the student within the company, providing technical advice, for example, as necessary. Together with the student's line manager, the industrial supervisor is responsible for ensuring that the student has both sufficient time and appropriate facilities to undertake the project. The industrial supervisor meets regularly with the student to assess progress.

2) Project work for part-time MSc students

Supervisions between part-timers and supervisors may take place either at the University or at the student's workplace, as appropriate. Students are required to provide a written summary of progress to their supervisor on the first Monday of each month during their project. It may be posted, faxed or e-mailed to the supervisor. In addition, MSc SCSE students should produce a draft literature survey at 4 months, and a draft statement of progress at 9 months, including an outline of the final dissertation.

For part-time MSc SCSE students working on their projects there will be three Project Weeks during the 18-month project period. Students will be expected to be in York during the following weeks:

- Sum/12 Literature review
- Spr/1 Mid-project report
- Sum/12 Final write-up

The purpose of these weeks is to help students meet these important milestones. There will be a minimal formal program during the week:

- Tutorial sessions with supervisors and other staff
- Meetings with other students for mutual support
- One or more formal discussions/seminars, if requested.

Otherwise, it is intended that students should make progress with the project in an undisturbed atmosphere.

Project weeks are compulsory. Project weeks may be re-scheduled in individual cases, by mutual agreement between student and supervisor.

3) Part time MSc project submission

Students are required to submit two copies of the completed project report to the Computer Science Departmental Office (CS109). In addition, an electronic version of the project report and documentation are to be submitted in PDF format via the electronic project submission web page. This can be done up to 24 hours after the published paper submission deadline. See Table 33 MSc Safety Critical Systems Engineering (MSc SCSE) Part B for project deadline.

All students on MSc courses are required to give a presentation on their project. For students who registered before March 2004, this presentation is unassessed. For all students who register after March 2004, the presentation is assessed.

4) Diploma Project submission

Students are required to submit two copies of the completed Diploma project report to the General Office of the Department of Computer Science (CS109) at a date to be decided by their supervisor in consultation with them. For full time diploma students, the latest date for submission is that corresponding to the date of the MSc project submission.

23.2.5 Supervision for part time MSc students

See section 2.4 for general regulations.

Each student is allocated a personal supervisor in the Department who meets the student regularly to discuss progress during both the teaching and project phases. In addition, industrial supervisors are responsible for the day-to-day supervision of projects that are undertaken in industry.

Students should arrange to see their supervisors during the week of every module that they are taking. Students or supervisors may request additional meetings, to be arranged by mutual agreement.

Project supervisor takes over the role of general supervisor when the project phase begins.

23.3. Notes for MSc in Safety Critical Systems Engineering

The MSc SCSE emphasizes the issues involved in the construction of safety critical systems incorporating software, while Cert SSE, offered only as a Certificate course, takes a systems approach, emphasizing the principles and techniques of hazard and safety assessment for a broad range of technologies.

The courses are normally taken over three years, but there is a two-year option that may be applied for by the student and approved by the MTC. In both cases, the taught elements are completed over two academic years. In the case of the 3-year course, the project is started after the completion of the taught elements and is completed in the third academic year. In the case of the 2-year course, the project is started during the first academic year, undertaken concurrently with the taught elements and completed during the second academic year. The part-time Certificate course is taken over two academic years.

The decision to attempt to complete the MSc / Diploma in two years is made at the project allocation stage in the first year. It is at the student's own risk; it increases the pressure of work and the resulting self-induced increase in workload will not normally be allowed for in any requests for extensions. Students who take the two-year option may normally only undertake projects on topics for which they have already undertaken and passed modules. The project is submitted at the end of the second year.

In exceptional circumstances, a part-time student may delay taking one optional module until the third year. Students who wish to do this must present a case in writing to the MTC.

The course organizer may approve requests by suitably experienced part-time students, to substitute an additional optional module for the mandatory foundation module (FSE). It will still be necessary to attend some sessions of the mandatory foundation module, which are concerned with orientation to the course as a whole.

Note that the fee for the course does not depend on the time taken to complete it. For students electing to take it in two years, the balance will be billed at the start of the second year.

23.4. MSc in Safety Critical Systems Engineering Degree Structure

See section 23.2 for details of specific regulations for this degree. For an explanation of "credits", see section 1.2.4. Modules marked "M" are Mandatory; those marked "O" are Optional.

23.4.1 MSc Safety Critical Systems Engineering (MSc SCSE)

Taught elements: five mandatory modules, and four other assessed modules chosen from the available options (90 credits); project: a six person-month project (90 credits).

23.4.2 Diploma Safety Critical Systems Engineering (Dip SCSE)

Taught elements: as for the MSc (90 credits); project: a project report of approximately six weeks' work (30 credits).

23.4.3 Certificate Safety Critical Systems Engineering (Cert SCSE)

Taught elements: five mandatory modules and one other assessed modules (60 credits).

23.4.4 Certificate in System Safety Engineering (Cert SSE)

Taught elements: five mandatory modules and one other assessed modules (60 credits).

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1	Assessment 2
SWR	0640529	Software Requirements and Architectures	10.00	O	kma (katrina)	Open: Aut/4/Fri - Aut/11/Weds	
GS1	0640513	Systems Engineering 1	10.00	O	jam	Open: Aut/2/Fri - Aut/7/Weds	
FSE	0640504	Foundations of System Safety Engineering	10.00	M	sds	Open: Aut/1/Fri - Aut/6/Weds	
SSA	0640209	System Safety Assessment	10.00	M	mn	Open: Aut/10/Fri - Spr/5/Weds	
HRA	0640207	Hazard and Risk Assessment	10.00	M	djp	Open: Aut/6/Fri - Spr/1/Weds	

Table 32 MSc Safety Critical Systems Engineering (MSc SCSE) Part A
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00	O	ja		
SIP	0640528	Software Implementation	10.00	O	dma (diyaa)	Open: Aut/8/Fri - Spr/2/Weds	
SAE	0640527	Sensors and Effectors	10.00	O	djp	Open: Sum/1/Fri - Sum/8/Weds	
ESD	0640524	Electronic System Design	10.00	O	mjf	Open: Spr/10/Fri - Sum/3/Weds	
GS2	0640515	Systems Engineering 2	10.00	O	rja	Open: Aut/9/Fri - Spr/4/Weds	
TPS	0640510	Topics in Privacy & Security	10.00	O	jac, ss	Open: Spr/4/Fri - Spr/9/Weds	
SMT	0640493	Software Measurement and Testing	10.00	O	sm	Open: Spr/5/Fri - Sum/1/Weds	
HRM	0640208	Hazard and Risk Management	10.00	M	tpk	Open: Spr/6/Fri - Sum/1/Weds	
CAS	0640205	Computers and Software	10.00	O	T.B.C.	Open: Sum/2/Fri - Sum/9/Weds	
SCM	0640203	Safety-Critical Project Management	10.00	M	sds	Open: Spr/9/Fri - Sum/2/Weds	
OMM	0640190	Operation Management and Maintenance	10.00	O	rja	Open: Sum/5/Fri - Vac/2/Weds	
HFE	0640185	Human Factors Engineering	10.00	O	pcw	Open: Spr/7/Fri - Sum/1/Weds	

Table 33 MSc Safety Critical Systems Engineering (MSc SCSE) Part B
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1	Assessment 2
PR9	0640521	Final Project (SCSE)	90.00	M	tut (sk)	Open: Aut/2/Mon - Vac/11/Fri	Open: Vac/12/Wed Thur - Vac/12/Wed Thur
PRB	0640189	Project for Diploma SCSE	30.00	M	tut (sk)	Open: Fri/Aut/2 - Wed Thur/Vac/11	Open: Vac/12/Wed Thur - Vac/12/Wed Thur

Table 34 MSc Safety Critical Systems Engineering (MSc SCSE) Vacation
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1	Assessment 2
GS1	0640513	Systems Engineering 1	10.00	O	jam	Open: Aut/2/Fri - Aut/7/Weds	
FSE	0640504	Foundations of System Safety Engineering	10.00	M	sds	Open: Aut/1/Fri - Aut/6/Weds	
SSA	0640209	System Safety Assessment	10.00	M	mn	Open: Aut/10/Fri - Spr/5/Weds	
HRA	0640207	Hazard and Risk Assessment	10.00	M	djp	Open: Aut/6/Fri - Spr/1/Weds	

Table 35 Certificate in System Safety Engineering (Cert SSE) Part A
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1	Assessment 2
SUB		Setting up a Business	0.00	O	ja		
HRM	0640208	Hazard and Risk Management	10.00	M	tpk	Open: Spr/6/Fri - Sum/1/Weds	
CAS	0640205	Computers and Software	10.00	O	T.B.C.	Open: Sum/2/Fri - Sum/9/Weds	
SCM	0640203	Safety-Critical Project Management	10.00	M	sds	Open: Spr/9/Fri - Sum/2/Weds	
OMM	0640190	Operation Management and Maintenance	10.00	O	rja	Open: Sum/5/Fri - Vac/2/Weds	
HFE	0640185	Human Factors Engineering	10.00	O	T.B.C.	Open: Spr/7/Fri - Sum/1/Weds	

Table 36 Certificate in System Safety Engineering (Cert SSE) Part B
(Please see MTC website for feedback dates)

23.5. Notes for MSc in Gas Turbine Control Degree Students

The MSc GTC course aims to provide participants with a thorough grounding and practical experience in the use of state-of-the-art techniques for development of embedded (gas turbine) control systems; together with an understanding of the principles behind these techniques so that they can make sound engineering judgments during the design and deployment of such a system.

This course is delivered at the Department of Computer Science, University of York and at the Department of Automatic Control and Systems Engineering, University of Sheffield.

The course is available part-time only. The modules required to attain a certificate (Cert GTC) are taken in the first year, modules to attain a diploma (Dip GTC) are undertaken in the second year and a project is undertaken in the third year to attain the MSc GTC.

Students must normally complete the taught elements of the MSc / Diploma course in two years. In exceptional circumstances, a part-time student may delay taking one optional module until the third year. Students who wish to do this must present a case in writing to the MTC.

MSc GTC students are able to submit assessments to the Department of Computer Science, University of York in electronic format. This is available for assessments for York based modules only. Assessments, which are submitted electronically, should be submitted before 12 noon on the day of the submission deadline. Students must be able to provide proof of submission, by printing a copy of the receipt that is issued on submission of the assessment. We also recommend that you print an md5 checksum for your records to verify your submission.

23.6. MSc in Gas Turbine Control Degree Structure

See section 23.2.5 for details of specific regulations for this degree. For an explanation of "credits", see section 1.2.4. Modules marked "M" are Mandatory; those marked "O" are Optional.

23.6.1 MSc Gas Turbine Control (MSc GTC)

Taught elements: six mandatory modules and six other assessed modules chosen from the available options (120 credits); project: a four person-month project (60 credits).

23.6.2 Diploma Gas Turbine Control (Dip GTC)

Taught elements: as for the MSc (120 credits); no project.

23.6.3 Certificate Gas Turbine Control (Cert GTC)

Taught elements: six mandatory modules (60 credits).

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1
SUB		Setting up a Business	0.00	O	ja	
GS1	0640513	Systems Engineering 1	10.00	M	jam	Open: Aut/2/Fri – Aut/7/Wed

Table 37 MSc Gas Turbine Control (MSc GTC) Year 1, Part A
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1
SUB		Setting up a Business	0.00	O	ja	
GS2	0640515	Systems Engineering 2	10.00	M	rja	Open: Aut/9/Fri – Spr/4/Weds
ICT	0640514	Introduction to Control Theory	10.00	M	Shef (mn)	Open: Spr/2/Fri - Spr/9/Weds
SSG	0640516	Introduction to System Safety	10.00	M	mn	Open: Spr/8/Fri - Sum/1/Weds
CAS	0640522	Computers and Software	10.00	M	djp	Open: Sum/2/Fri - Sum/9/Weds
CAG	0640517	Control Architectures	10.00	M	Shef (mn)	Open: Sum/8/Fri – Vac/4/Wed

Table 38 MSc Gas Turbine Control (MSc GTC) Year 1, Part B
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1
SUB		Setting up a Business	0.00	O	ja	
ACT	0640523	Advanced Control Theory	10.00	O	Shef (mn)	Open: Aut/0/Fri – Aut/7/Weds
SWR	0640529	Software Requirements and Architectures	10.00	O	T.B.C.	Open: Aut/4/Fri - Aut/11/Weds

Table 39 MSc Gas Turbine Control (MSc GTC) Year 2, Part A
(Please see MTC website for feedback dates)

Module	Code	Full Title	Credits	Status	Lecturer	Assessment 1
SUB		Setting up a Business	0.00	O	ja	
ACT	0640523	Advanced Control Theory	10.00	O	Shef (mn)	Open: Aut/0/Fri – Aut/7/Weds
SWR	0640529	Software Requirements and Architectures	10.00	O	T.B.C.	Open: Aut/4/Fri - Aut/11/Weds
SIP	0640528	Software Implementation	10.00	O	T.B.C.	Open: Aut/8/Fri - Spr/2/Weds
ESE	0640525	Electrical Systems and EMC	10.00	O	Shef (mn)	Open: Aut/10/Fri – Spr/5/Wed
ACS	0640522	Aircraft Systems	10.00	O	Shef (mn)	Open: Spr/3/Fri – Spr/10/Wed
SMT	0640493	Software Measurement and Testing	10.00	O	T.B.C.	Open: Spr/5/Fri – Sum/1/Wed
SCM	0640203	Safety Critical Projects Management	10.00	O	sds	Open: Spr/9/Fri - Sum/2/Weds
ESD	0640524	Electronic Systems Design	10.00	O	mjf	Open: Spr/10/Fri – Sum/3/Weds
SAE	0640527	Sensors and Effectors	10.00	O	djp	Open: Sum/1/Fri - Sum/8/Weds
HCM	0640526	Health Care Monitoring	10.00	O	Shef (mn)	Open: Sum/10/Fri – Vac/7/Weds

Table 40 MSc Gas Turbine Control (MSc GTC) Year 2, Part B
(Please see MTC website for feedback dates)

Building Codes

The letter(s) preceding the oblique stroke indicates the building as follows:

A/	Alcuin College
A/EC	Economics Department
A/EW	Seebohm Rowntree East Wing
A/MS	Hull/York Medical School
A/NC	National Science Learning Centre
A/RC	Alcuin Research Centre
A/TB	Seebohm Rowntree
AM/	Ambrose Street
B/	Biology
BH/	University Boathouse
BK/	Borthwick Institute for Archives
C/	Chemistry
CB/	Central Boiler House
CN/	Constantine House
CP/	Cricket Pavilion
CS/	Computer Science
CT/	Catherine House / Jepson House
D/	Derwent College
DB/	Drama Barn
E/	Lyons Concert Hall / Music Dept.
EN/	Eden's Court
EX/	Grounds and External Works
F/	Central Hall
FD/	65/67 Fulford Road
FR/	212/214 Fulford Road
FX/	Fairfax House
G/	Goodricke College
G/AM	Roger Kirk Centre
GE/	Genesis
GZ/	Gazebo
H/	Heslington Hall
HC/	University Health Care
HF/	Home Farm
HO/	Holgate Hall
HRL/	Raymond Burton Library
HX/	Halifax College
I/	Sally Baldwin Buildings
IN/	Innovation Centre
J/	James College
K/	King's Manor
L/	Langwith College
MB/	Estates Services – Maintenance Building (Joiners)
MG/	Estates Services – Grounds Depot
MP/	Music Practice Rooms (Langwith)
MRC/	Music Research Centre
MS/	Main Street
MSD/	Market Square Development
N/	New Building and 5/5A Main Street
NS/	York Campus Nursery
O/	Sports Centre
P/	Physics/Electronics
P/A	Pavilion
PO/	Physics Observatory
PS/	Psychology
PV/	Provost Houses
R/	J B Morrell Library
S/	Stables (Heslington Lane)
SC/	Student Centre
SL/	St Lawrence Court
SP/	Spring Lane Housing
SQ/	Squash Courts (Derwent)
SR/	Scarcroft Road
V/	Vanbrugh College
VC/	Vice-Chancellor's House
W/	Wentworth College
WA/	50-54 Walmgate
WG/	Walled Garden
WS/	Workshop & Stores
X/B	Computing Service
X/C	Security Centre
X/D	Environment
X/E	Student Administration
Z/	Language Centre
Z/A	Careers