

University of Edinburgh
School of Informatics



CS0004 Computer Programming Skills and Concepts 1
U01510 Computer Programming for Music Technology

Course Guide 2006-2007

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Large print versions of all course documents are available on request.

1 Course Outline

Course Organiser: John Butler, cp1co@inf.ed.ac.uk, JCMB room 2504.
Informatics Teaching Office: ito@inf.ed.ac.uk, Appleton Tower 5.03; JCMB Room 1502
Lectures: 2pm Mondays, William Robertson Building Room G.01
11:10am Tuesdays William Robertson Building room G.01
11:10 am Thursdays David Hume Tower room 7.01
URL: <http://www.inf.ed.ac.uk/teaching/courses/cp1>

Different arrangements will apply for Thursday of week 1 and Tuesday of week 2 when there will be introductory lab sessions in Appleton Tower Level 5.

This course is intended for students who wish to develop their programming skills. It can be taken by students with little or no prior experience of programming; however, most students will have some previous computing experience.

The material covers an introduction to the basic components of a modern computer system, the working environment provided by such a system including some simple utilities provided by the operating system (*Linux*, *RedHat*), the principles of simple program design, construction and testing and their exploitation in the context of the simpler features of the ANSI C programming language. A brief syllabus follows with more detail in Section 7.

- Introduction. The scope of Computer Science. Elements of a modern computer system and computing environment. UNIX, its file system and programming utilities.
- Program design and development. Specification, problem decomposition. Reasoning about and testing programs.
- Programming in ANSI C. Expressions, types, variables, assignment, conditionals, iteration, arrays, strings, files, functions.
- Structured programming. Functional and procedural abstraction, headers and libraries, names and scope.

Details of the course can be found later in this guide and on-line¹.

Note: A large part of the course focuses on the C programming language; almost all the practical work involves programming in C.

2 The Learning Experience

University courses provide students with a range of materials and facilities to encourage and enhance learning. For CP1 these are:

¹ <http://www.inf.ed.ac.uk/teaching/courses/cp1>

- lectures
- tutorials
- practical exercises
- private study and background reading

As your course progresses you will acquire a variety of study skills, of which one of the most important is time management. Try to divide your time sensibly and productively between the various activities discussed below. Schedule your practical work realistically, allowing time for understanding and thought as well as work at the machines. Get into the habit of referring to textbooks and notes when you are in difficulty.

Although lecturers and their styles vary greatly, it remains true that the *lecture* is, for many students, probably not the most active learning environment. Instead, a good lecture should add a sense of perspective to the material covered, while going into enough detail to illuminate and encourage further personal study. Most lectures in CP1 will be supported by summarised lecture notes or covered by the textbook. Notes reduce the need for note taking but should not be assumed to be complete in themselves. You may find it helpful to highlight and annotate the handouts, and perhaps to take your own lecture sketches.

Tutorials involve an hour long weekly meeting between a group of around 12 students and a tutor who will be a member of staff or perhaps a postgraduate student. They allow more interaction and discussion than is possible in a large lecture theatre. Tutorial discussion may focus on the current practical exercise, material related to current lectures or indeed any topic which may arise. In particular, tutorials represent an excellent opportunity to iron out difficulties and misconceptions, so please be prepared to participate and take full advantage. Your tutor will also be responsible for assessment of your practical work. Attendance at tutorials and lectures is expected (although not compulsory). Your tutor will keep a record of attendance at tutorials. This is simply to make us aware of students who may be having difficulties with their work, and to offer help before the problem is compounded.

Practical exercises offer the chance to put the material discussed in lectures and tutorials into practice, and to develop a range of useful skills. Along with examinations, they are an important part of the formal assessment procedure. Typically, a practical exercise will be distributed at a Monday lecture for completion in two or three weeks. Your tutor will attempt to assess and comment upon your work in time for the following week's tutorial, and certainly by the tutorial following that. You can obtain help and advice regarding your practical work from your tutor, from the Lab demonstrators and from your colleagues.

You will need to reserve time for *private study* and organise your weekly routine to allow for this. This amounts to much more than the exam revision with which you are no doubt painfully familiar. In CP1, private study might include reading through and reflecting upon lecture notes, reading material in the recommended texts, writing a few trial programs, and just thinking critically about the course material. A university is a place for thinking.

Tutorial groups

Tutorial groups will be held from week 3 onwards. Available times for CP1 are: **Tue 3 - 4** (Forrest Hill room A23); **Wed 11 – 12** (FH room A23); **Thu 9 – 10** (Appleton Tower mezzanine room 2A), **Thu 10 – 11** (FH room A23). We will try and give you your first preference of time but this may not always be possible as we need to balance group sizes.

3 Assessment

The course will be assessed on the basis of the practical work undertaken and a 1½ hour written examination in December. The examination and practical work count for 75% and 25% of the final mark respectively.

Requirements for passing the course

All Informatics first and second year courses have the same requirements for passing. In order to pass each course you must satisfy the following requirements:

- achieve at least 35% in the examination
- achieve a total of at least 25% in practical work (this course guide describes elsewhere how the total practical mark is calculated)
- obtain a combined total mark of at least 40% (this course guide describes elsewhere how the combined total mark is calculated from the examination and practical marks).

It is important to understand that while there are resits for examinations **there are no resits for practical work**. Therefore if you do not meet the requirement on practical work the only way to pass the course is to retake it the following year. You will still be able to take the resit examination if you wish but this can only act as a practice run to help you with your reattendance of the course. Note that as usual the requirements can be waived by the Board of Examiners if there are sufficiently strong mitigating circumstances; it is therefore vital that you inform your Director of Studies of any such circumstances.

Checking your progress

In order to succeed in your studies you should keep up with the material of the course and make a good attempt at all the practicals. The requirements stated above represent a bare minimum and do not indicate good progress. Your marks for each practical will be returned to you as soon as they are available so that you can (and indeed should) keep your own record.

For your convenience and as a means of helping you to check your progress, the ITO will do its best to collect the following information for you around the middle of the course and email it to your University sms account:

- the record of your practical marks so far (note that in some cases there might be marks pending for recently submitted practicals)
- the record of submitted practicals.

It is your responsibility to check your SMS email account regularly. If for some reason the information does not reach you then ask the ITO either in person or by email (ito@inf.ed.ac.uk) quoting your full name, matriculation number and the course(s) for which you are seeking information.

Practical work

The course contains four practical assignments which together account for 25% of the overall mark. These are spaced evenly throughout the course and should be completed in your own time. There are no scheduled lab sessions but demonstrator assistance will be available in the Appleton Tower laboratories. Deadlines are normally set to be on Fridays. Hand-in of machine-readable material will be via an on-line submission mechanism; Any paper should be handed to the ITO in Appleton Tower room 5.03. **Late work will not be accepted** other than for medical or equivalent reasons supported by certificates or intervention of a Director of Studies. The assignment timetable is published elsewhere in this guide and pressure of other deadlines will not be accepted as an excuse for late work.

To enable students to judge their performance on a continuous basis, each piece of practical work will be assigned a letter grade in the range A–G and a numerical mark, e.g., 60 out of 100. The interpretation of letter grades is as follows: ‘A’ indicates an excellent performance, ‘B’ a very good performance, ‘C’ a good performance, ‘D’ a satisfactory performance, ‘E’ a marginal fail, ‘F’ a clear fail, and ‘G’ a bad fail. Please note, however, that these marks are provisional and may be revised by the board of examiners.

The majority of students should expect to receive ‘B’ or ‘C’ grades most of the time (although marks may be a little inflated during the first one or two practical exercises). A regular grade ‘D’ should act as a warning signal that extra effort is needed. If you receive more than one ‘E’ grade (or lower) you should see your tutor at the earliest opportunity. As a matter of general policy, if you have difficulty with the material you should alert your tutor as quickly as possible. (It may be easier for you to approach your tutor than vice versa, as your tutor may be reluctant to raise the matter while other students are present.) If your practical work is seriously affected by illness, you should obtain a medical certificate and promptly submit it to the Informatics Teaching Organisation (ITO) office, JCMB room 1502 or Appleton Tower room 5.03, and to your Director of Studies.

Deadlines and Submission mechanisms

You will be given detailed instructions for submitting practical work at the time. Generally this will be via the Informatics submission program. You should keep copies of files submitted for practicals till marks have been posted. **Proof of creation date will usually be required before ‘lost’ work is accepted** so files should not be touched or opened after the deadline. All work should be identified with your name and matriculation number.

Practical deadlines are scheduled for the Fridays in weeks 2, 4, 7 and 10 of the semester. These may be changed but good notice will be given. Our target is to complete marking within 2 weeks except for Practical 2 where we aim to complete marking by week 8 so this mark can be included in the emailed transcript. Deadlines are at 4:00 pm on the day given.

Assignment	Deadline
0	29/9/2006
1	13/10/2006
2	3/11/2006
3	24/11/2006

Practical Marks

Practical work is marked out of a total of 100. These marks are then scaled to produce a mark out of 25%.

Practical marks will be published on the course web page, indexed by matriculation number as soon as possible after hand-in deadlines, usually within 2-3 weeks. You will be sent a transcript of your practical marks a little over halfway through the semester. This enables you to check on your progress and will be a visible indication if any work has gone missing.

Examinations

There will be an *examination* at the end of the course - sometime in the first half of December. The date is of course chosen so that all students can attend. The date, time and location of the exam are decided during the semester and are announced in lectures, web pages and on university noticeboards as soon as possible afterwards. Exam papers have not changed greatly in format over the last couple of years so previous papers on the course web site give a reasonable indication of the sort of questions students can expect to face.

The only circumstances under which the exam may be missed and considered for special treatment are medical conditions supported by a medical certificate and notified to the Teaching Office as soon as practicable.

The resit examination

A resit examination is held in August for any students who failed to achieve the required standard through a combination of practical work and the examination. Remember: the resit only allows recovery from a poor exam mark – recovery from a practical mark of below 25% is not possible.

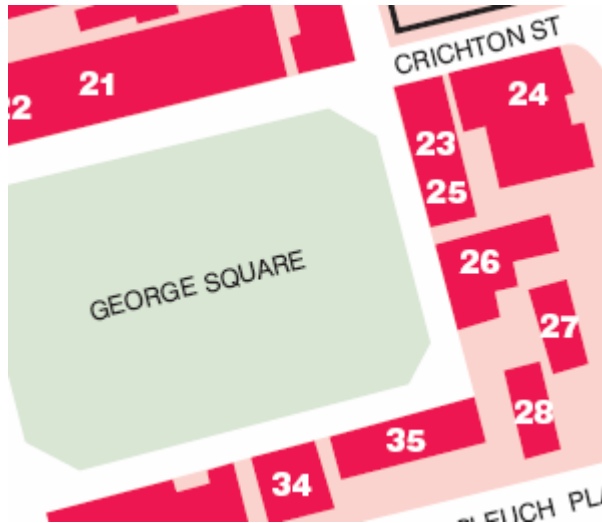
Plagiarism

While you are allowed and even encouraged to discuss practical exercises with your fellow students you **must not submit any work which is not of your own making**. Plagiarism is taken very seriously and is generally easy to detect. For further information please consult the School of Informatics Guideline on Plagiarism².

² <http://www.inf.ed.ac.uk/admin/ITO/DivisionalGuidelinesPlagiarism.html>

4 Facilities

Laboratory



You have access to the laboratory on level 5 west of Appleton Tower (“24” on the map), open from 09:00 to 20:45, Monday to Friday. This area contains workstations and printers you can use when working on the practical exercises. Access to the machines is first come first served and the lab will get busy, especially between 11 am and 5 pm so you may want to plan in advance and work at quiet times. You should familiarize yourself with the lab rules - they’re there to discourage anyone from causing nuisance to others and to ensure that this expensive facility stays

available to all who need it. Please don’t print personal material on the printers – use the main University labs. **Your swipe card will need to be activated for this laboratory.** If your DoS registered you for the course in week 0 this will happen automatically. If not you should contact the ITO at Appleton Tower with your card details and they will do it.

Remote Access to Machines

Although the Laboratory provides the most direct access to the Informatics computing systems used by CP1, there are a number of other ways in, of which the most useful are the many public PC labs throughout the University. The “eXceed” application can open windows on Informatics machines. Instructions are available on the CP1 web site.

Computing Regulations and Harassment

Your attention is drawn to point II.6 of the University’s computing regulations³: *criminal law or which is civilly actionable is the holding or distribution of any material which is defamatory, discriminatory, obscene or otherwise illegal or is offensive or calculated to make others fearful, anxious or apprehensive.* and to the University’s Code of Practice on Personal Harassment⁴.

No student should have to put up with nuisance caused by others be this noise, hacking, harassment, discrimination, exposure to offensive material or anything else liable to cause fear, distraction or upset. If anything is upsetting you then *please* discuss it *immediately* with whoever you feel confident about talking to (probably the course lecturer or your Director of Studies). Complaints of this nature will be dealt with sensitively and

³ <http://www.cpa.ed.ac.uk/calendar/prefh/023.html>

⁴ <http://www.humanresources.ed.ac.uk/equality/HARASS/STUD.HTM>

confidentially. Discussing a problem before it becomes a crisis is always a good policy for all concerned and even if nothing can be done immediately it means that we have warning. What you tell us may well be part of a larger picture that we can then handle appropriately.

5 Communication Mechanisms

Information

There are a variety of ways in which information and views relating to the course can be communicated between staff and students, some formal, others less so. Short announcements concerning matters of organisation will often be made at the start of lectures, and/or posted on the class Web page or emailed out to your SMS account.

Less formal discussion of the course and related issues can be conducted electronically by everyone on the *eduni.inf.cp1* news group, a bulletin board to which you will have access.

You will also be added to an electronic course e-mail facility through which you will receive information from your tutor, lecturers and course organiser. This is at cp1-class@inf.ed.ac.uk and is reserved strictly for communications relevant to the course.

Problems

There are a number of ways to report and seek help with problems relating to the course, your work and the equipment. Demonstrators will be on hand in the lab and/or the workroom to help with conceptual and technical problems encountered during practical exercises. Apparently faulty equipment should be reported to the demonstrator. More serious conceptual problems regarding the course material and practical exercises should be discussed with your tutor or with the lecturer concerned. Above all, the important thing is to seek help before a problem gets out of hand. With more immediate problems you can contact the course organiser or the Informatics Teaching Organisation office.

Changing Things

No course is perfect. There are two formal mechanisms through which problems can be raised and suggestions made. Early in the course you will be asked to volunteer to act as a *class representative*. If more than a small number of students volunteer, then there will be an election to reduce the number appropriately. Class representatives are asked to act both as intermediaries in forwarding problems which students may be unwilling to express directly, and as barometers of class opinion. At regular intervals (at least once a semester) the class reps will be invited to meet with the course organizer and lecturers to discuss the progress of the course. In the past, such meetings have proved invaluable in highlighting problems and suggesting improvements. Secondly, at the end of each course, all students have the opportunity to express their opinions directly in a questionnaire. Minutes of the staff-class reps. meetings and summaries of the questionnaires will be made available to all.

Your attention is also drawn to the University's Student Complaints Procedure⁵.

⁵ http://www.registry.ed.ac.uk/Student_information_pages/Complaints.htm

6 People

CP1 will be lectured by Marcelo Cintra and Philipp Koehn. They can be contacted in person after the lecture, by email, or (in important cases) by phone or in person in their offices.

Marcelo Cintra

mc@inf.ed.ac.uk, 0131-650-5118, JCMB room 2505

Philipp Koehn:

pkoe@inf.ed.ac.uk. 0131-650-8287; 5 Buccleuch Place room 2L02

John Butler (CP1 course organizer):

cp1co@inf.ed.ac.uk; 0131-650-5181, JCMB room 2504

CP1 tutors will be Marcelo and Paul with others depending on numbers.

Music Technology students should address music-specific enquiries where possible to:

Michael Edwards (Music course organiser)

michael.edwards@ed.ac.uk; 0131-650-2431; Alison House room 102

The music tutor will be announced asap.

JCMB is the James Clerk Maxwell Building at King's Buildings, 3 miles out of town.

Administration of the course is done via the Informatics Teaching Organisation, in the James Clark Maxwell Building at Appleton Tower room 5.03. Questions of a general administrative nature ("Which is my tutorial group?" "When do I get my exam back?" "I cannot attend the exam!") should be addressed to the ITO (ito@inf.ed.ac.uk).

Questions concerning the computer system ("I cannot log in!" "I forgot my password!" "How do I submit my practical?") should be directed to the demonstrators in the lab.

Questions concerning the material and feedback can be raised with the lecturers or in the tutorials. Questions about course administration and anything that doesn't fall into the above categories (or where you want to 'escalate' the problem) should go to the course organiser.

Marie Hamilton in the ITO has particular responsibility for CP1.

7 Detailed Course Description

Lecture Times and locations

- Mondays at 2 p.m., room G.01 of the William Robertson Building (WRB is “26” on the map on page 7)
- Tuesdays at 11:10 a.m. in room G.01 of the William Robertson Building
- Thursdays at 11:10 a.m. in DHT room 4.01, (building “28”)

There will be lectures in the first eleven weeks of the semester. Holidays are as indicated in the timetable on page 12. There are introductory labs in weeks 1 and 2 in the Appleton Tower level 5 labs (west) (“24”)

Syllabus

Numbers correspond roughly to lecture hours. This syllabus is not intended to indicate the order in which material will be presented. There is a total of 30 lectures in the course

Introduction to Computer Systems (4)

- The scope of Computer Science and the rôle of computer systems.
- Computer systems, simple systems architecture; processor and memory; network and filestore.
- The CP1 Linux computing environment: Window system (KDE), commands, editors, mail, printing. The UNIX file system: files, commands and their use. On overview of object-oriented programming.

Program Design (4)

The idea of a program as a tool that does a job, the concept of a specification which poses a problem, and the activity of programming as providing a solution to the problem. UNIX tools and combination methods will be used in the practical exercises to introduce the idea that solutions can be built by composing simple components.

Program Design and Development; specification, problem decomposition, functional abstraction. Reasoning about the behaviour of programs – an *informal* introduction. Program testing and its limitations.

Programming in C (14)

The basic building blocks of imperative programming languages are introduced, by providing experience of their use in the context of ANSI C.

Expressions and their evaluation, types. Programming; The notion of state, variables, assignment, conditionals, iteration, arrays, functions, structured programming. Functional and procedural abstraction; headers and libraries, names and scope, call-by-value, call-by-reference.

Case Studies (8)

These lectures will be devoted to examples which illustrate and reinforce the concepts presented in the lectures; they will also be useful for practical work.

Lecture and Practical Timetable

This table gives an approximate idea of the course schedule. Course lecturers may move topics around in light of feedback though so treat this as a **guide**.

Week / Starting	Monday	Tuesday	Thursday	Practical Timetable
1 18 Sep	(holiday)	Introduction to CP1; Getting started: the environment (1)	Lab Session A.T level 5	Practical 0 issued (2 weeks)
2 25 Sep	Getting started: the environment (2)	Lab Session A.T level 5	The 'C' programming language	Practical 0 due 4:00 Friday
3 2 Oct	More C basics	Case study 1: Square Bashing	Conditional execution	Practical 1 issued (2 weeks)
4 9 Oct	Loops	Case study 2: Triangulation	Functions	Practical 1 due 4:00 Friday
5 16 Oct	Parameters; & and *	Simple character by Character I/O	Case study 3: Coin change	Practical 2 issued (3 weeks)
6 23 Oct	(holiday)	(holiday)	(holiday)	
7 30 Oct	Structured data: arrays	Iteration, arrays and Correctness	Case Study 5: Pattern Match	Practical 2 due 4:00 Friday
8 6 Nov	Structured data	Searching and Sorting	Expressions and strings	Practical 3 issued (3 weeks)
9 13 Nov	Libraries and separate compilation	Case study 7: Word lists	Syntax of programming languages	-
10 20 Nov	t.b.a	Introduction to Practical 3	Files in 'C'	Practical 3 due 4:00 Friday
11 (CP1) 27 Nov	Programming languages: a comparison	Case study 8:Maze Running [1]	Revision [1]	
11 (CPMT)	MSP Externals	MSP tutorial 1	MSP tutorial 2	
12 4 Dec	Exam / revision week			Practical 4 (CPMT only)
13 11 Dec	Exam / revision week			

Note 1: CP1 and Music Technology (CPMT) students attend different lectures in week 11.

Note 2: There may be a class test in the lecture slot in week 6

8 Electronic Mail and the Student Mail System

Edinburgh University maintains a *Student Mail System* or SMS to which all students of the University are accredited. This is your main email facility within the university. You may also have other personal electronic mail accounts or accounts within your own department. However, *it is important that you read all your mail regularly, otherwise you risk missing important announcements relating to coursework.*

You should make sure that you identify yourself clearly by name and matriculation number in any mail you send to the School.

Forwarding mail from an SMS account

For convenience you may want to read all your mail elsewhere than from the Student Mail System, for example on an email account you have set up elsewhere. Advice on how to set up forwarding should be available from the University Computing Services⁶. It is *your responsibility* to ensure that any mail forwarding you set up is working correctly.

Note that mail delivery is never guaranteed and that the source address of mail can be forged.

⁶ <http://www.ucs.ed.ac.uk/fmd/unix/docs/mail/forwarding-unix.html>

9 Recommended Reading

The recommended textbook for CP1 is *A Book on C*, by AI Kelley and Ira Pohl, 4th edition, Addison-Wesley ISBN 0 201 18399 4 (£34.99 at Blackwells) or slightly cheaper from amazon.co.uk). This book provides a tutorial reference on ANSI C, and covers all the programming constructs included in the course. The lecture notes do *not* cover all the material contained in the textbook so if you can afford to buy the book you should do so.

For those of you who cannot or do not want to buy the textbook, copies have been placed on reserve in the main library. Copies are also available for consultation in the Computer Science First Year Workroom on Level 3 of the Appleton Tower. However, no single text covers all the material in CP1; lecture notes will be provided to supplement the course text.

The other books are recommended for consultation. Please note that the course uses the ANSI standard version of the C programming language. Be wary of buying or consulting books which cover earlier, *non-ANSI* versions.

Books on C

A. Kelley & I. Pohl, *A Book on C*, fourth edition, Benjamin Cummings, 1998. (The course text.)

A. Kelley & I. Pohl, *C by Dissection*, second edition, Benjamin Cummings, 1992. (Fairly large overlap with *A Book on C*. It covers all the programming constructs needed for CP1, and is specifically designed for readers with no programming background.)

B.W. Kernighan and D.M. Ritchie, *The C Programming Language*, second edition, Prentice-Hall, 1988. (The definitive C textbook, but terse. Beware – the first edition is non-ANSI C.)

K.A. Barclay, *ANSI C - Problem Solving and Programming*, Prentice-Hall, 1990. (Another good introduction to C.)

Reference manual for the KDE Desktop Environment

Nicholas D. Wells, *KDE 1.1 in 24 hours*, SAMS, 1999. (Reference manual for the KDE desktop environment which you will use. Library copies will be made available.)

General Background on Computer Science

If you want to learn more about Informatics you might consider the following:

P. Greenfield, *Introduction to Computing*, McGraw-Hill, 1992. (A gentle introduction to the vocabulary and concepts, especially useful for those with little or no background.)

A. V. Aho & J. D. Ullman, *Foundations of Computer Science, C Edition*, Freeman and Company, 1995. (Good reference for topics in Computer Science.)

D. Harel, *Algorithmics - The Spirit of Computing*, Addison-Wesley, 1987. (A readable romp through the fundamental results which underpin the subject and answers to some of the questions about what computers can and can't do.)

Music Students

MAX/MSP Developers' Documentation – <http://www.synthesisters.com/sdk/max.php>.

10 Administrative note - Safety and Responsible Behaviour

On discovering a fire. Activate the nearest fire alarm; if you cannot immediately see one, shout 'Fire!'. When the fire alarm sounds leave the building by the shortest available route, without stopping to collect your possessions. *Do not use the lifts.*

In the event of an accident. Dial the emergency telephone number 50-2222 immediately. Give the precise location of the accident [building, floor, and room], and describe the nature of the accident.

Laboratories. See http://www.ucs.ed.ac.uk/fmd/central_labs.html for opening hours of all University Central computing laboratories, typically 8am – 8:30 pm. Some labs are open longer and a couple have 24-hour access by arrangement with the lab supervisor. There are pre-payment mechanisms for printing in public labs – these are well advertised and self-explanatory.

Tidiness. Untidiness is a common cause of accidents. Keep all passageways clear; do not leave bags and other items where others can trip over them. Take care not to trip over power cables to electrical equipment. For the convenience of everybody, please keep the computer laboratories tidy. This applies particularly to the area around printers; collect your printout promptly, and try to leave the room tidier than when you entered.

Smoking, eating and drinking. Smoking is forbidden in all public areas. Eating and drinking is generally forbidden in the computer laboratories.

Cars. Parking on University property requires a permit (available at a cost from the Parking Office). Please observe the usual rules for parking, avoiding marked areas such as entrances, fire access routes and gates to any of the University's sites.

Potential hazards. If you spot any potential hazards on University property, please inform the course lecturer or the emergency number depending on the severity of the problem.

Antisocial Behaviour. No student should have to put up with nuisance caused by others be this noise, hacking, harassment, discrimination, exposure to offensive material or anything else liable to cause fear, distraction or upset. If anything is upsetting you then *please* discuss it *immediately* with whoever you feel confident about talking to (probably the course lecturer or your Director of Studies). Complaints of this nature will be dealt with sensitively and confidentially. Discussing a problem before it turns into a crisis is always a good policy for all concerned and even if nothing can be done immediately it means that we have advance warning. What you tell us may well be part of a larger picture that we can then deal with appropriately.

Mobiles and pagers should be switched off please during all lectures; Anyone taking notes direct to laptops or PDAs should have sound and alarms off and make sure they do not distract other students. **Personal electronics should be seen and not heard**

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Ten things you need to know about Computer Programming 1 / Programming for Music Technology 1

You should fill in a registration form and select a tutorial time.

Lectures are:

2:00 pm Mondays, William Robertson Building room G.01

11:10 am Tuesdays, William Robertson Building room G.01

11:10 am Thursdays, DHT room 7.01

Practical Assignments are due on the Fridays of weeks 2, 4, 7 and 10 (plus 12 for the music technology students). Late work is not accepted.

You need to achieve at least 25% in the practical work, 35% in the exam and 40% overall to pass the course.

The overall mark is 75% exam and 25% practical work.

Everything you need to know should be on the course web page at <http://www.inf.ed.ac.uk/teaching/courses/cp1> or in the Guide

That's letter "c", letter "p" numeral "1" wherever you see it.

You can mail the course organizer at cp1co@inf.ed.ac.uk; we will mail you at your SMS account.

Spare lecture notes are available from the ITO, AT room 5.03 or from the web page.

Not everything is in the lecture notes.