Course 152/153

Timothy Murphy

(tim@maths.tcd.ie)

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Summary

This document outlines the aims of the joint mathematics/science course 152/153, and lists the assignments by which the course is assessed.

1 The Course

Course 152/153 is a joint course for 1st year Mathematicians and Scientists. The course for Mathematicians (including Theoretical Physicists) is called 152. The course for Natural Scientists taking Mathematics B is called 153.

The course lasts 2 terms; but there are only lectures during the first term—during the second term the course will be taught by e-mail and tutorial.

2 Prerequisites

The course has no prerequisites. It does not assume that you have used a computer before.

Nearly all the assignments are straighforward; no student taking the course will find any difficulty in completing it satisfactorily, provided he or she invests a reasonable amount of time and effort into it.

On the other hand, if you are familiar with computers you may find the course rather easy. I would appeal to you in that case to lend your expertise to those less fortunate than you, by acting as (unpaid) assistant at your tutorials.

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3   Aims of the Course

The course has 3 main aims:

- To introduce UNIX computer systems in general, and the UNIX system in the School of Mathematics in particular.

- To teach the programming language "C".

- To introduce the LaTeX system for printing mathematics.

The course is entirely practical in character. At the end of the course you should be able to use a UNIX system with confidence, should be able to write simple programs in C, and should be able to write mathematical documents in LaTeX.

4   Three Channels of Communication

The course is conducted through 3 channels:

Tutorials Those taking the course will be divided into tutorial classes of 8–10 students. *Attendance at tutorials is compulsory.* They will last for 1 hour per week, starting in the 3rd week of term.

Tutorial times will be posted on the noticeboard in the entrance hall to the School of Mathematics. They will also be sent out by e-mail. *It is assumed that all students taking the course will find out their tutorial times.* If for any reason the time allotted to you is inconvenient, the onus is on you to swap with someone else, and to inform the relevant Tutorial Director of this.

The weekly tutorials are by far the most important element of the course, particularly at the beginning. In principle these tutorials are compulsory, although an occasional absence is acceptable.

To keep a note of attendance, you will be asked to run the program `tutorial` during each tutorial, while logged into your account on the Maths system. To do this, just type `tutorial` after you see the prompt % or $, and then press the ENTER or RETURN key:

```
tutorial
```

The program will know who and where you are.

E-mail Most if not all information on the course (and on many other matters) will be sent to you by electronic mail (e-mail) on the computer. You will send in your assignments by e-mail to `152tute` or `153tute` as the case may be.

It is therefore very important that you master e-mail as soon as possible.

You must read your e-mail at least twice a week, and preferably every other day. If you fail to do so, and thereby miss important information, *the fault is yours.*

Lectures Although in principle compulsory, the weekly 1-hour lecture (during the first term) is probably the least important of these 3 aspects of the course. Announcements made at the lectures will in general be duplicated by e-mail.

The 'lectures' will be informal, and will give you an opportunity to ask general questions on the course, and on any other computer-related matters.

5 Learning Through the Computer

The course is not only *on* computing; it is largely given *through* the computer. In particular information on the course will mostly be conveyed over the computer. It is therefore vital that you should get a computer account on the Maths UNIX System without delay, and should become with familiar with e-mail (electronic mail) as soon as possible.

You must read your e-mail at least twice a week. It will be assumed that material sent to you by e-mail has been read.

You should also call into the School of Mathematics regularly, to look at the noticeboard. *You are strongly recommended to join the Maths Society;* you can be sure of finding people there to help you if you run into difficulty. (It costs £1; but you can get a 10% discount on books bought through the Society.)

6 Assignments and Assessment

You will have a number of Assignments to complete. The course will be assessed entirely on these Assignments. There will be no end-of-year exam. There will be a closing date for each Assignment; *to gain a mark your Assignment must be submitted before this date.*

It is a requirement for proceeding to Senior Freshman year that this course should be passed.

7 Places

School of Mathematics This is situated at 17–18 Westland Row. At present it can be accessed from inside college through the Hamilton Building from 8am until 10am each day; it can also be accessed from Westland Row by Entacard at all times.

It is hoped to instal an Entacard system shortly allowing access from inside college at all times.

Entacards may be obtained for a small charge from the Computer Laboratory in the basement of the O'Reilly Building.

Main Terminal Room This is Room 14 on the 1st floor in the School of Mathematics. It is open whenever the School is open.

Maths Lab This is also on the 1st floor in the School of Mathematics, and is open during office hours (at least).

Barron-O'Reilly Terminal Room This is inside college, near to the College Nursery by the rugby pitch. It is open by Entacard 24 hours-a-day, 7 days-a-week. to all Mathematics students, and all other students attending Computer courses given by the School of Mathematics (in particular Junior Freshmen Scientists taking course 153),

8 People

There are a number of people connected with the course. If you need to contact them, you will probably find it simplest by e-mail.

Dr Timothy Murphy	tim	Course Lecturer & Director of Computing
Prof David Simms	simms	Head of Department & Chairman of the Computer Committee
Alan Judge	ajudge	System Manager
Christine Hogan	chogan	System Manager in charge of accounts
Keith Brady	krady	System Manager & Tutorial Director for 152/153
Dr Richard Timoney	richardt	Hardware Overlord
Merlin Hughes	merlin	Honorary Technician
Dr Jimmy Sexton	sexton	Expert on Computation
Dr Colm O'Dunlaing	odunlain	Expert on Theoretical Computing

9 Assignments

0. Apply for an account on the Maths Unix System; and when you have one send an e-mail message to `152tute` or `153tute`, as appropriate. *Cut-off date: Michaelmas term, week 3.* [Unmarked]

1. Write a file containing the program hello.c, compile and run it. *Cut-off date: Michaelmas term, week 5.* [Unmarked]

2. As soon as you have an account on `unix1`, send a similar message to `152tute@maths` or `153tute@maths` from `unix1`. *Cut-off date: Michaelmas term, week 6.*

3. Post an article to the newsgroup `tcd.talk`. When the article appears, save a copy in a file, and mail this file (*not* the original file you posted) to `152tute` or `153tute`. *Cut-off date: Michaelmas term, week 7.*

(do again)

4. Write full notes in LATEX on one mathematics lecture you have attended. *Cut-off date: Michaelmas term, week 8.*

5. Write a program to find all palindromes (words the same backwards and forwards, like `deed`) in a dictionary-file. *Cut-off date: Michaelmas term, week 9.*

6. Send e-mail to a user outside Dublin and receive a reply. ('news' may suggest names to you.) Mail the reply to `152tute` or `153tute`. *Cut-off date: Hilary term, week 1.*

7. Send a news article to a non-TCD group. Save the article as it appears, and mail it to `152tute` or `153tute`. *Cut-off date: Hilary term, week 2.*

8. Write a program to calculate the mean and standard deviation of a sequence of real (floating point) numbers. Check that it runs on salmon, under both `gcc` and `cc`, and on unix1. Mail the program to `152tute` or `153tute`. *Cut-off date: Hilary term, week 3.*

9. Write your Curriculum Vitae, using the LATEX style file `resume.sty`. *Cut-off date: Hilary term, week 4.*

10. Write a C program, "dart", which will give the time of the next DART train in a given direction. Mail the program to `152tute` or `153tute`. *Cut-off date: Hilary term, week 5.*

11. Write a C program, "factor", which will factorise a given natural number into primes. *Cut-off date: Hilary term, week 6.*

ls /usr/bin
ln /usr/local/bin.

% apropos mail.

Salmon = salmon.maths.tcd.ie

ardue.doc.ac.ic.uk

gcc is the gnu c-compiler

12. Write a program doing anything you like. Explain clearly what the program does and how to use it (eg in the form of a manual entry). Mail the program and documentation (together) to `152tute` or `153tute`. *Cut-off date: end of Hilary term.*

Notes

1. Further details of individual assignments will be sent to you by e-mail.

2. All assignments must be e-mailed to `152tute` or `153tute`, as appropriate.

3. The maximum marks allocated for the different assignments will not necessarily be the same. (In particular there will be no marks given for Assignments 0 and 1.)

4. To gain marks, these assignments must be completed by the specified cut-off date.

5. All work must be your own. If identical programs are received from different students, *the mark will be shared between them!*

6. In Assignments 3, 6 and 7, your posting or mail should not mention the fact that it is a class assignment; you should write on a topic that genuinely interests you.

10   Postscript

It cannot be emphasized too strongly that it is *up to you to practice what you are taught*. The value of the course to you will depend entirely on what you put into it.

If you are unfamiliar with computers you may feel intimidated at first. Persevere. Nothing in the course is very difficult.

Don't be afraid to ask the more experienced students if you run into difficulty. Above all, *it is even more important to attend your tutorial classes if you feel lost.*