Cmpt 150 ARC - Course Information 2001-2

Instructor: David Gerhard, dbg@cs.sfu.ca
Sessional Office: 10880 ASB
TA: Ramin Afshar, rafshar@cs.sfu.ca
Special ARC TA: Richard Zhang, rzhangb@cs.sfu.ca.
Required Text: Logic and Computer Design Fundamentals, M. Morris Mano, Charles R. Kime, Prentice Hall, 2nd Edition.
Recommended Text: LogicWorks 4, Capilano Computing Systems, Ltd., Addison-Wesley. Mac and PC versions.

May 7, 2001

1 Contact Information

Instructor My office hours will tentatively be Monday and Wednesday, 11:30 – 12:30 and will take place in 10880 ASB . Feel free to track me down outside of my office hours, but understand that outside of my hours, I reserve the right to tell you to come back when I am less busy. I am not available in the hour before class, when I am preparing for the lecture.

The best way to track me down (since I will not likely be in 10880 ASB outside of my office hours) is to send me an email requesting a meeting, and we can set something up.

TA The TA contact information and office hours are:

Ramin Afshar	rafshar@cs.sfu.ca
Office Hours:	Assignment Lab (AQ 3144), or AQ 5125
Wednesday	9:30 – 10:20 (D1), 12:30 – 1:20 (D5)
Friday	12:30 – 1:20 (D3)

These times correspond to the tutorial times you have been given. On the weeks when we hold tutorials, the TA will not hold office hours in these times.

The TA and I will also hold occasional tutor sessions in K9507, 9:30 – 11:20 on Tuesdays and 11:30 – 1:20 on Thursdays. These tutor sessions are provided for ARC students as an additional learning time, to go over concepts or ideas that individuals, lab groups or the class as a whole are having trouble with. The class and the TA will agree on topics to cover. Occasionally, these tutor times might be used as additional lecture times, since in this term we have two holiday Mondays and this course has two hours of lectures on Mondays.

Course Website `http://www.cs.sfu.ca/CC/150/dbg`

Assignments, solutions and other course-related material will be posted here on a regular basis. Postings will be primarily in PostScript and Adobe PDF document formats. If I use a prepared transparency in class, such as a diagram or a segment of code, I will try to post it on the web site before the class I use it in, and make an announcement on the email list.

Course Email List `cmpt-150@sfu.ca`

Course announcements will be made here and you will be expected to see them, so make sure you have access to your ACS account and to email. Feel free to use the list to talk to your classmates, but be aware that mail to the list goes to all students, the TA and the instructor, so think before you send.

2 Grading Information

- Marks will be made available using the Gradebook application on the web:

  `http://gradebook.cs.sfu.ca`

- The final mark in the course will be based on:

Assignments	30%
Midterm	20%
Final Exam	50%

- Students must attain an overall passing grade on the weighted average of exams in the course in order to obtain a clear pass (C or better).

3 Assignments and Exams

Assignments, assignment solutions, midterm solutions and other course-related material will be posted on the course web site, as indicated above. Most of this information will also be placed in the directory `/gfs1/CMPT/150/dbg`, which you can access by FTP at `ftp.sfu.ca` (an alias for `fraser.sfu.ca`) or by logging in to `fraser`. If you are using FTP, you will need to use your campus comnputing network ID, because anonymous FTP will not allow you access to the course directory.

Marked assignments will be returned by the TA during office hours. Each assignment will be available until the next one is marked and ready to be returned. After that, you may pick them up from the instructor.

If you have questions about the way your assignment was marked, first approach the TA who marked the assignment, and discuss it. If, after discussing it with the TA, you still feel that the mark is incorrect or unfair, bring your questions to the instructor.

You can expect an assignment once every one or two weeks, depending on the relative size of the assignment. Due dates and times will be announced with each assignment. Hard copy of assignment solutions should be handed in by placing it in the drop box labeled for CMPT 150-ARC, near K9507. Be sure to put your assignment in the right drop box!

3.1 Late Policy and Missed Exams

Late assignments will be accepted with a penalty of 10% per day, until the solutions are posted (usually two working days). In the case of provable illness, with a medical excuse from a doctor, late assignments will be accepted without penalty until the solutions are posted. In all cases, once the solutions have been posted, late assignments will not be accepted.

Makeup exams will be given only in cases of provable illness.

3.2 Intellectual Honesty

You are advised to become familiar with the Computing Science and University intellectual honesty policies. Check `http://www.cs.sfu.ca/undergrad/Policies` for information on Computing Science policies and procedures of interest to undergraduates, including the School's Statement on Intellectual Honesty.

A good heuristic is 'think together, work apart.' If you have any doubts, err on the side of honesty. The purpose of the assignments and exams is to test your understanding of the material, not your ability to re-write your neighbour's work.

3.3 How to Get a Good Grade on Assignments and Exams

Note: These standards are always in effect, regardless of whether an assignment or exam question mentions them explicitly. Individual assignments may also have criteria specific to the assignment.

- Hand it in on time and correct.
- Read, understand, and answer the question that is being asked.
- Type your answer, or write legibly and clearly. If there are diagrams required, use a drawing program or a ruler. If we can't read it, we can't give you any marks for it.

It is surprising how many students lose marks because of these first three points. They are true for any course you are taking, and they are even more true in the 'real world'. For this course, the TA and I will be marking in three categories:

1. The quality of your solution.

   Is your digital circuit or assembly language program efficient? Is it well structured? Does it make good use of components or assembly language instructions? Does it effectively incorporate the techniques that you've been taught in the course?

2. The correctness of your solution.

   In part, you demonstrate this through your design documentation. Also, if test data is appropriate, does your design work correctly for any example data supplied with the assignment? Does it work correctly on other data sets or inputs? Does it work correctly for extreme data points or trivial cases?

3. The quality of your documentation.

   Have you clearly explained the process and techniques that you used to create your circuit or program? Have you justified your design choices? Have you clearly explained the operation of your circuit or program? Note that answers without documentation will at best get you partial marks for guessing. Undocumented code or schematics will not be marked.

In general, it is your responsibility to provide an answer on an assignment or exam which is adequate to convince the TA or instructor that you understand the material. It is not the responsibility of the TA or instructor to come up with an interpretation of your answer which could be considered correct.

When the assignment requires that you design a digital circuit, you will be expected to submit a copy of the schematic diagram along with documentation describing how your circuit operates and how you designed it. If the assignment involves simulation using LogicWorks, you will be expected to submit documentation describing how you chose the inputs you used to test the circuit, and a timing diagram which demonstrates that your circuit operates correctly. LogicWorks provides the facilities to print hard copies of schematic diagrams and timing diagrams.

For any assembly language programs you write during the course, you will be expected to submit a hard copy of your program, and documentation describing how your program works and how you designed it. You may (if we get this working) be required to submit an electronic copy of your program, which the TA will use to determine how well your program works. Please keep in mind that for electronic submission, your programs must work in the assignment lab environment. If you purchase software used in the course and work on your home computer, it is in your best interest to bring the program in and test it in the assignment lab environment before you submit it.

4 Access to Computing Resources

The campus-wide network maintained by Academic Computing Services (ACS) is called the Campus Computing Network (CCN). It interconnects a large number of machines at both SFU campuses, but the machine you are most likely to encounter is the Unix server `fraser`, which is used for email and internet access, among other things. Your CCN account (ACS calls it your SFU computing account) gives you access to `fraser`, and is also used as your ID on other campus networks. If you havent activated your CCN account, do so as soon as possible - you will need it for this course. You will want to get into the habit of checking your email regularly, on the order of once a day.

The software used in CMPT-150 runs on PCs under Windows 2000 in the Assignment Lab (AQ 3144). The assignment lab is part of the ACS distributed computing facilities (DCF). The PCs are connected by a Novell Netware network, which is distinct from the campus computing network. You will have access to the assignment lab for this course. Your login ID will be your SFU email address (without the '@sfu.ca') and your initial password FOR THE ASSIGNMENT LAB will be the first 7 digits of your student number. Since this is easily discovered by other people, it is suggested that you change your password.

It is important to realize that you can access the assignment lab machines over the Novell Network from other DCF labs.

For further information on these facilities and various administrative details, see the Computing Science Course Central web page at `http://www.cs.sfu.ca/CC/`. The ACS web page is `http://www.sfu.ca/acs/`, and it contains links to useful information about the different types of accounts as well as other general information on ACS facilities and services. The DCF web page at `http://dcfonline.sfu.ca` provides useful information about the various ACS computing facilities scattered around the campus.

5 Course Software

5.1 LogicWorks and DesignWorks

While learning about digital hardware design, you will be using LogicWorks from Capilano Computing Systems Ltd., for schematic drawing and simulation. LogicWorks is the student version of Capilano Computings professional computer-aided design (CAD) package, DesignWorks. The software that is available in the assignment lab is DesignWorks. For the purposes of this course, they are interchangable, that is, we will not be using the extra features in DesignWorks that are not in LogicWorks.

The recommended text, LogicWorks 4, is a combined tutorial and reference manual for LogicWorks, and comes complete with a copy of the software. There are some Macintosh versions and some PC versions, so make sure you get the one that is appropriate for you. For the latest upgrades for LogicWorks, see Capilano Computings web site, `http://www.capilano.com`.

5.2 M68HC11 Assembly Language Assembler and Simulator

The Motorola 68HC11 Reference Manual (which will be distributed later in the course) provides the details you need to know in order to write assembly language programs for the M68HC11 microprocessor. Motorola provides this book for free.

To assemble and simulate M68HC11 assembly language programs, youll be using the `casm11` assembler and `sim11a` simulator from P&E Microcomputer Systems. Should you want to purchase this software for use at home, the web page for P&E Microcomputer Systems, `http://www.pemicro.com`, contains information on ordering the assembler and simulator.

6 Software Demonstrations and Office Hours

The TA will give demonstrations of the use of DesignWorks and the assembler and simulator. These demos will be held in the ACS Microcomputer Facility (MCF), AQ 3148, in weeks 2, 3, 6, and 7, during the scheduled tutorial times for the course. Please attend the demonstration at your assigned time, so that everyone will have a computer to use. There will be an announcement (in class and by email) prior to the weeks when a software demonstration will occur.

Most weeks, we will not make any specific use of the tutorial slots. Specific tutorial times are scheduled for the course only so that we can be sure there is a time when you can be available for software demonstrations. TA office hours include all scheduled tutorial times on weeks when tutorials are not happening.

Be reasonable in your expectations for access to the instructor and TA during office hours. Office hours become very busy immediately before assignments are due, and before tests.

The instructor and TA are not walking software manuals. We expect that you will make yourself familiar with the contents of the manuals and documentation available for LogicWorks and 68HC11 software, and that you will consult them before you come to ask for help.

7 Miscellaneous

- Unlike professors and lecturers, TAs have a fixed number of hours (specified in their contract) which they can devote to a course. Please do not try to track them down for course-related questions outside of their scheduled office hours. Send email if you're having difficulty reaching a TA.

- If there are any xeroxed handouts, there may be a fee for them; if so, it will be collected at the end of the semester. Failure to pay means you will receive an 'N' for the course.

- During lecture, feel free to ask questions. If you don't understand, there are probably other people around you who don't understand, and might even appreciate you asking your question. If no one asks questions, I assume I've explained the topic clearly.

  Keep in mind that I understand this stuff, so the explanations in lecture seem perfectly clear to me. If that's not true for you, you need to let me know.