

## ELEX 3525 Course Information

### Instructor

Ed Casas. You can reach me by e-mail at [ecasas@bcit.ca](mailto:ecasas@bcit.ca), by phone at +1 604 432 8936 or by posting a question to the Discussions section of the course web site (see below).

### Lab, Lecture and Exam Schedule

Lectures are 50 minutes long starting at:

Day	Time	Before March 14	After
Monday	2:30 PM	SW3-4725	SE12-313
Wednesday	8:30 AM	SW1-2590	SE12-309
<del>Thursday</del> <del>Friday</del>	2:30 PM	SW3-2765	SE6-109

There are no lectures on the [Monday, February 8](#), [Good Friday \(Friday, March 25\)](#), Easter Monday (Monday, March 28), and Victoria Day (Monday, May 23) holidays. Note that the lecture rooms change on Monday, March 14.

Labs are 110 minutes long on [Wednesdays at 9:30 \(sets 3B, 6 students and 4M, 5 students\)](#) and [Thursdays at 8:30 PM \(set 3A, 7 students\)](#) ~~Thursdays at 3:30 PM~~ in SW1-3575. Lab notes will be handed out and posted on the course web site.

Any unscheduled changes to the published room numbers, lecture and lab schedules will be posted on the course web site.

A one or two-hour mid-term exam will be held shortly after the Easter long weekend. A three-hour final exam will be scheduled between May 24–27.

### Office Hours

My office is in SW1-3061, accessed through SW1-3059. Scheduled office hours are:

Day	Time
Wednesday	11:30 AM– 1:30 PM
Thursday	10:30 AM– 1:30 PM

It's a good idea to let me know if you intend to drop by as I may be away from the office. Other times are also possible by appointment.

### Evaluation

Component	Weight
Assignments	20%
Labs	20%
Mid-Term Exam	20%
Final Exam	40%

### Assignments

Several assignments will be given out during the term. You will have at least one week to complete each assignment. Solutions will be handed out for all questions but only some of the questions will be marked. Each assignment should take several hours to complete and can be considered a “take-home exam”.

### Labs

The mark for each lab will be calculated as follows:

Component	Weight
pre-lab assignment	20%
completion of lab objectives accurate, complete and well-written	60%
lab report	20%

The purpose of the pre-lab assignments is to prepare for the lab, so it must be submitted before the start of the lab or you will receive a mark of zero for the pre-lab assignment.

Marking for the lab completion mark will depend on the lab. It may include demonstrating a working program or circuit. In other cases it will require submitting screen captures or measurements. Note that in some cases you must submit a lab report with appropriate results to get the lab completion mark.

You will have at least one week after you complete your lab to submit your lab report to the course web site. However, any lab reports not submitted when the reports are collected will receive a mark of zero.

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## Exams

There will be one three-hour final exam and one 50 (or 110)-minute mid-term exam. Exams will allow any books or notes but no electronic devices other than a calculator.

Most students find it useful to bring well-organized lecture notes and solutions to the exercises and assignments to the exams.

## Absences

If you were unable to complete an assignment, lab or exam due to illness, please submit a [Student Medical Certificate](#) to [Kelly Voros](#) who will then notify the instructors of the courses affected.

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## Marking

Marked submissions will be uploaded to the course web site. They will be available in the “feedback” column of the Dropbox section. Typically each comment indicates something for which a mark was subtracted.

The marking scheme (“rubrics”) will be available on the course web site under “Course Information” along with your marks. You can retrieve the password required to view your marks by clicking on the envelope icon on the top of page. Do not use the D2L e-mail system for anything else.

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## Accommodations for Disabilities

From <http://www.bcit.ca/drc/>:

... if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the Disability Resource Centre (located in SW1 room 2360, [bcit.ca/drc](http://bcit.ca/drc), 604 451-6963) as soon as possible. The DRC staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. ...

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## How to Do Well

What do you need to do well in this course? Experience has shown that:

**to pass:** attend all lectures and labs and submit all assignments and lab reports with answers – right or wrong

**to get above 70%:** actively participate by asking questions of yourself, your colleagues and/or the instructor

**to get above 90%:** review the material critically and try to find the instructor’s mistakes

Your mark will also depend on your ability to follow instructions and pay attention to details. Students often fail to notice important details and lose marks for things such as giving a very complete and detailed answer to a different question, submitting in a different file format (.doc, .zip) than the one requested, or doing the work and then submitting it late or not at all.

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## Lecture Notes

There is no textbook required for this course. Instead, lecture notes will be handed out before each lecture.

Most lectures will include exercises that you will complete during the lecture. There isn’t enough space to complete the exercises on the handouts so you should bring a notebook to class where you can take notes and work out the answers to the exercises.

The answers that are worked out in class will, eventually, be made available on the course web site. But you should try to work out the exercises on your own.

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## Optional References

The text by Beasley, [Electronic Communications: A Systems Approach](#) is used by other courses in the Telecom program and covers some of the material in this course.

Andrew Tanenbaum’s [Computer Networks](#), 5th Edition and William Stallings’ [Data and Computer Communications](#), 10th edition, both published by Prentice-Hall/Pearson are readable introductions to many aspects of computer networking. Both are available from the BCIT Library.

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## Course Web Site

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Lecture notes, assignments, lab instructions and solutions will be handed out during lectures and will also be made available on the course web site (<https://learn.bcit.ca/d21/home/300090>).

Students can also ask and answer questions using the web site's "Discussions" feature.

Please do not send e-mail from the course web site, these e-mails have invalid return e-mail addresses and I cannot reply to them. Instead, use the e-mail address above.

Previous versions of this course including lectures, notes, assignments, exams and solutions, are archived at <http://www.ece.ubc.ca/~edc>. This is a good source of practice questions for exams.

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## Document Preparation and Submission

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### Document File Formats

Much of your professional work will involve working with electronic documents. There are many document formats and the consequences of preparing a document in the wrong format can be serious.

In this course you will be asked to submit assignments and lab reports to the course web site in specific file formats. Unfortunately, the web site will not warn you if you submit a file in the wrong format. *If you do not submit an assignment or lab report in the required file format I will not read it and you will receive a mark of zero for that submission.*

**For this course, when the file format is not specified, you must submit the document in PDF format.**

Just as important as the file format is making sure your document is submitted to the correct dropbox and that it is not corrupted. I recommend downloading your submissions to make sure they are readable.

### Creating PDF Files

Many word processors (including the free [LibreOffice](#)) will export to PDF files. There are also free utilities such as [FreePDF](#) that allow you to "print" any document to a PDF file.

If you prefer to write your labs and assignments by hand you can scan them and convert them to PDF. You can use the [NAPS2](#) software and the scanner in

SW1-3555. If you have a smart phone with a camera you can also use an application (e.g. [Tiny Scanner](#)) to photograph and convert handwritten assignments to PDF.

Make sure the documents you submit are readable. Grayscale scans are usually easier to read than two-level.

### Embedding Content

You should learn to include various types of content in your documents. In particular:

- scans or photographs of other printed or handwritten documents;
- graphs and tables created in other 'Office'-type programs and embedded in your document;
- the screen output of arbitrary software using screen-capture utilities (e.g. Windows' 'Snip' tool)
- program listings (e.g. open in Notepad++ and use Plugins / NppExport / Copy RTF to clipboard and paste into your word processor)

### Significant Figures

Read the Wikipedia article on [Significant Figures](#). For example, if your measurements have three significant figures don't give results with 10. Marks may be deducted for using an unwarranted number of significant figures in your assignments and lab reports.

### Cover Pages and Templates

Each submission must include the following on the front, preferably on a separate cover page: the course number and name, the lab or assignment number and title, your name and BCIT ID, and the date the document was created.

You may find it helpful to create a document template that you can re-use for future submissions.

### Submission

All assignments, pre-labs and lab reports are to be submitted to the "Dropbox" section on the course

web site. You may use any file name for your document. Note that you must click “Submit” after uploading your file. You should receive an e-mail confirmation. You may want to check that your document can be downloaded and is readable. Do not add comments when submitting your documents as I won’t be able to see them.

Unfortunately, the web site will not warn you if you submit a file in the wrong format. Again, *if you submit an assignment or lab report in the wrong file format you will receive a mark of zero for that submission.*

Submissions may be collected anywhere from a few minutes to a few weeks following the submission deadline. If you have not submitted your file(s) to the correct dropbox when I collect them you’ll receive a mark of zero for that submission.

You’ll be able to update submissions until the time I collect them. So if you’re not finished an assignment or lab report by the deadline I recommend submitting the incomplete version and updating it later if you get a chance.

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### Proctored Lab Hours

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The telecom labs (SW1-3555, -3575, -3585) will be open and supervised for a few hours on most evenings. Hours will be posted on the lab doors. Drop by SW1-3555 and ask the proctor for access to 3575 if you need to finish off a lab. You can also drop in if you want to work with your colleagues in a quiet environment.

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### Equipment

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A calculator that can convert between decimal, binary and hexadecimal number bases will be very useful. A calculator that can compute cumulative Gaussian probabilities (such as the Sharp EL-W516XBSL or Casio FX-115ES/991ES commonly purchased by first-year students) will be useful for a few problems. In exams you may use any calculator without a wireless interface (i.e. without WiFi, Bluetooth or IR capabilities) but not a phone, tablet or computer.

You will need a USB flash (“pen/stick/thumb/key”) drive to transfer data to and from lab instruments. It should be formatted with the usual MS-DOS FAT-32 file system (rather than NTFS, for example). En-

rypted drives will not work. The lab instrument manuals specify a maximum drive capacity of 8 GB but larger drives often work.

For a few of the labs you will need your solderless prototyping board (“breadboard”) and hookup wire.

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### Software

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There is a range of free and useful PC software that we will use in the course that you can optionally install on your own computer. This includes: the [Notepad++](#) text editor, the [tcc](#) Tiny C and [Pelles C](#) compilers, the [FreeMat](#) Matlab-compatible numerical analysis software, the [Audacity](#) waveform editor, Altera’s [Quartus II](#) FPGA synthesis and simulation software, and the [LibreOffice](#) and [FreePDF](#) programs mentioned above. Most of these are also available, or have equivalents, for Mac and Linux systems.

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### Plagiarism

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Plagiarism means taking credit for the work of someone else. Read the [BCIT Student Guide to Plagiarism](#) if you are not clear on the topic. Briefly, do not copy or paraphrase *anything* without attributing the source.

Assignments, labs and exams are to be done individually. Students are encouraged to seek help from classmates but copying is not allowed. Instances of plagiarism will be reported to the Associate Dean and dealt with according to BCIT policy [5104](#) (“Sanctions range up to and including suspension from the institute.”).

Assignments, labs and exams may be set up in a way that allows plagiarism to be detected. This may not be obvious to you.

If asked, help your classmates find their own solutions, do not share your solution with them.