

ELEX 3525 Course Information

Instructor

Ed Casas. You can reach me by e-mail at ecasas@bcit.ca, by phone at +1 604 432 8936 or by posting a question on the course website.

Office Hours

There will be no in-person office hours. Questions about the course material are best posted to the course website's discussion forum but if you'd like individual help, please contact me by phone or e-mail to set up an appointment and we can meet online.

Course Website

Lecture notes, lab instructions, quizzes, exams and solutions will be available on the course website: <https://learn.bcit.ca/d2l/home/664300>.

The website also contains the latest schedule of lectures, labs, quizzes, exams and the course withdrawal deadline.

Please ask questions of general interest on the course website under Activities → Discussions. This includes questions about the lecture and lab material. Questions about personal matters such as marking or absences should be e-mailed to the instructor.

However, please do *not* send "e-mail" from the course website; these are not forwarded to actual e-mail and I am unlikely to see them. Instead, use the e-mail address above.

You can get text or email notifications of updates to the course web site by selecting Notifications from the drop-down menu next to News on the course home page.

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.

Online Course Format

The course will be held entirely online this term. You should attend the online lectures. You must attend the online quizzes and exams scheduled during the course. You must do the labs at home and then submit the documentation described in each lab to show that you completed the lab.

Evaluation

Component	Weight
Labs	30%
Quizzes (5)	25%
Mid-Term Exams (2)	25%
Final Exam (1)	20%

Labs

Students will log in remotely to their assigned workstation in SW1-3575 to do the labs. Students will use virtual control panels to configure the equipment to generate waveforms and make measurements. The instructor will connect the equipment on the workbenches appropriately for each lab. The experience should be like an actual lab except you will not be able to hook up the equipment yourself.

Lab instructions will be posted on the course website beginning the week of September 14. You will have at least one week to complete each lab. Some labs may take two weeks to complete.

The course instructor will be available in a Virtual Classroom at the start of each scheduled lab session. He will be available to help until the end of the lab session or until all students have left.

Students may log in to a workstation at any time to work on a lab. Following the due date for one lab the equipment will be reconfigured for the next lab.

Lab schedules, the current lab configuration and workstation assignments will be posted on the course web site.

The lab completion mark will depend on the lab. It may require submitting screen captures or measurements.

You do not have to pass the practical (lab) part of the course to pass the course.

Quizzes

Quizzes will be held during the scheduled lecture times on the dates noted in the course schedule.

Exams

Two one-hour mid-term exams will be held during the scheduled lecture times on the dates noted in the course schedule.

A three-hour final exam will be scheduled the week of December 7–11.

Quizzes and exams will be available under the Activities → Quizzes feature of the course website. They will be “open book” – you may use any books or notes you wish but you may not communicate with other students during the exam.

Important Dates

Sep. 9	Classes start
Oct. 12	Thanksgiving Holiday
Nov. 11	Remembrance Day Holiday
Nov. 16	Last day to withdraw and receive a “W” on transcript
Dec. 7–11	Final exams

Attendance and Absences

I recommend, but do not require, attendance at lectures. If you miss a lecture you can review a recording which will be available on the course website after the lecture.

You do not have to attend your (virtual) lab session but you must submit the required documentation for a lab to get credit for completing it.

The process to follow if you were unable to complete a quiz, lab or exam because of illness is under review. You may not need a medical certificate to justify an accommodation for an absence.

Lecture Notes and Other Resources

There is no textbook for this course. Instead, lecture notes will be provided for each topic.

These notes may include exercises that will be completed during the lecture. The answers will be made available on the course website, but you should try to work out the exercises on your own.

The course website contains other resources including datasheets, and links to software and other online materials.

Optional References

The text by Beasley, [Electronic Communications: A Systems Approach](#) is used by some other courses in the Telecom program and covers some of the material in this course. If you don't have need a copy I don't recommend buying one for 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 of computer networking. Both are available in the BCIT Library.

Document Preparation and Submission

Document File Formats

Unless otherwise specified, documents should be submitted in PDF format. *If you submit a document in the wrong file format you will receive a mark of zero for that submission.* Note that the website will not warn you if you submit the wrong file type.

Creating PDF Files

Word processors (recent versions of Microsoft Word and the free [LibreOffice](#)) will export to PDF files. Please rotate, crop and scale any images appropriately. Most operating systems also allow you to “print” to a PDF file from their print dialogs.

If you prefer to write your labs by hand you can scan them and convert them to PDF. There are apps (Microsoft Office Lens, Genius Scan, Adobe Scan) that can photograph your handwritten documents and convert them to PDF. Grayscale scans are easier to read than two-level.

After submitting a document make sure it's readable by viewing it on the course website. For example, embedded files such as source code or spreadsheets are often invisible.

Embedding Content

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

- scans or photographs of other printed or hand-written documents;
- graphs and tables created in ‘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 must be single-spaced and use a monospaced font such as Courier. A simple way to ensure this is to open your code with Notepad++ and use Plugins → NppExport → Copy RTF to clipboard and then paste into your word processor.

Units, Notation and Significant Figures

Numerical results without units are incomplete and will be graded as incorrect.

Use [SI units](#) and [engineering notation](#). For example, 1.2×10^{-5} F should be written as $12\mu\text{F}$.

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 first page, 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

Files must be submitted to the correct folder in the Activities → Assignments section on the course website.

You may use any file name for your document. Don’t add comments with your submission – I may

not see them. Note that submitting files requires two steps:  followed by . You should receive an e-mail confirmation; save it.

Checking that your document is submitted to the correct submission folder and that it’s readable is as important as using the correct file format. Double-check that you’ve used the correct submission folder and then download your submission to make sure it’s readable.

Submissions may be collected any time after the submission deadline. You’ll receive a mark of zero for that submission if you have not submitted your file(s) to the correct folder when they’re collected.

You’ll be able to update your submissions until they’re collected. So if you’re not finished by the deadline I recommend submitting the incomplete version and updating it later if you get a chance.

Important Notes

- 1. If you do not submit an assignment or lab report in the required file format it will not be downloaded or read and you will receive a mark of zero for that submission.**
- 2. You must submit the document *in PDF format unless another file format is specified.***

The web site will not warn you if you submit the wrong file, submit it to the wrong folder, if the file is in the wrong format or if it’s unreadable. These happen every year. However, no allowances will be made for these types of mistakes.

This policy will seem harsh when you get no credit for something on which you’ve spent much effort. Unfortunately, it’s necessary to run the course efficiently and equitably.

Marking

Marked submissions will be available in the Assignments section of the course website in the “feedback” column. Not all items in each submission may be marked. Typically each comment indicates an error

for which a mark was deducted. Not all items in each report will be marked.

The marking scheme will be published on the course website under “Course Information” along with your encrypted marks.

Each student will be supplied with a password they can use to view their own marks. This password will be available in the “Password” column in the “Grades” section of the course web site.

Software

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

You can also install some [licensed software](#) for free including Microsoft’s Visual Studio and Mathwork’s Matlab.

Academic Integrity

Labs and exams in this course must be done *individually*. Students are encouraged to seek help from classmates but copying is not allowed. Instances of plagiarism will be dealt with according to BCIT policy [5104](#).

Here are some guidelines for this course:

Don’t:

- divide up the work or together on solutions
- submit a modified copy of someone else’s solution
- ask to look at someone else’s solution or show someone else your solution, not even in rough form
- write out a solution for someone else, not even on a white board

Do:

- help someone else arrive at their own solution by asking them leading questions
- explain your interpretation of the question (but not the solution)
- explain material found in the lecture notes or other references
- share books, papers or links to useful reference material – unless finding this material is part of the assignment
- compare your final result – but only if each person has arrived at their answer independently; any discrepancies must be resolved independently

Briefly, if a classmate asks for help, help them to find their own solution, do not show them yours. When copying is detected I can’t tell who copied from whom and all students involved will be penalized.

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

Distributing Course Materials

Lecture recordings are for students in the course and may not be redistributed.

Please ask before distributing materials I’ve posted. I typically give permission under a CC BY-NC-ND [Creative Commons](#) license but this is not possible when the materials are owned by others, such as BCIT.

Copyright and Plagiarism

Throughout your career you will use the work of others. This introduces two different risks: copyright infringement and plagiarism.

Whenever you use the work of others you should ask yourself two questions:

- Am I allowed to copy this material? In Canada this question is answered by Canadian copyright law and determines whether you would infringe copyright.

- Do I need to cite a source for this idea? For BCIT students this question is answered by section 8.1 of BCIT's [policy on academic integrity](#) and determines whether you would commit plagiarism.

Copyright law forbids copying others' work without permission although there are certain exceptions. In addition to the "fair dealing" exemptions, BCIT belongs to [Access Copyright](#) which gives you permission to copy and download material from most publishers.

Plagiarism means taking credit for the work of someone else. Briefly, you must reference the source of an idea if there's a possibility a reader could mistake it as your own.

You are expected to comply with these laws and policies. The BCIT Library has introductory material on [copyright](#) and [avoiding plagiarism](#).

- I must pass the lab portion of the course to pass the course.
- If I miss a lecture I must get a note.
- If I missed a lab because I was sick I should e-mail the instructor a medical certificate.
- The instructor prefers that I ask questions using the Learning Hub e-mail system.
- Plagiarism could harm your professional reputation.
- Plagiarism could result in criminal charges and a fine.

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 lab reports with answers – right or wrong

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

to get above 90%: review the material critically and 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 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.

Quiz

Are the following true or false?

- I can submit assignments prepared using MS Word.
- I can submit .docx files.