

## ELEX 3525 Course Information

**Note: The course format and evaluation methods are subject to change due to the evolving public health situation.**

### 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 on the course website.

### Course Website

Lecture notes, lab instructions, quizzes, exams and solutions will be available on the course website: <https://learn.bcit.ca/d21/home/768843>.

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

You can be sent text or email notifications of updates to Learning Hub courses by selecting Notifications from the drop-down menu next to your name at the top right of any Learning Hub page. I recommend subscribing to News - new item available and optionally to Discussions - new post ....

### Getting Help

Most questions can be answered on the course discussion forum or by e-mail. Formulating the question should get you closer to an answer.

Please post questions about the course, lecture, or lab material on the course website under Activities → Discussions. You may post anonymously.

Use e-mail for questions on personal matters, such as your marks or absences.

In some cases you may need to show an instructor what's happening on your computer. This is only practical by sharing your desktop in a Learning Hub Virtual Classroom or Zoom session. Contact the instructor to arrange a mutually convenient time. If you're on campus you may be able to use a PC in the lab.

### Evaluation

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

### Labs

The mark for each lab will be calculated as follows:

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

You will have approximately one week to prepare each pre-lab report. The purpose of the pre-lab assignment is to prepare for the lab so if the pre-lab report is not submitted before the start of the lab you will receive a mark of zero for that pre-lab.

The lab completion mark will depend on the lab. It may require demonstrating a working program or simulation results. In other cases it will require submitting screen captures or measurements. In these cases you must submit a lab report including the appropriate results to get the lab completion mark.

You will have at least one week after your lab to complete and submit your lab report. Lab reports submitted after the reports are collected or submitted in the wrong format will receive a mark of zero.

Please don't include a copy of your Pre-Lab Report in your Lab Reports. It's unnecessary material I have to download and skip.

Only parts of each pre-lab and lab report may be marked.

You do not have to pass the lab (practical) portion 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 final exam week.

Quizzes and exams will be “open book” – you may use any books or notes you wish. However, you may not use any electronic devices (computer, cell phone, etc.) other than a calculator.

## 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.

The final lab and quiz marks will be computed as the mean after omitting the best and worst marks.

Students can retrieve details of their marks from the **marks** document found under Content → Course Information. The password required is available in the Password row in the Grades page of the course website.

## Attendance and Absences

Do not come to campus if you feel unwell. You do not need to attend lectures. A Learning Hub Virtual Classroom will run simultaneously with the in-person lectures and recordings of the lectures will be available.

If you were unable to complete a quiz, lab or exam because of illness please notify the program administrator, [Gundi Minato](#), who will notify all affected instructors. Absences due to documented illness will not be counted in the computation of your marks.

Poor weather, transportation failures, communication and power network outages, family crises, etc. may cause you to miss a lab, quiz or exam for reasons beyond your control. It’s impractical for me to make up another quiz or exam or allow you to write the same one later. However, missing one quiz or one

lab, by itself, will not affect your final mark. By omitting outliers your final grade should more accurately reflect your abilities.

## 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.

Previous versions of this course are archived at <http://people.ece.ubc.ca/edc>.

## 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

### File Formats

Submit documents in PDF format unless otherwise specified.

*If you submit a lab report in the wrong file format or to the wrong folder you will receive a mark of zero for that submission.* The website can’t warn you about these mistakes.

### 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.

## 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 ‘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,  $1.2 \times 10^{-5}$  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.



## 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.

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.



### Important Notes

- 1. If you submit a file in the wrong format it will not be 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.

## 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 computer. This includes: the [Notepad++](#) text editor, the [Octave](#) Matlab-compatible numerical analysis software, the [Python](#) scripting language, [Audacity](#) waveform editor, the [Wireshark](#) network protocol analyzer, and Intel's [Quartus Prime](#) FPGA synthesis and simulation software. Most are available, or have equivalents, for Mac and Linux systems. Most are also available through BCIT's [AppsAnywhere](#).

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

## Academic Integrity

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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

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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

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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](#).

- 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

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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

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Are the following true or false?

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