Unofficial First Year Guide To Everything

Your Lovely (And Possibly Smelly) Upper Years

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Contents

0.1 Introduction

Welcome to the **Unofficial First Year Guide To Everything**! If you are an EngSci 2T7+, welcome! If you are not, congratulations on making the right decision! Here, you can see my super-duper subjective guide. This is still a WIP, so don't expect there to be too much (yet). Feel free to contribute by submitting a pull request.

This is not an official document from UofT.

You can contact me via Discord (niceguy#6628).

Chapter 1

Supplies

Before coming into EngSci, you might wanna empty your parent's bank account just a bit more. As someone who is on the frugal side, here is some advice:

- Textbooks

    - Check with your professor to see if the textbook is actually used

    - See if you can download it (legally)

    - You can even print the relevant chapters out using your 900-per-term printing quota (they rarely use the whole book)

    - In most cases, there isn't much difference between a newer and older edition. However, you should always check.

- Laptops/Tablets

    - You might wanna get one if you have neither. You need these for meetings (Praxis, Design Teams), homework, note-taking, etc. A laptop is better than a tablet.

    - You don't need a new laptop just for better specs. Use Linux (I am typing this on a 10-year-old laptop). There are almost always outlets in lecture halls (ranging from one per seat to one per lecture hall), so battery life does not matter as much.

- It doesn't matter if you have a Mac or a PC

• Pens, pencils, erasers, paper

- Cheap enough that it doesn't really matter.

• Calculator

- Casio-FX991EX, get a second hand calculator from an upper year

Chapter 2

Preparing for EngSci

A lot of 2T7s have asked me what they can do to prepare for EngSci. I would say there is really nothing to prepare for; enjoy your summer! But if you insist, here is some stuff you can do (Note: I didn't do most of them and I still did fine)

2.1 Health

Exercise and get 10 hours of sleep every day, because you probably won't get to do that. As for mental health, spend time with your family, friends, and your partner (if any).

2.2 I think I am very smart

Congratulations! If you did high school in North America, your high school grades mean nothing. Also Calc BC means nothing. Getting good grades doesn't mean you're particularly smart (the opposite doesn't have to hold of course). I suggest everyone try out JEE Advanced (it is actually very fun). If you found it easy, I apologise for being sarcastic.

2.3 Academics

Now there are a lot of things you can do to prepare for EngSci academics. I would suggest you to check out the past papers on `courses.skule.ca` to figure out what to prepare for. Depending on how you learn best, pick one (or more) of the below

- Textbooks (including LibreTexts!)

- Educational Websites, e.g. w3schools, Khan Academy

- Online courses (I cannot guarantee how good they are)

- Notes from upper years

You might want to learn about pointers, or coding in general if you don't have experience. Try learning about limits and $\epsilon - \delta$ proofs, but it's okay if you don't get the gist of it yet. Some basic linear algebra and MATLAB could be useful, but it doesn't really matter as you can learn those in an hour or two anyways.

2.4 Projects

Consider making your own projects! They are fun, and you can put them on your CV. Learn how to use GitHub, and put your cool code there. Or build a thing (anything) and document your design and the building process. It's okay if it doesn't work or if you make mistakes. You learn how to fix problems and develop good practices to avoid them in the first place. It's like how running into bugs teaches you about debugging, testing, and documentation. You might not have as much time for these in the future, so make sure to try them out. I certainly wish I did...

2.5 Further Questions

You might have noticed that I mentioned a lot of stuff without explicitly teaching you how to do it. The answer is "Google it". Some genius answered the same question you have 12 years ago, so I won't bother reinventing the wheel.

Chapter 3

Courses

3.1 CIV102: Structures and Materials

Don't worry, those courses are mostly: "here's an equation, know where to use them". Nobody comes in knowing CIV, unless if you're a nerd. Just make sure to start your project and assignments as early as possible. They are also really generous with part marks, so don't give up just becausae you can't get the final result!

3.2 ESC101: Praxis I

THERE IS NO PREPARING FOR PRAXIS! You are either good at it, or bad at it. I would assume why most people don't like this course is because:

1. Unbalanced return on effort spent

2. Grades are very subjective

3. There's lots of writing

3.3 ESC103: Engineering Mathematics and Computation

There are two parts to this course. The first part is linear algebra, and covers vectors, matrices, dot/cross products, eigenvectors and eigenvalues, etc. The second part covers numeric methods such as Euler's method and the improved Euler's method. In the first part, you do questions in tutorials, then you have MATLAB labs in the second part. If you did vectors in high school, the first part should be easy, likewise for MATLAB.

3.4 ESC180: Intro to Computer Programming

Programming in python. Your whole experience in computer will be split into:

- I know programming: you can basically skip lectures and review for one day before midterm and be fine

- What is programming???: you might suffer in this course, but worry not, this course actually moves quite slow... you will catch up

niceguy would like to add that he started coding in UTEA, less than 3 months before school started, and everything turned out fine. He's also met someone who learnt coding in first year, and proceeded to win in hackathons and is now doing his PEY at Intel.

3.5 ESC194: Calculus I

Calculus starts from basically defining what numbers are, though you do need basic trigonometry, e.g. the functions $\sin, \cos, \tan$, and how to evaluate them. You are introduced to epsilon-delta proofs which should be new to everyone

$$\forall \epsilon > 0 \exists \delta > 0 \text{ s.t. } 0 < |x - c| < \delta \Rightarrow |f(x) - L| < \epsilon$$

Other than that, it helps if you did calculus in high school, but the questions might be trickier.

3.6 PHY180: Classical Mechanics

Physics is basic, you can probably pass the exam if you go into it like... right now?

3.7 ESC102: Praxis II

The teamwork strategies are useful if you want to implement it. Learning to write an RFP is also good. However, the organisation was horrible, and everything I learnt was because I worked with a group and not because of Praxis, i.e. I would learn the same stuff in a design team.

3.8 ESC190: Computer Algorithms and Data Structures

3.9 ESC195: Calculus II

The course starts with integrals and convergence. You learn Taylor series and Fourier series which have many engineering applications. You also learn a bit of vector calculus.

3.10 MAT185: Linear Algebra

Linear algebra is new to everyone, nothing can really prepare you for it. Maybe knowing vectors will help? Try to get a sense of how matrix multiplication work in terms of "combination of rows/columns" instead of a literal: $a_1 \times b_1 + a_2 \times b_2 \ldots$ sense.

At the moment of writing, ChatGPT is still pretty bad with linear algebra, so don't use it for your homework or exams.

You can also drop this course and do MAT223 instead, the ArtSci (Faculty of Arts and Science) equivalent. Again, please check with the EngSci Office before doing that. This EngSci upper year would also like to kindly inform you that the course is garbage. It is boring and covers no new content, so you should not take it unless if it's for free.

3.11   ECE159: Electric Circuits

Circuit is fine. High school stuff (even including AP/IB) probably only covers the first 2-3 weeks maximum.

3.12   MSE160: Molecules & Materials

Don't worry, those courses are mostly: "here's an equation, know where to use them" (stress/strain, bending moments, density...)

Chapter 4

Academics

This is where you can find general academic advice that applies to courses in general.

4.1 Hardest Time of the Year

4.1.1 First Semester

- Pendulum report time, lots of data collection lots of writing
- First midterm (for us it's praxis), lots of "extra" preparation
- CIV bridge (build them early, and you get to watch other people suffer while you sleep :>)
- Most Praxis stuff

4.1.2 Second Semester

- RFP (Praxis)
- Beta (Praxis)
- Showcase (Praxis)
- Handbook/Portfolio (Praxis)
- Yes only Praxis

4.2 Is EngSci stressful/hard?

4.2.1 Andy

It's pretty ok overall, same experience as in high school. Actually most days I am more chill cuz lectures are at 11am-1pm for 2nd semester so I can sleep in... Assignments are fine, course contents take some effort to understand, but once you get it it's pretty chill. I did AP+IB in high school. And I know programming (quite a lot of programming) before uni...

4.2.2 niceguy

It's not too too bad. A bit about my background before that. I lived in Hong Kong up until EngSci, meaning I took the local curriculum and the public exam (HKDSE). This was really helpful for Calculus I and II. I'm not sure about your year, but in our year, we had this thing called UTEA, which is a free course you can do to learn Mathematics, Physics, Chemistry and Coding. That was my first time learning how to code, and I did fine in both coding courses. Praxis was pain though. I feel like as long as you do assignments as they are given out, instead of doing them on the last possible day, you'll be fine. I was definitely NOT studying 3 nights a week, and I still did fine, apart from Praxis, but there's not much you can do about that. IMO, spending 3 hours versus 1 hour on an essay makes no difference in terms of marks, but the former makes you feel more like a failure, which is a feeling you'll get used to soon.

4.3 Notes

xueqilin.me

4.4 Is IB/AP enough preparation?

IB/AP will definitely help make everything easier. However, the courses are planned in a way you will understand even if you know basically NOTHING...

4.5 Accommodations

4.5.1 Petitions

This is not an official UofT website telling you "it's okay to submit petitions". Submitting petitions is actually okay. In my year, people were submitting petitions left and right during midterm season for their lab reports. I've seen people with high 80 averages submitting petitions. Your mental health is more important, and have faith in the curve.

  Stuff you can petition for via the Engineering Portal: All deliverables (assignments, lab reports, etc) and assessments (quizzes, midterms, finals). It doesn't matter if you're just too busy to prepare for it, or if you're just sick. At this time, you don't need to provide proof of illness. It is rumoured that you get one freebie for sleeping through assessments.

4.6 PEY

You pay for the hopes of getting a job.

4.7 More about Courses

4.7.1 UofT Time

You have probably heard of this before, but lectures, tutorials, and practicals all start 10 minutes after. **This does not apply to midterms and exams.**

4.7.2 Notetaking

Obviously I am biased. I prefer LaTeX for the more mathy courses, and Markdown for the rest. I know a lot of people take notes on their tablets using apps such as OneNote, Notability, Notion, etc. You can also download and annotate lecture slides directly. A third possibility is to take notes on paper. The advantages are that you never run into technical difficulties, though it might be harder to organise your notes and search for what you need.

   If you think you are really good at taking notes, consider being a volunteer notetaker! You can then share your notes with those who registered for accessibility services.

4.7.3 Summer Courses

This is a great way to lighten your courseload. Check to see if you can drop courses during the term and take a similar/the same course in the summer. However, you can't do this for every course, e.g. ESC194/ESC195. You will also have to pay extra for summer courses. The nice thing about UofT is that starting second year, you can overload, meaning you can take more courses than necessary, for free! Some 2T4s (whose names shall not be mentioned) were mad enough to take 8 courses in second year. So now nobody else is allowed to (thanks). But you can take 1 extra course, i.e. 7 courses and second year, and in third year and beyond, a maximum of 4.25 credits, or 8.5 courses per semester. Some courses such as seminars count as half-courses. UofT doesn't care about conflicts too, so it is okay to take two courses that have lectures/tutorials at the same time. This is really cool.

Chapter 5

Buildings

5.1 Bahen

If you don't pronounce it as BAY-hen, you're cringe. This is where the EngSci Common room is located (on the second floor). There are two main lecture halls on the first floor, BA1130 and BA1160, where outlets are located on the first/second row, and at the very back. There are tutorial rooms on the second floor, but there aren't that many outlets there, so you'll have to fight for good spots if you need it. The washrooms switch spots between floors, so don't go into the wrong one. The Wi-Fi here is good until it isn't. Note that CS and ECE students frequent this building, so make sure you're not sitting next to someone who hasn't showered.

5.2 Myhal

On the first floor, there is a big lecture hall called MY150. It supports interactive learning or something, cause students sit around tables and stuff, and each table has a microphone, so you can easily speak to the whole class. There is at least one outlet per seat. You have Praxis lectures here. On the third and fourth floor, you'll find tutorial rooms, with tall tables, which are cool. There are more than enough outlets connected to each table, but you'll have to plug the table to an outlet on the ground, which might not work. This is where you have Praxis

studios, and sometimes tutorials for other courses. Finally, there's the Light Fabrication Facility, usually called MyFab, on the fourth floor. You can do 3D printing here and build your prototypes for design teams, Praxis courses, or just for fun! However, you will have to do safety training beforehand to access this lab.

5.3 Sandford Fleming

There's more (smelly) stuff here. In the basement, there's the Pit which occasionally reeks. You can eat here, but spots do be filling up during lunch hours. Otherwise you should be fine. You can get food from Veda and the Hard Hat Cafe located on the same floor. On Friday nights, there is Suds, which is something I'd attend if I had friends. On the first floor, you get the lecture halls SF1101 and SF1105. There are outlets beneath your seats in SF1101 only. There are also two ECF labs (Linux), SF1012 and SF1013 with two printers each. SF1013 is bigger with more computers and a colour printer. On the second floor there's the Engineering and CS library, where you can book study rooms. I haven't done it personally (people only book rooms to study with their friends), but hopefully there are more spots since only Engineers and CS students can book them? It is also (probably) the closest library if you're in an Engineering building.

    If you come here on weekends, there is only this one weird door which opens. I won't bother explaining where it is cause I'm bad at that, and they post maps everywhere.

5.4 Galbraith

It is connected to Sandford Fleming inside, which is something you can use strategically in the winter. You get windows ECF labs here, and you also have CIV tutorials here. It sometimes smells. If you're into it, there's also a skate park located conveniently outside.

5.5 Libraries

You can borrow up to 50 books with a 14 day loan period, which auto renews if possible, so you don't pay a fine. In select libraries, you can also find

- Windows Laptops/Chromebooks
- Tablets
- Charging Cables
- AV equipment
- Video games and Board games

Other than that, you can book study rooms in libraries, so you can study and have team meetings with your friends $\in \mathbb{C}\backslash\mathbb{R}$.

5.5.1 Gerstein Science Information Centre

This is where you study with your friends outside of Engineering, if you have them. It closes pretty early though, at 23:00 on Mondays to Thursdays and 22:00 otherwise.

5.5.2 Robarts Library

Pronounced ROW-barts. This is where you study with your friends outside of Engineering, if you have them. There is also Robarts Commons which is open 24-hours, and the drama never stops! If you're learning different languages, or if you're Chinese/Japanese/Korean and not illiterate, you can get books written in better languages (not English) in the East Asian library.

5.6 Sports and Recreation

5.6.1 Athletics Centre

Stuff you can find here:

- Gymnasium

- Basketball Court

- Badminton Court

- Squash Court

- Table Tennis Court

- Swimming Pool

- Dance Studio

Chapter 6

UofT

6.1 Internationals

I will add stuff later (read: never), but for now, check out the Centre for International Experience website! Personally, I think the UofT Roadmap is a good resource that summarises what you have to do from pre-arrival (what documents to get, what things to buy) to transitioning into university and all the way to transitioning out upon graduation!

6.2 T-Card

Your T-Card is your Student ID in UofT. You need it for identification purposes for midterms and exams, and to access University facilities, such as libraries, ECF Labs, the Common Room, Sports facilities, etc. Get yours as soon as possible.

6.3 Food

6.3.1 If you have a meal plan

Chestnut, New College

6.3.2 Food Trucks

The Green, Blue, and Pink food trucks all pretty good.

- Green: Shawarma wraps, pretty good

- Blue: Poutines (Pretty large) (In case you don't know what poutines are: Cheese on fries with hot gravy to "melt" the cheese). They have bacon poutines/chicken poutines/other...

- Pink: A very "Chinese" food truck, mostly chicken. They have popcorn chicken/burgers... Takoyaki... and rice

6.3.3 Spadina

There are a lot of good and cheap Chinese food here, as well as grocery stores. There is a Burger King and Popeyes nearby.

6.3.4 College

6.3.5 Coffee

There is a Second Cup in Myhal second floor. There is also a Starbucks on College opposite to St. George.

6.3.6 Groceries

Hua Sheng (華盛) on Spadina, Lucky Moose (金牛城) on Dundas.

Chapter 7

Residences

7.1   Chestnut or Campus One?

Chestnut has the advantage of:

1. Cheaper (slightly)

    • Chestnut is $1700 per month, not including the meal plan
    • Campus One is around $1600-$1900 a month, but you get your own room

2. Community

    • Lots of Engineering/EngSci students live in Chestnut
    • Campus One has a few Engineering students, but they are not the majority

 Campus One has the advantage of:

1. Better Stuff

    • Chestnut is old, lots of stuff are old

2. Closer to Campus

    • Chestnut is about a 20-minute walk away from campus
    • Campus One is about a 5-minute walk away from campus

Chapter 8

Social

This page summarises all the fun social stuff you can do in EngSci!

8.1   10 Things to Do in EngSci

Someone with a higher GPA than me generously offered these wise words

1. Lower your expectations.

2. Abandon all hope.

3. Say goodbye to your social life.

4. Say hello to anxiety, depression, whatever mental issues there are.

5. Reconsider your life choices.

6. Why are you even here?

7. Why are you doing this to yourself?

8. No, seriously, like, why do you hate yourself so much?

9. Be crushed by the weight of your horrible life choices and the realization that life only goes downhill from here.

Chapter 9

Memorable Quotes

1. there are 2 stages in life. When you're in highschool, you say "i can't believe it's only a tuesday or a wednesday. it totally feels like a friday... why can't it be the weekend already". When you're in eng sci, you say "thank FUCK it's a tuesday i can't get half this shit done by next monday, every sleeping hour is a resource which i must abuse"

2. If I don't get this pendulum done by Friday, I'll hang myself at the praxis lecture room and BE the pendulum

3. bro just like how home is where ur family is, Praxis is where Bobbert is, if there is no Bobbert, then it ain't Praxis to me

4. me when boofmeister is doing the nerve impulse demonstration and i run down and hook him up to a car battery

5. perhaps if you had a fried egg and rice it would be easier for you to apply reflexive principalism

6. Don't worry, it is never too late to switch programs!

7. When there are more than 50 messages in a channel, I know something is due