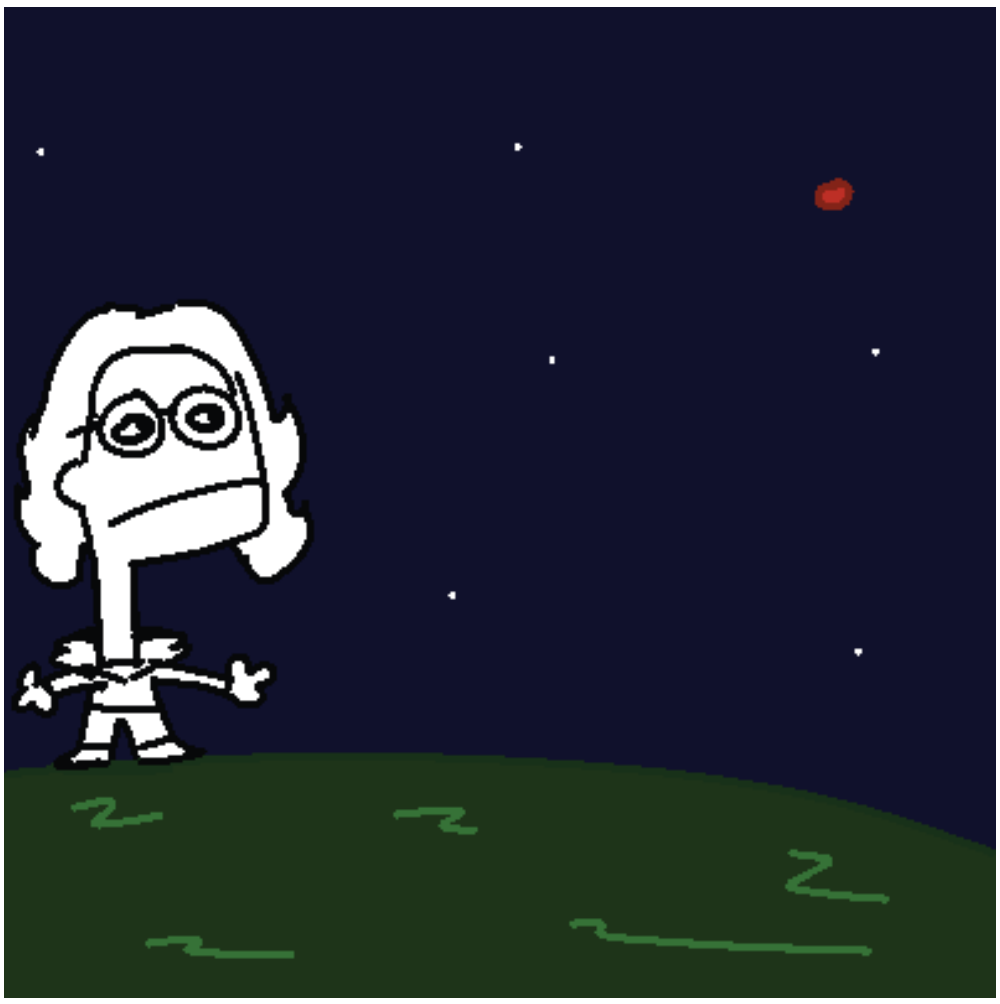
The Iron Times

WRITTEN BY C-ENG, FOR C-ENG

VOL XXVII, Issue I | www.mycses.ca/iron-times | SEPTEMBER 2026

CAN WE PLEASE JUST GO TO MARS ALREADY?

One Day I'll Be Up There



Declan Bédard-Piché
Astrophysics III

Go ask your parents when they thought we would send humans to Mars. You're likely to get a response along the lines of "Oh, I thought we'd be there by now!", which is funny because we've been "10 years away" from a manned Mars mission for something around sixty years now!

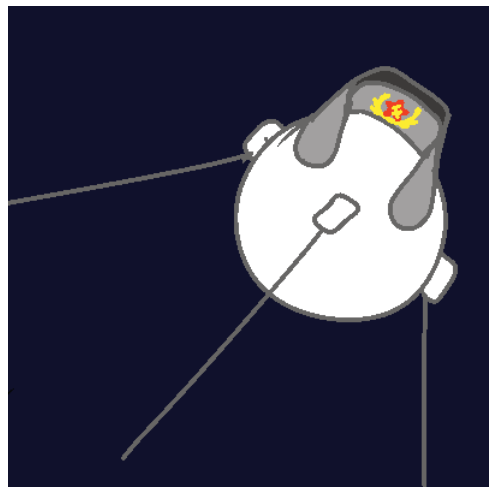
No, I'm not talking about hindsight. Every generation seems to have believed that we would have witnessed the first steps on Mars by now. However! Each generation had a plan that seemed juuuust plausible to believe. Sometimes from NASA themselves and sometimes from aerospace companies who thought they had the gusto to finally crack the code. All these futile attempts had one thing in common; and that is the single assumption that "Mars is just around the corner!"

First, to see our endless blunders as a spacefaring species, we must go back to our favourite German-American aerospace engineer, who, was known for just rockets and definitely not for anything else. Picture this. 1952! Queen Elizabeth has just ascended the throne, and you're sitting in your leather armchair staring at your brand-spanking-new cathode-ray television surrounded by tacky wallpaper and certainly a healthy amount of asbestos. Satellites? What are those? All we have are repurposed missiles! We've barely gone beyond Earth's own atmosphere, and of course we need to take the logical next step.

Which, naturally, is a crewed mission to Mars, a whole 255 million kilometres away. Enter Wernher von Braun. He had just published The Mars Project: which was one of the first serious engineering studies into sending humans to the Red Planet. An actual mathematics-backed proposal! All the bells and whistles! Trajectories, spacecraft designs, orbital rendezvous! Enough to make it believable that it was a 'when' rather than an 'if.'

The plan itself was admittedly a little ambitious. Von Braun proposed to launch ten spacecraft into Earth orbit, assembling them into a massive interstellar fleet, loading roughly seventy astronauts onboard, and then shipping them away to Mars. Now, before you write Von Braun off for being completely insane (though, it wouldn't be out of the realm of possibility), it's worth remembering the time this was proposed. Just forty-nine years earlier, the Wright brothers barely managed to keep a glorified kite in the air for twelve seconds. And since then, humanity had fought two world wars, invented jet aircraft, harnessed the power of nuclear energy, and were rapidly developing ballistic missiles capable of crossing continents.

Continued on page 2.



Communism's cutest creature

Disclaimer: This publication may contain offensive, silly and perhaps even goofy material and should not be read by future employers or anyone else who doesn't fw the vibe. As well, the content in this publication does not reflect the views of the Carleton Student Engineering Society or any of its affiliates. If you've got any problems with this publication first address why you're being a hater. But anyways if y'all got any concerns, questions, comments, compliments, or deep dark secrets you wanna share with us or with chat, you can email us at editors@cses.carleton.ca or reach out to us on social media @TheIronTimes.

Read on,
I dare you

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AND SO MUCH MORE!

WAKE ME UP EDITION

Welcome, gamers, to the first page of the first issue of the twenty-seventh volume of the Carleton Engineering newspaper the Iron Times! I hope you like the new front page design

CAN WE PLEASE JUST GO TO MARS ALREADY?



Declan Bédard-Piché
Astrophysics III

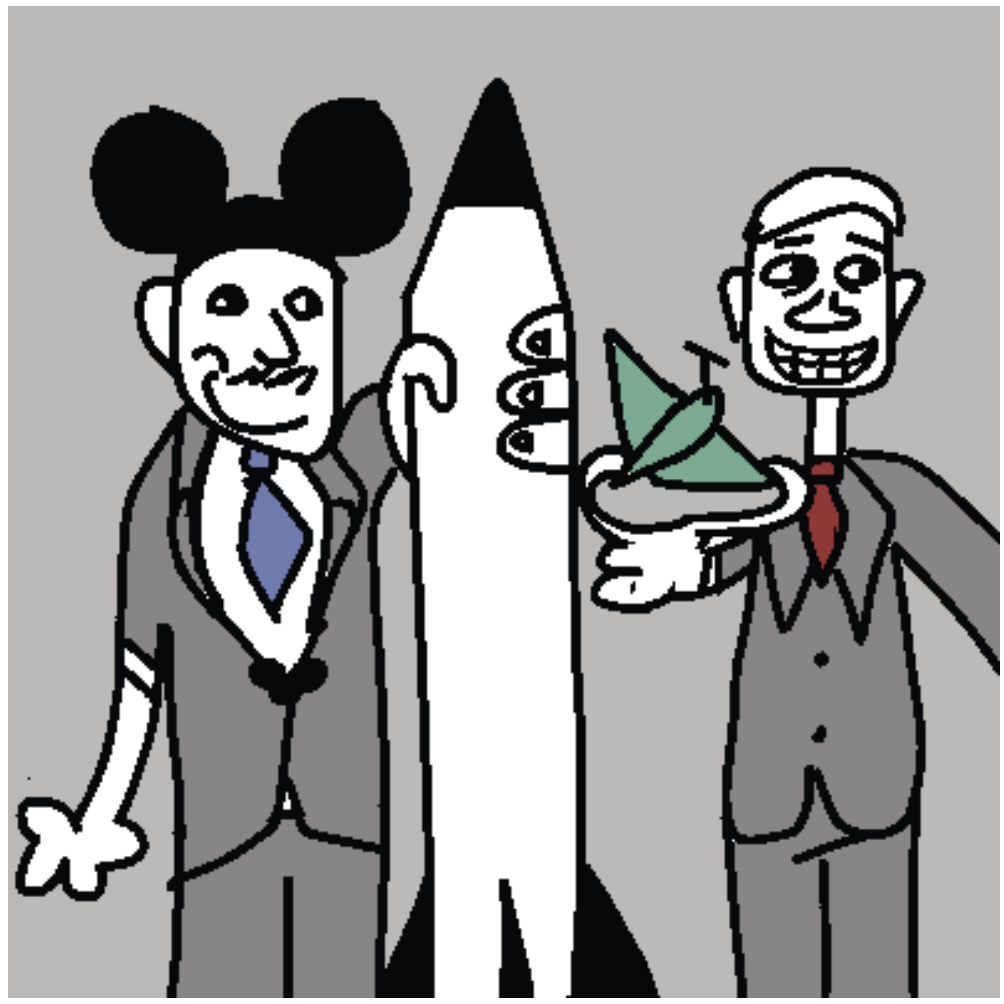
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Technology was advancing at an astonishing rate, so asking someone from 1952 when they thought humans would reach Mars, "within thirty years" wouldn't have sounded unreasonable. The problem was, just as other technologies matured at a rate that could put Silicon Valley to shame, it could be assumed that rocketry would follow a similar trajectory, much like aviation.

Excepttt... they didn't. Rockets remained horribly expensive, every kilogram launched cost a king's ransom (est $980,000USD per kg, adjusted for inflation). So, our ever-so-ambitious plans to Mars were defeated by budgets and had to be put on hold. For now.

Give-or-take a decade or two and humanity actually pulled it off. Not Mars, mind you. The Moon. Apollo 11 had landed at the Sea of Tranquility on July 20th 1969. Less than seventeen years after The Mars Project we had gone from an empty Low Earth Orbit to planting our feet on a new celestial body. And naturally, it only seemed like we would keep going and that Mars would surely be next!

NASA certainly thought so, at least. The Apollo Program was meant to be our entry into the cosmos. Plans for permanent lunar bases, space stations, reusable shuttles, nuclear powered spacecraft, and – of course – a crewed expedition to Mars all cropped up within the decade as our next steps within space.



Based on actual image of Walt Disney touching on von Braun's mouskatool

There was just one tiny problem. You see, the United States had landed on the moon, beating the Soviets and fulfilling the original mission plan behind all the Apollo Program.

And with the Space Race over, convincing Congress to write increasingly enormous cheques for increasingly ambitious space missions became... difficult. You see, Apollo wasn't really about the Moon. Well, it was, but only in the sense that the Moon happened to be where the United States could most effectively get a leg up on their sworn enemy: communism. The Space Race was a race to prove which superpower had the superior technology, industry, and most importantly, ideology. Once Armstrong planted the Stars and Stripes in the lunar regolith, it was effectively over, with the United States being the victor. Congress had its victory.

NASA had other ideas. They envisioned the Moon as the first stepping stone in their quest to conquer the greater Solar System. The Apollo Applications Program proposed using surplus Saturn V rockets to build space stations in Earth's orbit (We got Skylab, so it wasn't a complete failure!), extend moon missions, and generally make sure that all those sweet, sweet taxpayer dollars didn't end up as only museum exhibits quite so quickly. Von Braun was already drawing up plans for Mars missions in the 1980s, and Project NERVA was testing nuclear rocket engines that promised to cut travel times significantly. By this point, even for a brief, glorious moment, it seemed like humanity had escaped Earth's gravity for good.

But thirty years ago, our good old friend Harry Truman wanted to stop communism for good. The United States had a war to fight. Vietnam was expensive. Inflation was expensive.

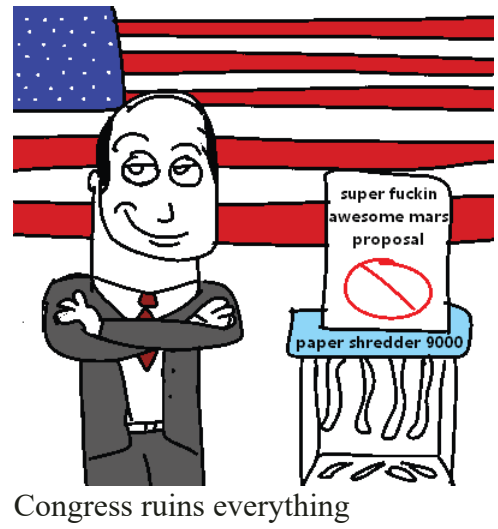
Maintaining Apollo was expensive. Going to Mars was very expensive. Congress took one good look at NASA's Christmas list, then the federal budget, did a couple of double-takes, and decided that sending humans to other planets could wait until after the war. And then one by one, things began to be mothballed. nuclear rockets? Gone. More Apollo missions? Gone. The permanent lunar bases? Gone. Mars? Still only ten years away!

Next up, 1989. The Cold War was winding down and President George H. W. Bush stood on the steps of the National Air and Space Museum to unveil the Space Exploration Initiative. It was new and ambitious! Return to the moon, establish a permanent human presence there, and then push onward to Mars! A never-before-seen plan destined for greatness.

NASA got to work almost immediately: enough reports and planning to make a grad student weep. A sensible plan for sensible people! If those sensible people had several billion dollars lying around. Congress took one look at the number, and the initiative quietly withered away.

NASA got the message. Under administrator Dan Goldin, the agency pivoted toward his new mantra of "Faster, Better, Cheaper." Effectively ending the era of colossal Apollo-style ambitious plans. Then in 1990, aerospace engineer Robert Zubrin looked at NASA's increasingly elaborate Mars proposals and asked "Okay, so... Have you considered not doing any of this?" and came up with his own version. His proposal, aptly named Mars Direct, was refreshingly straightforward. Forget assembling huge fleets in Earth orbit. Launch. Land. Make your fuel on Mars. Haul your new red rocks home. Simple!

The key behind Mars Direct was something called in-situ resource utilization, or ISRU. Rather than hauling every last drop of return fuel from Earth, a prospect as financially appealing as mailing gold bars by



Congress ruins everything

CAN WE PLEASE JUST GO TO MARS ALREADY?

courier, the mission would manufacture methane and oxygen directly on the Martian surface using carbon dioxide from the atmosphere. Wow! A way to make Mars much cheaper than before! In the end, Mars Direct was never built, but its influence was enormous. Even today you'll find pieces of Zubrin's proposal scattered throughout modern Mars architecture from NASA and SpaceX. We still didn't go, though. Mars was still ten years away.

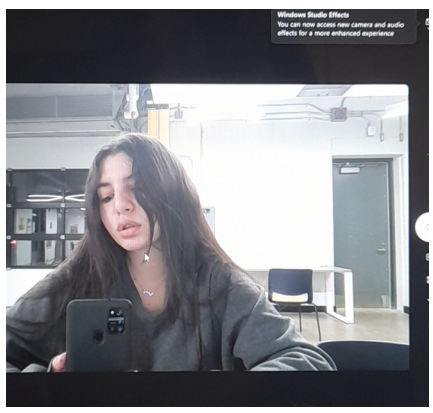
Today, however. It feels a little different. For the last fifty years, Mars proposals have been all about how do we go about getting there, but now we have people asking how do we make going to Mars cheap? Sounds like a minor distinction, but it changes a lot. Take SpaceX's Starship for example. Love it or hate it, it's attempting to make launch costs so low through reusability that sending hundreds of tonnes of cargo into orbit can become almost routine. Whether it succeeds remains to be seen – and spaceflight has an impressive habit of humbling the overconfident.

The same is true elsewhere. NASA's Artemis program isn't a race to the moon this time (mainly), it's an attempt to gain experience operating beyond Low Earth Orbit. China has similarly ambitious plans for a long-term lunar presence. For the first time in decades, multiple nations and companies are tackling different pieces of the same puzzle at the same time. Something not seen since Apollo. And maybe, just maybe this time will be different.

So, go ask your parents again when they thought we would send humans to Mars. After they make fun of you for asking the same question twice, reconsider for a moment that they had every reason to believe that it would've happened by now. Every generation has looked at the rockets of their day and thought that they were good enough. Every generation has watched incredible technological leaps and assumed that the next great leap would be across interplanetary space. For sixty years we've been just one decade away from Mars.

Every cancelled program has inspired another. Every failed proposal has been picked back up, improved, and reimagined by the new generation of engineers. Despite all of it, we keep trying. And we (students who are interested in aerospace) have the power to make it happen for good and break the cycle. Or maybe, sixty years from now, someone else will be writing about Mars and will be asking the exact same question: "Can we please just go to Mars already?"

WHY PINK FLOYD?



Hayat Soufan
SREE A III

Growing up with an ultra Pink Floyd superfan dad made loving them very easy and it came naturally no questions asked. This summer, while listening to them with someone that was a bit unfamiliar with their sound, the question of "How on earth did they become commercial?" was brought up and it got me thinking about how despite how odd and experimental their music was, they still had their first single to be top ten in the UK within the blink of an eye and their popularity skyrocketed ever since. But why? Out of all artists that were playing at the UFO club in the 60s, why Pink Floyd?

To understand Pink Floyd, you need to know their history, which is divided into five major eras: the Syd Barrett era, the experimental era, the Roger Waters era, the final cut era and finally the "post-Waters" era. Initially, the band was made up of three architecture students and an art student; Syd Barrett for lead guitar, Roger Waters for bass, Nick Mason for drums and Richard Wright for keyboards. The name of the band comes from Syd Barrett's favorite blues artists, Pink Anderson and Floyd Council. Barrett was the backbone of the music, he was the lyrical genius that launched the band's career, but soon after had to step down. After Barrett leaving, David Gilmour, the known voice for Pink Floyd, stepped up and replaced him. During this time, the band started experimenting which led to Echoes. Echoes was the track that made the band members realize what Pink Floyd is really about, it is the track that led to The Dark Side of the Moon. After Echoes, Roger Waters' creativity peaked and the band's golden era had started, that is when we got albums like Animals, The Wall and The Dark Side of the Moon. Despite their success, in the 80s, the band broke up, losing a key member once again. Later on, David Gilmour, Nick Mason and Richard Wright reunited in a studio and released A Momentary Lapse of Reason, The Division Bell and The Endless River. I could go into more details about their history and gossip, but that is for a different day.

Considering what their most popular albums offered, Pink Floyd basically made their own genre. Animals was referencing George Orwell's Animal Farm that still hauntingly applies almost 50 years later. The Dark Side of the Moon sets you to a spiritual-like journey where it is dark but at the same time relatable and understandable by all kinds of people of all ages (Fun fact: DSOTM synchronizes with The Wizard of Oz if you play the album on the third MGM lion roar). Wish You Were Here captured missing a loss so perfectly and The Wall was basically the flawless rebellion that captured isolation and alienation (says the person that enjoyed being another brick in the British Council's wall). The list goes on and on, but what all these albums have in common is their sense of continuity, each track follows its previous track, the album as a whole was telling a story of a specific theme.

The lyrics were harsh but offered theatrical satire blended with sound effects that you would not expect to be in a song like alarm clocks and cartoon noises. Looking at the music itself, it was diverse; one minute you're listening to a piano ballad, the next you're listening to a jazz record then you're listening to some sort of unique psychedelic music all in one track, each minute of each track is so different but somehow relates to its previous and next track creating beautiful chaos. With Roger's witty lyrics and David's vocals and the musicality in the background, they mastered the architecture of the atmosphere (pun intended).

Stepping away from the music and lyrics, they also had visual talent; their album covers, concerts and their music videos depicted their drama and portrayed the stories they were telling, you could feel what they were feeling when producing the tracks. They would send you to a different universe visually.

Maybe the wrong question was asked initially, maybe the real question is why not Pink Floyd? No wonder they became so commercially successful, they are great and their timeless music is the type of music that you do not expect you need. You can magnify each band member's flaws and argue against their actions or argue how weird some tracks get. But let's face it, whenever Pink Floyd got together, even after losing two important members, they produced something hugely impactful that everyone relates to one way or another. Or maybe I am just biased because almost all my special memories were made while I was listening to Pink Floyd. So, my fellow colleagues, go buy that Pink Floyd album and shine on.

PARIS? GAY?? AN INVESTIGATION

The Fight For Adam and Yves



Axel "Shepherd" Hacker
WGST/INDG IV

This summer I visited Paris for a week; seeing the normal touristy stuff, Eiffel Tower, Louvre, and the Arc de Triomphe, but more importantly I got a 1-1 tour of gay Paris. Naturally, I had to spread my knowledge to you (the little gay people reading my newspaper).

Firstly, this was a tour of a specific neighbourhood in Paris, the Marais. The Marais is a historical gay neighbourhood, so lots of gay bars, queer organisations, and more! We started off our tour at la Place des Voges, which was created for Louis the 13th after his engagement to Anne of Austria. Louis was apparently suspected of being gay because of his close relationships with two other dudes instead of his wife (which is like, totally DL behaviour for the time). He literally only saw his wife at official events, and had to be bullied into boning his wife by his boys (Marquis de Cinq Mars and Duc de Luynes). So like, totally gay.

But that's not the only gay royal we talked about, Henry the 3rd was also suspected to be gay, he was the last in his dynasty (that means no kids) and had les Mignons (mignons translates to cuties), a group of boys who were favoured by him. They wore makeup and lace, which like, problematic age gap aside (unforch not unusual for the time) also give DL gay vibes.

So these two leave us with a big question, how tf do we know so damn much about these random dudes' sex lives?? The answer; Les Scandaleuses du Marais, they people watched like there's no tomorrow and wrote all of that shit down (yay record keeping).

Interestingly enough these women often hosted orgies at le Hotel de Sens and poisoned people they did not like (iconic). There was also another woman, Madame de Sévigné, who was like the gossip girl of her time. She had a daughter who she wrote to frequently, these letters have all the sweet tea of the time. We have access to them because all of the letters got sold to a publisher (TMZ type shit). Her house is now a museum you can visit!

The gay men were not the only historical french people we suspect of being a lil fruity either, Marie Antoinette was lowkey a lesbian. She hung out with her friends, Princess de Lamballe and the Duchesse de Polignac often and to quote my tour guide; "today we have Kim K, they had Marie Antoinette". So she was observed often, probably why she was convicted, along with her two friends, of sodomy.

Ironically, gay rights advanced quite a bit after the French revolution. Gay sex was fully decriminalized because they thought it was a useless law (win i guess?). Gay rights in Paris were always a bit more ahead of the curve, especially the 4th arrondissement, which has historically been very progressive and even has a sign with dedication to those who have died of AIDS.

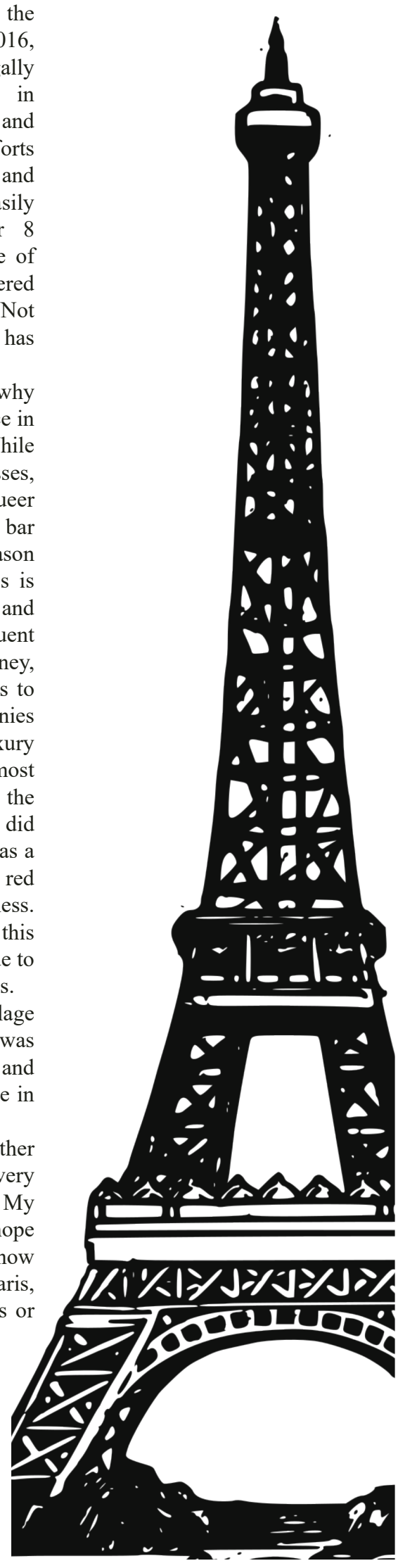
HIV was even discovered in Paris and had many organizations dedicated to fighting HIV/AIDS stigma. One of such cases is when, in 2005, ACT UP activists ran a fake gay marriage in the Notre Dame cathedral. One activist dressed up as a priest and "married" two lesbians (hugely iconic). Another iconic protest took place on December 1st, 1992 (international HIV/AIDS day), where activists placed a giant condom on the obelisk at Place de la Concorde.

Christiane Taubira, the minister of justice in 2012 to 2016, spearheaded efforts to legally recognize slavery (succeeded in 2001) and legalized adoption and marriage for gay couples. Her efforts to legalize gay marriage and adooptions didn't go through easily though, protests went on for 8 months, carefully toeing the line of what is legally considered homophobia. Signs included "Not Adam and Yves" 💀💀. Paris has also had a gay mayor in the past!

This history in Paris is why the gays have such a firm presence in the gaybourhood (Marais). While today there are less gay businesses, we did see a few gay bars, queer organizations, and even a lesbian bar (more on that later). The reason there's a decline in gay business is because of raising costs. Local and tourist gays would frequent buisnesses and spend lots of money, making the businesses raise costs to keep up with demand. Companies like BHV even became a luxury brand, killing their business almost completely, until they became the first irl Shein store, which fully did them in. The gaybourhood also has a dedicated pharmacy, which has a red ribbon for HIV/AIDS awareness. Gay men would come to this pharmacy for HIV related care due to discrimination at other pharmacies.

The lesbian bar, Le Village Bar (now called Elles Bar), was actually the first gay bar in Paris, and it still exists today (after a change in ownership)!

I learned about a few other historical icons but tbh this is very long already, so I'll cut it here. My tour was really interesting, so I hope you guys got a taste of the lore I now know! If you're ever in Paris, consider checking out the Marais or taking a gay tour yourself ♥



WE TRIED RING FIT ADVENTURE

So You Don't Have To



Mia "Wrong Parts Included" Cornell
ELEC IV

Gaming Profile:
- Adventure
- RPG
- E-sports
- Cozy/relaxing
- PC/Mobile games
- Beginner



Axel "Shepherd" Hacker
WGST/INDG IV

Gaming Profile:
- Puzzle
- RPG
- Adventure
- Open World
- Nintendo on top
- Gaming for 14 years 😎

This summer we have locked into playing games together, and so we have decided to impart our knowledge onto you, the experienced who want to try a new game and the newbies who want to start getting into games!

Ring Fit Adventure is only available to play on the Switch, and you'llneed the game, the Ring-Con, and the leg strap. So if you're hoping to buy the game second hand, you'll need to make sure you have at minimum a Ring-Con and the game (you can diy the leg strap; anything that will hold the Joy-Con in place on your thigh will do). Brand new will run you back 100$ on top of the cost of the actual Switch, which, by the way, you'll need either an OG Switch or OLED, as you need detachable Joy-Cons that can attach to the rail system used by the Ring-Con (well technically you can pair Joy-Cons to a Switch 2, but trust, I've tried and it's really annoying)

The game's premise is pretty simple; you are just some dude who happened to stumble into Ring (your companion) sealing away the evil Drageaux. Like the idiot we are, we decide to release the evil mysterious voice from its prison and now must hunt him down world by world like Mario Bros. To defeat Drageaux, you must run, jump, and exercise your way through various terrain and enemies. During battles, you can select different exercises to attack, with different categories being stronger against enemies of the same type. Attack types are broken into 4 categories: Abs, Arms, Legs, and Yoga.

Now you may be thinking this game is kind of expensive for what is essentially a more gamified Wii Fit, but you'd be (surprisingly) wrong! My personal file, despite sinking a decent amount of time (~30 hours), has not even finished a quarter of the game. That's before taking into consideration the minigames outside of the story mode and the replayability of most of the levels. So imo well worth it $/playable hours wise.

Gameplay

Axel: I find the gameplay very fun and actually really engaging. Despite being a Nintendo game, I'd actually say most adults sans kids would enjoy playing this and not have any issues with it being too hard or too easy. Personally, I enjoy games that I can just pick up and play without worrying about that one really hard boss battle or needing to, like, actually lock in to beat it, so this game was great to still get that RPG feel without needing to understand a lot of lore or complex controls to succeed. The game is generally pretty forgiving, even in boss battles, in letting you win, though. If you like the threat of having to reset AGAIN after a 20-minute fight, this one may not be for you. Difficulty level ranges from 1-30, but only changes physical difficulty; the base game never changes outside of additional reps to attack. Another nice feature of this game is its adaptability. If you can't do a certain move or need to sit down to play, they have a few settings to accommodate, on top of being able to cheese the sensors relatively easily. Ring does frequent reminders to hydrate and take a break, if you struggle to remember to drink water and not go too hard! The one thing I don't like with this game is not being able to play for crazy long bursts; the game kind of succeeds too well in the sense that the exercises and running are like...actually a really good workout. I find it difficult to play non-stop for longer than like 2 hours at a time, so if your style is more brain rot for 16 hours straight, perhaps not going to top your favourite games.

Mia: The reason I wanted to start playing this game wasn't just because of gaming. It also had to do with the fact that I was working from home and I noticed that I wasn't as active as I wanted to be. Working from home is great, but you sit a LOT. That is something I'm still trying to overcome. Axel then recommended we try Ring-Fit because of its focus on exercise.

As a beginner, I really liked how easy the instructions were and how relaxed the plot is. I can leave the game for a while and come back and not be lost/forget the objective of the game. I like how interactive it is, which is partially because of the Joy-Cons. The graphics and art style are friendly to the eyes, and there isn't much going on, so you can really focus on gameplay. I like all the funny characters and that you can really tailor the game to how intense you want it to be. The levels are not too long, and you have breaks in between.

As previously mentioned, I wanted this game to help me work out. As someone who likes to go to the gym, I can safely say that this is a great alternative to get your body moving. No, you are not gonna magically gain a six-pack, but I will say it's a great alternative if you don't have time to drive to a gym, or feel lazy and want to stay home. You can really increase the reps or difficulty, so you can really make this game work you out. I especially like the feature where it's not just the main storyline, but the mini-games. I really like how quick and fast the minigames are, and you can compete with friends. I almost like the minigames more than the real game! The minigames are mostly focused on how many X you can do in X amount of time. I liked the minigames as they are quick (you can do lots of them in a shorter amount of time), and I noticed that they challenge me more than the regular gameplay.

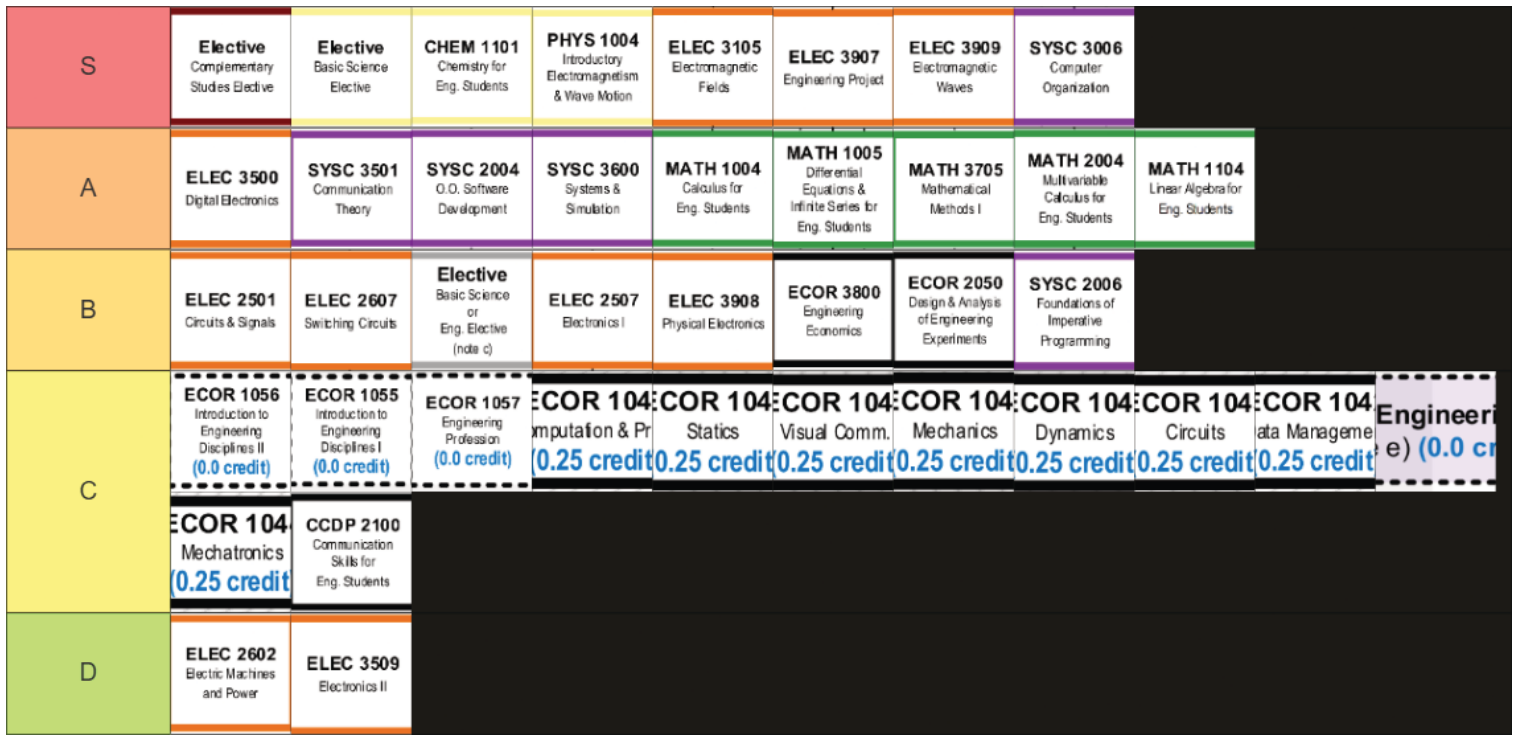
Overall, this is a great game for people who like interactive games with a storytelling element, but may only play a few times in a month. You won't get lost in the plot, and every time you go back, it accounts for the time you are away (it won't increase the difficulty). This is fun to play with friends, and if you play with friends, you can take turns so you don't get too tired!

SO YOUR AN ELECTRICAL ENGINEER...

Now What?



Mia "Wrong Parts Included" Cornell
ELEC IV



So you're studying electrical engineering… Now what? My name is Mia, and I am going into my fourth-year of Electrical Engineering!!! After being here for so long, I have come to notice that electrical engineers are far and few… And more specifically, it is really hard to find anyone, especially upper-year support for all programs under the Department of Electronics! So, to solve this issue, I have decided to extend my knowledge to those who need it most and give you a review of all electrical engineering courses (up to and including third year) as seen on our course tree!

Disclaimer: This is solely my opinion! And my catalogue year is 2023, so if you see courses you don't recognize, it might be because they don't exist anymore. Additionally, the experience you may have in these courses could be different due to course changes/updates and different professors! I will try to be as unbiased as possible.

Academic Help: If you need help in any of these courses, I would love to help! I may or may not have various levels of material for these courses.

I was a TA for ECOR 1032, and ELEC 2501. Additionally, I am heavily involved in DESoc (previous President 25/26) and current VP Academic- you could probably find me around there (if I'm not at work)! Or, you can reach out to my on discord (mydeadassheart #3069).

Here is the layout I will use:

Course Name: The name of the course!
Difficulty: Out of 5, with 1 being easy, 5 being extremely difficult
Interest: Out of 5, with 1 being I didn't enjoy the content, 5 being I loved the content
Notes: Anything else I want to say about the course!

S-Tier
Courses that I loved, were easy, or are incredibly important to your electrical engineering career and I felt the impact of them while during the course!

Elective: CSE
ARTH 1100
Difficulty: 1
Interest: 5
Notes: I loved this course; it was incredibly interesting, and all assignments were straightforward. The only downside (which I found was better) is that the course is mostly memorization and remembering key details of each era. So, if you don't like memorization, then the difficulty could be greater. I WILL be taking part 2 of this course.

Elective: BSE
BIOL 1010
Difficulty: 1
Interest: 4
Notes: Interesting course, where there is no exam and just a bunch of quizzes. I don't remember if they are open-book, but I do remember them being very easy even if you just watched the lecture once. Very good to take alongside other harder courses. The only downside is that it is slightly time-consuming/annoying to have to focus on- I remember lectures feeling very long.

CHEM 1101
Difficulty: 2
Interest: 4
Notes: Mostly a review of high school chemistry (Ontario) with a few additions here and there. Only semi-difficult part is that there are 5000 things to do per lab which I hatdisliked… (pre, post lab quiz, lab report, quiz). Pam Wolf #GOAT. She is amazing, incredibly nice and an amazing prof!!!

PHYS 1004
Difficulty: 4
Interest: 5
Notes: For electrical engineers, I would pay extreme attention to this course! Me doing well in this course paid off in 3rd year in ELEC 3105/3909!!! For me, the learning curve was intense but once I put in the effort, went to office hours, studied hard for quizzes it paid off because my grade was high by the final and the exam wasn't worth much!

ELEC 3105
Difficulty: 3
Interest: 5
Notes: Course is a direct sequel to PHYS 1004! Very easy material to understand. The difficulty comes with just being able to have enough time to do the textbook (Sadiku) problems. If you can do the textbook problems you will do well in this course! Labs are challenging if you don't know how to use ANSYS- so maybe find someone with the models to follow/ watch some tutorials before! But no worries, you can definitely learn it during the semester with ease. Find a lab 'partner' for this course so you can lean on each other.

ELEC 3907
Difficulty: Depends… (see note)
Interest: 5
Notes: This was my favourite 3rd year course. Since this is an engineering project, the difficulty comes with what project you decide to do with your group! For example, my difficulty would probably be a 1 because what I did in my project leaned on my strengths. If you have a good group it definitely decreases

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Now What?

difficulty as well. Overall, I don't think that any project in this course could make the difficulty higher than a 2-3. You need to do written reflections and oral presentations so if you don't like those things, your interest might go down.

ELEC 3909
Difficulty: 4
Interest: 5
Notes: Harder than ELEC 3105 but not by very much. Again, PHYS 1004 and ELEC 3105 build up to this course so if you did okay in those courses, this one will probably be decently easy! The hardest thing was the HFSS assignments!! They were tricky to complete - start them early and you will be able to complete them! The Smith chart looks scary, but don't be scared you will be okay! It's really not as hard as people say. My biggest tip is that if you are in Dr. Winnie Ye's class is to go! She will sometimes give bonus marks by attending. And, she really wants people to succeed - she did a whole class going around to every student to ensure they understood the Smith chart. If you can do the problems in the textbook (Sadiku), you will be fine!!

SYSC 3006
Difficulty: 2
Interest: 5
Notes: So, this course is easy if you understand the control signals well enough! That was the hardest thing; the learning curve figuring out the control signals. But, once I figured out the control signals it was smooth sailing, it definitely wasn't intuitive at first! My tip would be to do labs before class/use the labs as the learning and use the labs to build upon your knowledge- I know that's counterintuitive, but it actually made me learn way more than I would have going to lecture because the lectures weren't as hands on.

A-Tier
Courses that I still loved, but were significantly more challenging to how much impact I felt they had compared to S-Tier courses. These courses may be S-Tier depending on the person.

ELEC 3500
Difficulty: 3
Interest: 4
Notes: The difficulty comes with the labs (especially if you are doing this alongside ELEC 3509) and the learning curve for SystemVerilog is incredibly high in my opinion. The labs take a significant time outside of labs, but you at least get two weeks per labs (mostly). The flow is very similar to ELEC 2607 (you use similar topics but minus the boolean logic review) and if you did well in that course, I can say that you will probably do well in this one. This is an incredibly important course for those interested in FPGA development and testing/verification.

SYSC 3501
Difficulty: 4
Interest: 5
Notes: Very important course for anyone interested in telecommunications, and digital signal processing. The difficulty is in the application of all the math you have learnt up to this point with heavy emphasis on Fourier series/ transform. The good news is that currently there is no exam for this course. The difficulty again, is in understanding. Take advantage of the labs as mark boosters because they are easy (however they are time-consuming).

SYSC 2004
Difficulty: 1
Interest: 4
Notes: I put it as A because of how easy it is compared to SYSC 2006. Also, I like classes where there are many opportunities for bonus marks which this course provides (attendance marks). It is a solid course for someone like myself who didn't know much about OOP- and after all, aren't courses supposed to teach you things you didn't know?

SYSC 3600
Difficulty: 3
Interest: 3
Notes: Take advantage of the labs since you can do them during lab time (they are pretty easy). The difficulty comes with having to learn more mechanical concepts as an electrical engineer (and vice-versa for mech heavy degrees). Also, I thought my MATH 3705 knowledge was stronger than it was by the time the midterm rolled around. So, I'd suggest reviewing Laplace Transforms, and some ODE.

MATH 1004
Difficulty: 2
Interest: 3
Notes: The difficulty in this course comes with this being a first year course (haha). You need to learn the ropes. Do the textbook problems and you'll be fine. This is basically just high school calculus (Ontario). I would say from what I remember it's 60% differentiation, 40% integration. You get an amazing formula sheet on the exam and the multiple choice format is very easy to remember ;).

MATH 3705
Difficulty: 4
Interest: 3
Notes: The difficulty comes with the abstract concepts. Unlike the other courses, this moves away from your calculus you've previously learnt. You learn newer and more important concepts. This is A-Tier because it's not hard to do well. It's the same as any other math course- memorize the important problems, don't worry about the theory or derivation no matter how important the prof tries to make it. Remember you are an engineer, application is what matters.

MATH 2004
Difficulty: 3
Interest: 4
Notes: This is a continuation of all the other calculus courses just with more emphasis on integration and making things 3D. Again, math courses are very formulaic on how to study for them. Take advantage of the multiple choice final ;). A-Tier because this course is really important for ELEC 3105 and ELEC 3909. My tip for this course is to look up graphs/ visualizations of the theorems.

MATH 1104
Difficulty: 3
Interest: 5
Notes: The difficulty from this course comes with the abstraction. Many profs will make this more complex than it is. Once you learn the basics (how to RREF, linear dependency, determinants, and maps), you basically know the entire course. This is the course that made me want to do a minor in Mathematics!

These courses are meh, not good, not bad. They aren't as annoying as the ECORs but are close to being so. They are somewhat challenging compared to the amount that I feel you learn in the course. They do what they need to do and nothing more.

ELEC 2501
Difficulty: 3
Interest: 2
Notes: This course is definitely a step up from first year circuits. Unfortunately, the midterm is usually multiple choice which trips many people up. Thankfully, there are practically millions of examples online for this course (or similar content from other schools). If you are able, simulate results beforehand, and do your labs with a partner.

ELEC 2507
Difficulty: 3
Interest: 4
Notes: The labs in this course are a bit harder than ELEC 2501, but the things you learn are more intuitive (in my opinion). It is very easy to categorize the content into what you need to know.

Continued on page 8.

SO YOUR AN ELECTRICAL ENGINEER...

Now What?



Mia "Wrong Parts Included" Cornell
ELEC IV

Continued from page 7.

ELEC 2607
Difficulty: 4
Interest: 4
Notes: This is one of the more challenging second year courses because low-key nothing really makes sense. I felt like I was making stuff up most of the time. My tip would be to make sure you really really understand FSMs. Boolean logic is something you either know or don't. And if you can, look up some Verilog beforehand as it will save you lab time. Luckily, you can complete labs at home if you have the DOE VPN (highly recommend).

BIOL 1902
Difficulty: 1
Interest: 3
Notes: I didn't like this course as much as my first year biology course, and I found it a bit more challenging to understand. The professor who usually teaches this course is now retired, but he was amazing! (Mike Runtz). He was so passionate about what he did. His passion helped a lot in this course. Thankfully, this course was fully online, but that also meant you needed to find time to do it outside of your other work.

ELEC 3908
Difficulty: 2
Interest: 2
Notes: Maybe if I were an EngPhys this would be higher. It's mostly memorization and knowing what the formulas do. Concepts are easy to remember but the material may be dry for elecs.

ECOR 3800/ECOR 2050
Difficulty: 2
Interest: 3
Notes: Difficulty comes with time that you need to spend. It gets annoying having to focus on this when you want to focus on other things. However, none of the material is hard by any means. Also, the major assessments (midterm/final) will most likely be MCQs which is a bummer because part marks are helpful. My tip is to use the assignments to study- you don't need to study anymore than that to do decently well.

SYSC 2006
Difficulty: 3
Interest: 4
Notes: This course was really challenging for me in the beginning and also to those who may not know C-programming. If you are interested in embedded systems you should try to pay attention to the memory allocation topics even if Python Tutor is annoying as hell. When I did SYSC 3006 it was way easier for me to understand RTL and assembly. The assignments are actually pretty difficult/time-consuming so start them early. Thankfully, you get loads of opportunities for bonus marks.

C-Tier
I put all ECOR XXXX courses in C-Tier because they do what they need to do but are nothing special and are usually kinda annoying. It's just stuff everyone has to go through whether you like it or not.

ECOR 1055, ECOR 1056, ECOR 1057, ECOR 2995
Difficulty: 1
Interest: 1
Notes: These courses are really easy, but also really annoying. The most I got out of this was professor connections. So, if you want to do research in your undergrad/plan to do a masters it can help you start building connections like it did for me. However, the quizzes are annoying. My tip would be to complete all the quizzes (or portfolio assignments) as early as possible so they don't get in the way when the semester ramps up.

ECOR 1041/1042 (1031)
Difficulty: 3
Interest: 4
Notes: As someone who didn't know how to program before, I remember this course being tricky to get the hang of. Thankfully, the midterm and finals usually don't change. The labs are also usually pretty easy and you can complete them day-off.

ECOR 1043/1044 (1032)
Difficulty: 3
Interest: 5
Notes: This course changed a lot since I did it. The hardest part about this course from when I did it was the midterm/exam being hard multiple choice questions. As a TA, I can see that most students struggled in the midterm since it was computational + multiple choice (had a low average). The final however, was easier. In general, labs are easier if you read the manual beforehand

ECOR 1045/1046 (1033)
Difficulty: 3
Interest: 2
Notes: I'm not really interested in this topic, but it was a nice review on 3D vectors. I liked Statics more than Mechanics. Do the textbook problems and you'll be fine.

ECOR 1047/1048 (1034)
Difficulty: 4
Interest: 1
Notes: Yes, this is one of the harder first year courses by far. The reason why it's challenging is because you learn a lot in a little amount of time. I remember we learnt all the coordinate systems really fast and you couldn't digest the material fast enough. However, this may have changed since the 6 week courses ended. I would suggest finding upper year support in this course in CMAS or doing dynamic panic.

CCDP 2100
Difficulty: 3
Interest: 3
Notes: This course was really annoying. I get what it was trying to do. And yes, communication for engineering students is SO important. However, I'm not sure how well it gets that message across. Most of it is more about following rules/ instructions than your writing skills which I find misleading for a comm. course.

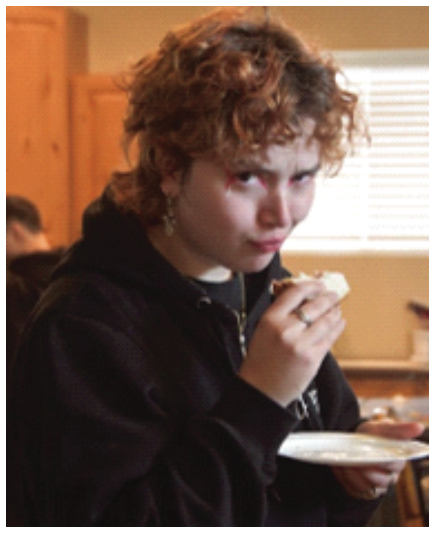
D-Tier
These two courses are pivotal to anyone wanting to do power or analog electronics. They both were extremely challenging and I studied really hard for these courses. However, the good news is that you will survive and your outcome may or may not be Professor dependent.

ELEC 2602
Difficulty: 4
Interest: 1
Notes: From what I've been told by my peers, this course has gotten extremely better since I did it. The midterm last year was pretty easy and the final was fair. The labs (from what I've heard) have gotten better/shorter. When I did this course the labs were brutal and the software didn't work. And, the midterm and final were really challenging. Do previous examples and you may survive.

ELEC 3509
Difficulty: 5
Interest: 4
Notes: This is by far the most difficult course I've taken in my degree. This course will drag you through the mud. Find people in your class and lean on friends to do the labs together because you won't see your non-elec friends, family, or roommates that much during this course. There is light at the end of the tunnel and this course, when completed, is incredibly rewarding and you learn SO much.

BATTLE OF THE ROVERS

Eileen vs NASA



Jack Tremblay-Lessard
AERO C IV

It's a new year, and the Carleton Planetary Robotics Team is once again gearing up to make a state of the art Mars rover. You've heard of Perseverance, Curiosity, Opportunity, all the great rovers of the Red Planet. You might have also heard of Eileen (she lean), the famous CPRT rover. And while you may think that those big rovers are better because they've been to Mars, none of them placed 21st at an undergraduate rover competition. Today, we settle once and for all the question we are all asking: who is better, Eileen or the greats? They will be judged on 7 criteria: traversability, robustness, life detection capabilities, aesthetics, dexterity, Mars-readiness, and lifespan.

Traversability:

All rovers have to traverse difficult and rocky terrain to complete their missions. Curiosity could take on angles of up to 50 degrees while keeping itself flatly grounded, while Eileen has the uncanny ability to tilt herself 50 degrees while on completely flat ground (she lean). That's a point for NASA.



Robustness:

Due to unforeseen circumstances (reckless operators) she has flipped not once, not twice, but three times, and run into countless walls, bushes, and people (RIP Helena). And yet (even though she lean (and has lost a wheel twice)), she still lives. A little sand took both Opportunity and Spirit for good, so that's a point to Eileen.

Life detection capabilities:

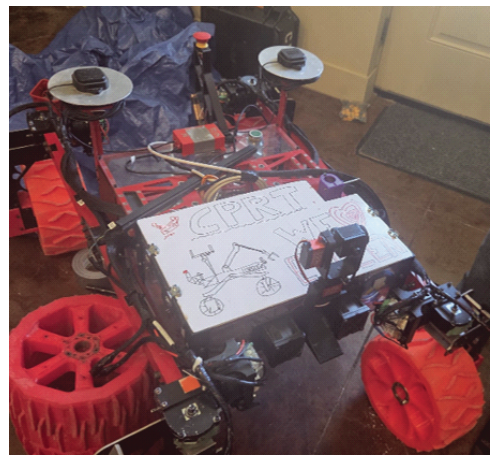
Every Mars rover sent to the Red Planet has been looking for one main thing: signs of life. They've found ice, evidence of lakes and flowing rovers, organic molecules, and yet, no definitive sign of life, past or present. Eileen, however, discovers life on every single mission she goes on; she has brought back liveable soil, definitive signs of life, as well as a moth and two ladybugs. Point to Eileen.



Aesthetics:

Eileen is entirely red, even though our team colours are orange, because "it's close enough". Although masterful artists have worked on the cover art (see photo), it is hard to beat the wheels that literally spell "JPL" in the soil in morse code that Curiosity has. Sorry Owen. Point to NASA.





Dexterity:

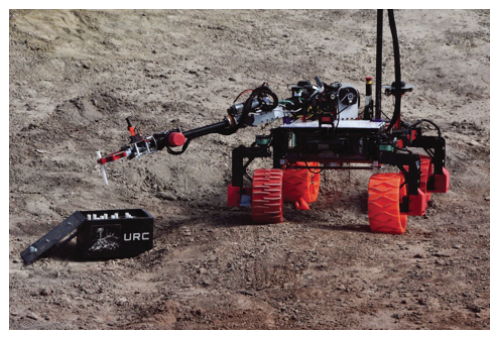
While I am sure the NASA engineers worked very hard on making their robotics arm dexterous, who are we to tell if it can really perform in any situation? Unlike the big shots, Eileen is dexterous:

> In scientific operations (life detection)

> In the field (has operated a vending machine before)

> In the kitchen (recipes include wings with a Red Bull marinade and an expo marker hot dog)

> In a high stakes heist in which she had to retrieve a precious artefact from a nefarious museum (pretty self-explanatory). Point to Eileen.



Mars-readiness:

Mars rovers need to be able to withstand extreme temperature swings, from 30C to -90C. They need to survive every weather, the terrain, the winds, and the debris. Eileen went to Utah and melted her PCBs, her wheels (yes, her wheels), and despite our cutting edge waterproofing technology (garbage bag), would not survive the rain. Point to NASA.

Lifespan:

When looking at lifespan, it is important to view it relatively. For example, while Opportunity and Spirit were both meant to last 90 sols, Spirit lasted 6 years while Opportunity lasted 14, meaning they lived up to 55 times longer than they were meant to. That's pretty impressive. However, Eileen was expected to live 0 days, making her current 196 days alive infinitely longer than she was meant to survive, which makes her the winner in the lifespan category.

That proves, once and for all, that Eileen is the superior rover, made by superior engineers (NASA please hire us).

If you too want to be a part of a team that rivals NASA, you can follow us on instagram @carletonplanetaryrobotics and get updates there to join our team!

WHO'S WHO?

C-Eng Clubs, Societies, & Design Teams



Erika "Soupcerer" Langner
ELEC IV

Helloooo C-Eng! Welcome in to all first years, and welcome back to everyone else! This article will be a good overview of a few of the engineering clubs, societies, and design teams that you can find around the school. Please enjoy this collection of blurbs from everyone who answered my email, as well as their Instagram or website to reach out to them if you're interested in joining!

CUBES

Welcome to CUBES! We're the Biomedical Engineering Society, and you can find us in 3350 Mackenzie (we share the space with a few other clubs, but we're the ones with the lab coats). We represent both the mechanical and electrical streams of BME, but anyone is welcome, whether you're in biomed or just curious about it! We host networking events and attend conferences so you can start building your career from day one. Need a lab coat? We loan them for free!!! One less thing to worry about. Stressed from midterms? We run baking and frosting events because even engineers need sugar sometimes. We're here for your career, your mental health, and your sweet tooth! Come hang out!
Website: https://cubes-carleton.ca/meet-the-team/

D-Eng-D

Carleton Engineering has its very own tabletop gaming club! As our name suggests, we're the C-Eng Dungeons & Dragons Club, but our adventures don't stop there. We also enjoy games like Magic: The Gathering, Warhammer 40,000, and other tabletop games. Whether you're a seasoned player or have never rolled a die before, everyone is welcome! We strive to create a fun, friendly, and inclusive environment where students can learn new games, meet fellow enthusiasts, and make lasting friendships. Come join us for great games, great company, and unforgettable adventures!
Instagram: @d_eng_d

CSCE

The Canadian Society for Civil Engineering, Carleton Chapter (CSCE for funsies) isn't just for civil engineering students. Our office in ME 3379 has textbooks and notes for all first year classes and is always full of upper years (of all programs) who are willing and able to offer support. We also host awesome events like our annual Gingerbread Engineering Competition in November and an Industry Night in January. We'd love to see you there!
Instagram: @cscecarleton

CUE

CUE (Carleton University EngiqQueers) is Carleton's club for LGBTQ+ engineering students, but everyone is welcome. Join us for events throughout the year like tie dyeing, movie nights, guest speaker talks, and film fest (where you can submit your own silly little short film)! Instagram: @cuengiqueers

InSpace

CU InSpace is a student-led rocketry engineering team where members design, build, and launch their own rockets, from full scale competition vehicles to our beloved little event, Smol Rockit. This event gives students a fun, hands-on way to experiment with rocketry, turn questionable ideas into actual engineering, and see just how far you can make a tiny rocket go!
Instagram: @carletonu_inspace

SREESoc

SREEsoc is the Sustainable & Renewable Energy Engineering Society! We host an annual conference in conjunction with EWB called Future Ready, where professionals share the new technologies introduced in the sustainable energy field and how they see them shaping the future. We also host social and academic events so keep an eye out!
Instagram: @sreesoc

BioCARE

BioCARE is Carleton's only biomedical engineering design team, bringing creativity, innovation, and accessibility together! We are currently designing a prosthetic arm to compete at CYBATHLON in Switzerland, which is like the Olympics of assistive technology. Beyond competition, we also create fun, purely mechanical designs for children with physical disabilities, including an Iron Man inspired hand and a one handed Xbox controller. With subteams in design, research, testing, and more, there is a place for everyone. No engineering

WHO'S WHO?

C-Eng Clubs, Societies, & Design Teams

background required! Come check us out and see what we are building!
Instagram: @carleton_biocare

C-Eng Musical

The C-Eng musical puts on a different parody musical every year, you can join to be a part of the cast, chorus, band, dance, stagecrew, props, and more!! We hold most auditions in September with more opportunities to arise later in the year.
Instagram: @cengmusical

CPRT

The Carleton Planetary Robotics Team is a Mars rover design team on the lookout for students in every field, from aerospace, electrical, software, mechanical, to science and design, all the way to marketing! If you have any interest in robotics, space or science, we want YOU. No experience necessary: if you want to learn, we will teach. Come build robots and interdisciplinary skills that will last you a lifetime!
Instagram:
@carletonplanetaryrobotics

&Design

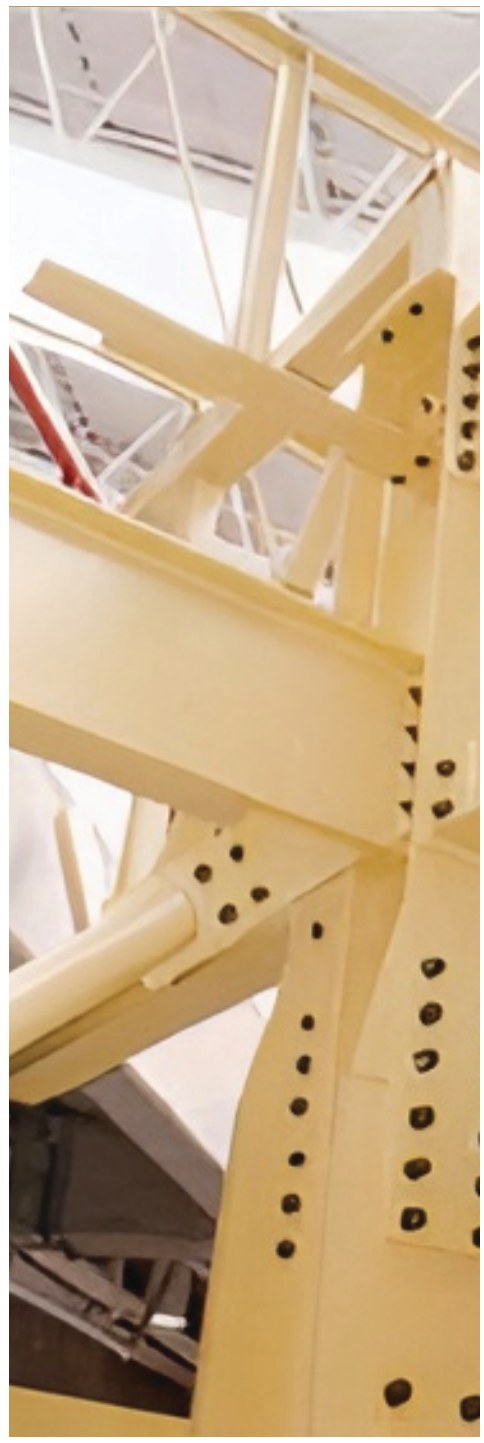
We are a society that opens the doors for design students to find their place in C-eng. whether that be just coming to our events, or meeting people and joining other clubs and design teams. We strive to be interdisciplinary, introducing people outside of their programs, and learning from each other. We try to bring designers together with the rest of the faculty. Come to our workshops if you want to learn a new software, draw, print-make, or create!
Instagram: @anddesigncarleton

SCESoc

HELLOOOO we are SCESoc (pronounced sea-sock)!!! Come by our office and play the arcade machine we built (please). We also run Barcade Night, where we take over a bar and play video games and board games. And Societal Wars, the week long competition where every eng. society hosts an event and competes for points. Yea, we organize it and compete in it (nobody has stopped us yet).
Instagram: @cuscesoc

Blackbird UAV

Blackbird UAV is a student engineering team that designs, builds, and flies autonomous aircraft. Currently, we are entering the SAE Aero competition to construct a fixed-wing aircraft engineered to lift a maximum payload. We are also designing a vehicle for the Aerial Evolution of Canada student competition for May of 2027. First-years can jump straight into hands-on subteam roles and learn real engineering skills with no prior experience necessary! We also run a Small UAV Glider event, a casual team activity where you can design, build, and launch small foam gliders. Come check us out!
Instagram: @blackbird.uav



Overall

Hopefully this has shown just how much of a variety of clubs there are to join at Carleton no matter what your skills and interests are. Feel free to check out the affiliates page on the CSES website (mycses.ca) for even more clubs, societies, and design teams!



OM NOM NOM

Summer Edition



Chloe "The Food" Ouellette
CIVE III

I did a lot of things this summer: I watched movies, ate food, attended work conferences, ate food, caught up with friends, ate food, ate (more) food, and you guessed it, ate food. Though it may seem a little ironic, I did eat a lot of very good food this summer, and I even took pictures of it (sometimes). Some of the food wasn't concrete, too, which is a little wild considering I'm a certified concrete muncher. So I'm here now to give you a rundown of which foods were a hit and which ones kinda flopped.

Disclaimer: I made a lot of this food myself so it mostly looks pretty narsty but trust me bro it might be good.



Chili with Brown Rice (4/10)

This chili looks pretty fire, right? Wrong. While the chili itself was great, my choice to eat it with brown rice was distinctly not. Not only was the rice undercooked, hard, and tasted like dirt, there was also more of it than of the chili, which is no fun. If I'm being honest, the only reason the score isn't any lower is because my mom made the chili (we love my mom. Don't worry; she didn't make the rice) and I ate tortilla chips with it which kinda saved it.

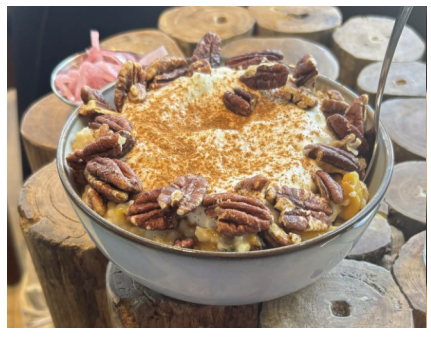
Starting off strong, aren't we? That was sarcastic. We're not. It gets better from here though, so no need to worry.



Brownies (9/10)

These were DELICIOUS. I did make them with my dad, so I'm not trying to brag, but y'all wish you could eat brownies like these. Unfortunately, you can't, because they have all been either eaten or given to my grandparents (you're jealous aren't you). The only reason these beauties lost a point is because there is always room for improvement (or something) and also I had to give them away :(

Regardless, these were incredible, so unless you're weird and don't like chocolate flavoured things (you know who you are) go buy yourself a chocolate Leo's muffin to make yourself feel better. If you're extra, you can even make yourself brownies (if you ask nicely I might give you the recipe). You deserve a sweet treat.



Oatmeal (2/10)

You may be thinking, "That oatmeal looks pretty good, Chloe. How could you possibly rate it so low? I could just eat that up right now, om nom nom that delicious oatmeal."

If that thought is passing through your itty witty engie (or eng-at-heart, we love you guys <3) brain right now, you COULD NOT BE MORE WRONG. That bowl may look delicious, but that's presentation, baby.

Imagine this: you're me, ready to eat a delicious (and sugary) lunch, and this lovely plate is set down in front of you. You scoop up a big spoonful, ready for a mouthful of sugar with some bland oatmeal (which admittedly would already bring this down to a 7/10; who even eats oatmeal for fun?). As you take a bite, the flavours hit you; not sugar, as you expected, but sour yoghurt (taste-wise, not expiry-date-wise, don't worry), lukewarm oatmeal, and flaky pecans that start peeling as soon as I start chewing. Because I'm weak, I immediately start choking and cause a scene and it's a disaster. Oh yeah, and at the bottom, sometimes, if I'm lucky, I get a taste of sweet, sweet peaches. They're mushy.

Disclaimer: the above was a dramatization; the oatmeal really wasn't that bad. I just need to make it seem like I ate bad food this summer so that my scale isn't from 6 to 10/10.



Choccy Chip Cookies (10/10)

Do I even need to explain this one?

Molasses Cookies (7/10)

These ones were very solid, but did unfortunately come out as one big sheet of cookie. Note to self: use soft butter for these, not melted butter. After a good deal of sawing, my grandmother and I saved them, but I fear blunt force trauma (in the form of a butter knife) left them changed for good. However, while their outside



appearance left a good deal to be desired, they tasted just as good. This did mean they tasted like molasses, which in my personal opinion is not quite as good as chocolate, but to each their own (seriously, how do some people not like the taste of chocolate (no offence if you don't, that's perfectly respectable (more chocolatey things for me :D))).



Chips and Salsa (5/10)

These were very average. Nothin' special. Ignore the massacred attempt at guacamole in the corner (please make sure your avocados are ripe before attempting guacamole).



The Omelet™ (YES/10)

I will not assign a number to this one; it brought me too much whimsy and joy. It had ONIONS and PEPPERS and CHEESE and EGGS (and I'm sure you're saying "that's just what an omelet is" but NO this one had WHIMSY). I had it with GRAPES and it was SO GOOD. Do not underestimate the power of an omelet.



Rice Chicken Dish (7/10)

This was a very respectable meal. The chicken was a little dry, but it had lotsa veggies (health or something) and tasted good so that's all that matters. It also served me for four meals as any good dish should.



Butter Tart Squares (9/10)

Made in conjunction with the rice chicken dish. Very very yummy indeed, since it has sugar and other good things like raisins (I won't accept any raisin hatred in this household). The only problem was that the water was turned off right after I cut in the butter (iykyk) which was a true tragedy (sticky fingers for life).

The Work Conference

Ooh boy, now we're getting to some fun stuff. Not only was this food incredible, it was also FREE. Who cares about listening to people yap about encapsulated mass timber construction for two days straight when you've got meals like these to be concerned with. Genuinely, I don't know how anyone got anything done; I was way too busy stuffing my face to take any actual notes.



Day 1 Lunch (8/10)

This lunch was a sort of self-serve taco arrangement. There was rice, beans, chicken, and a bunch of good toppings. There was also a side salad so I had my fibre for the day, as well as some chips and salsa. I had a lot of tacos since they said it "served 12" but it actually served twice that with food left over. Plus, the guacamole used ripe avocados (what a concept) so it was actually edible. Overall, this was a very solid meal, and again, it was FREE.



Day 2 lunch (10/10)

If you thought Day 1 was good, just you wait for Day 2. There was curry, samosas, garlic potatoes, pita, naan, hummus, you name it. This food was so good I went back for thirds and even fourths. I felt like I was gonna explode, but I couldn't help myself, it was delicious. Possibly one of the best meals I had this summer and that's saying something. There was an almost endless supply of it too, cause apparently all the professional conference people are too good for free food. Jokes on them, they had to talk about noncombustible cladding while I got to sit on the side and eat my heart out. This meal made the whole 15 hours of meetings worth it.

All in all, I think this summer had some quite delectable foods. I hope this made you hungry. Go get yourself a sweet treat, you've earned it.

FROM THE DESK OF THE EDITOR



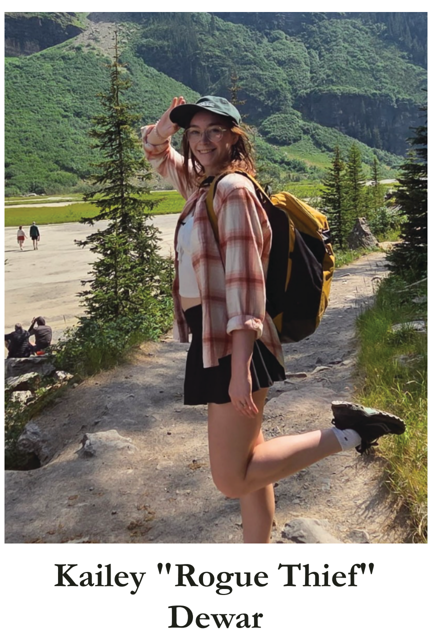
Onyx "Creacher" Alexander-Allen
CAT VII

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THE DATA OF C-ENG

Oooo You Wanna Fill it Out Sooo Bad



Kailey "Rogue Thief" Dewar
SREE B IV

At some point or another, everyone in C-eng has asked a question. How ____ is C-eng? Well we're here to figure out the answers. How queer is C-eng? How neurodivergent? How much beer do we all drink? Do we demolish the 40 beers?? All these questions are asked in this snazzy form. All are anonymous and any question can be skipped!!

So, what is the goal of this form you ask? Well, to find out the connections between programs, years into a degree, and all the other idiosyncrasies that make up the people in c-eng. C'mon, you can't tell me you've never been curious. The plan with said data? To write another article based on the most interesting connections! Now, before some of y'all get worried; this form is anonymous, and it will stay that way. No name or email is recorded. If you're the only person in a certain program that answered the form, then I won't connect your program to any of the other questions answered.

I sure hope everyone reading this scans the QR code and fills out the form 👉👈

Share with your friends and classmates, let's get as much data as we can!

WOW: THE SPACE SHUTTLE KINDA SUCKED

Alternate Title: "Presidential Roleplay"



Jacob "Lathander" Kluding
AERO II

This article won't be diving into the two well-known catastrophic failures that the Space Shuttle is well known for. Instead, it'll be discussing some of the other bad bits you might not know about.

Let's do a bit of role play here. It's 1970. Your name is Richard Milhous Nixon. You are the 37th president of the United States of America. 1972 is an election year, and you already have the first two Apollo lunar landings (and the Apollo 13 Crisis) under your belt. With this tremendous establishment of the US as a spacefaring superpower, you decide, in true Nixonist fashion, that you will completely bottleneck the nascent Space Shuttle Program's funding and hand it off to your good old veep Spiro Agnew. I firmly believe that Nixon Did Nothing Wrong Ever, but this is pushing it, even for him. I digress.

The Space Transportation System (STS) (which eventually became the extremely nerfed Space Shuttle) was originally intended as a complex system of low-Earth orbit shuttles, cislunar (within the Earth-Moon system) nuclear space tugs, lunar surface infrastructure, Low Earth Orbit (LEO) space stations, and all of the fun other things. that you'd think would come with this. You'd think ('you' no longer means that you are Richard Nixon [but you could still pretend you are if you so desire]) that this would be a worthwhile investment. In fact, it's kinda like what we're trying to do right now with the Artemis program. But, as the US tends to be stuck in a futile war somewhere far from the West, money was nowhere to be found; especially as the general US population thought of space as a financial waste of resources (and was also pissed about the futile war[s]). Thus, the US Congress did what the US Congress does, and made the STS budget roughly 20 dollars and 43 cents.



The most essential part of the STS was the LEO Shuttle, so they just decided to keep that and slash the rest. There were many design ideas for the Shuttle, most more effective than the actual configuration ended up being. Notable ones are the DC 3 'Piggyback' configuration, or the Chrysler SERV, heavily inspired by Phil Bono (possibly the most ahead-of-his-time Aero Engineer Ever). Many of these can be seen on a poster in the 3300 block, close to the CUE office, if memory serves. Go laugh at the Chief Designer's funny name.

A bit more pretend right quick. Your name is Jimothy Earl Carter Jr. You are the 39th president of the United States (Unrelated to the notable Seattle Raccoon, though they do look similar.). You think space is a waste of money. You'd rather do things like lose fights against Swamp Rabbits and do interviews with Playboy. (All of this is true, he did do this.) Congress axes the Shuttle Program. You shrug. There's too many swamp rabbits left in this world to worry about that right now.

Back to 'you' you. You might think 'How did the Shuttle Survive This?' The succinct answer: barely. The Piggybacking plan is over, replaced by an orange external fuel tank and the infamous Solid Rocket Boosters, or SRBs. (It's an unpopular take, but the SRBs were generally reliable, discounting the catastrophe that any person older than 40 will tell you they watched happen live on TV in school.) The US Air Force will supply funding, but on the condition that you make wild changes to the Shuttle. In fact, the main reason the Shuttle had delta-shaped rather than typical wings was to have the atmospheric maneuvering range necessary to pull off a daring one-orbit satellite capture to evade Soviet tracking. The payload bay was similarly constrained by the USAF's demands. I will admit the mission plan was actually really cool, but they also Never Even Did That Type Of Mission!!!

Ok. After the tumult of development purgatory and a few test flights, the STS program was declared operational with STS-5 in 1982. But the STS program isn't just the Shuttle! It's the entire program! The Cislunar tugs! The Station! One of the first planned use cases of the Shuttle was to reboost the Skylab Space Station – and you were too late for that! It burned up in 1979, before the shuttle even launched! You're a program without a purpose - a foundation for a house that will never be built. Best you can ever be is a patio. Perhaps a basketball court. This metaphor has fallen apart.

The Shuttle program was mostly used to test the human factors of spaceflight, or to launch commercial payloads. It was eventually used as the basis for the American segment of the International Space Station, finding purpose over 20 years after first flying as a construction and resupply vehicle. In fact, after the Columbia disaster on STS-107's reentry, the Shuttle was only allowed to fly to the ISS (or to Hubble, funnily enough).

I feel bad about slandering what I still believe is the most beautiful systems ever built, but, like. A considerable amount of the general population doesn't even know the Space Shuttle stopped flying in 2011. No one knows about these things, and I'm tired of it! I'll need to write about it more, for sure.



The Iron People

The Iron — Samsung RF265BEAESG 24 cu. ft. Capacity 3-Door French Door Refrigerator with Family Hub0153 - Black Stainless RF265BEAESG/AA

Ethan "Wingman" Gadbois



What's your character class and level?
ELEC V
Where do you hail from, traveller?
Cornwall
What was your favourite meal you had this summer?
The Cheshire Cat Pub's PUB PIE
What does your ideal summer day look like?
Lord of the Rings Extended Edition+The Hobbit Extended Edition+3h 2m of Magic The Gathering
What surprised you most about being EngFrosh Director?
The fog is coming the fog is coming the fog is coming the fog is coming, idk but more seriously probably how actually goated Daniel Vrbanac is
What's the best piece of advice you wish you'd been given sooner?
That the late tuition fee is $131.00
Anything else you'd like to say to the fans?
The Black Cherry Rockstar Energy is an incredible flavour
Here's your chance to flex and include your lengthy list of C-Eng involvement
EngFrosh Director 2026, Tricky Trolls Head 2025, Millenium Medics Head 2024, Cyber Surfer Facil 2023
Leonardo's Lounge GM 2024-2027, Coke Manager 2023-2024
IEEE Competitions Exec 2023-2024
Conc Canoe Analysis Exec 2023-2024

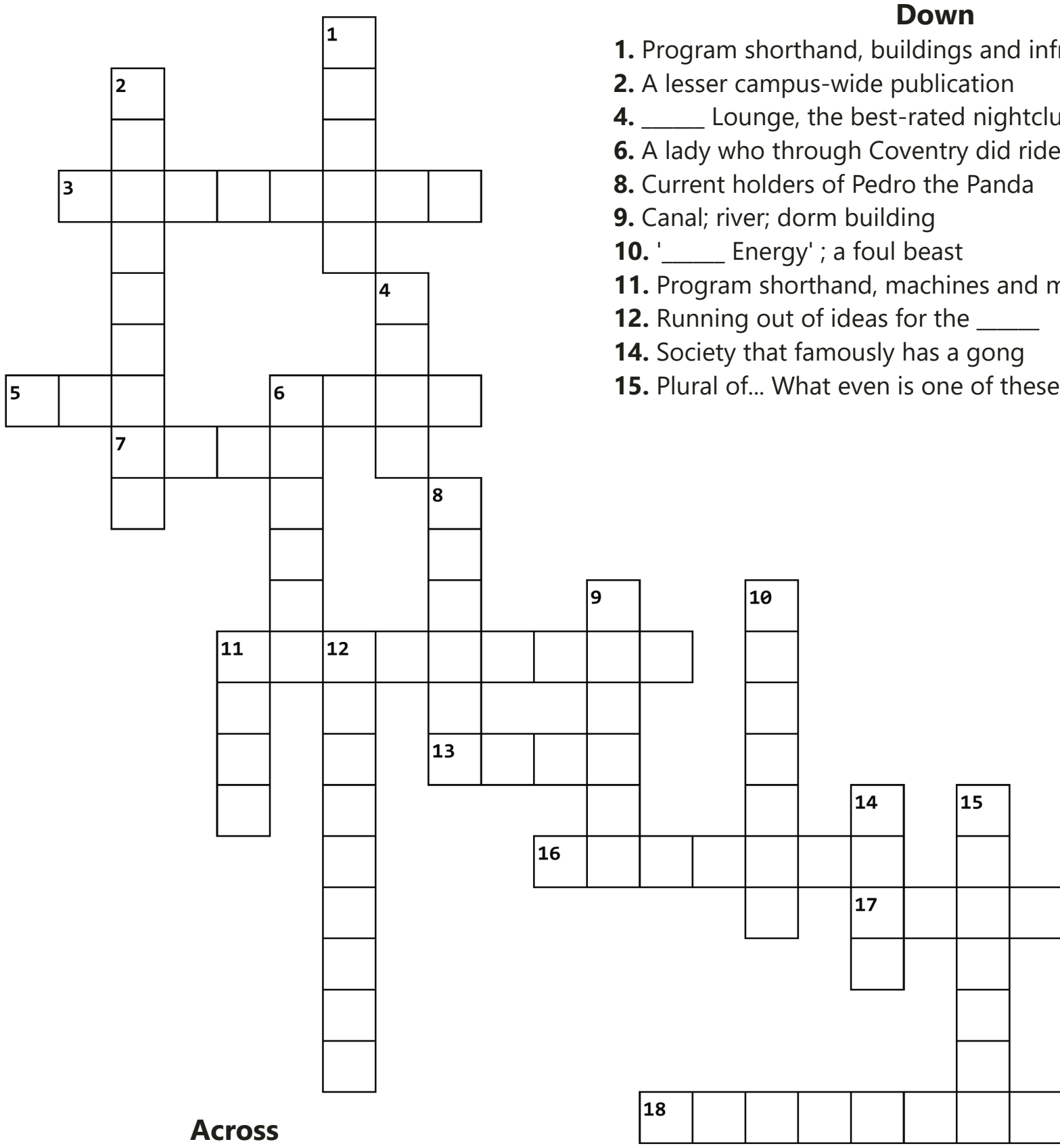
The Iron Carrot

Caroline Twelves



What's your character class and level?
Comp Sys IV
Where do you hail from, traveller?
The good old Ottawa
What was your favourite meal you had this summer?
Dumplings!!!!! It is important to note these were had at 9pm after a day of Campus - other notable meals consisted of lemons & cheese
What does your ideal summer day look like?
It's sunny but not too sunny, it is a weekend with only a few meetings (being realistic here) I eat a few lemons (frozen icecubes) and then the first Mackenzie door I try is unlocked. I skip around the halls like a lunatic and then bike home along the canal - braving the locks without falling in (important). I complete a whole puzzle, bitch and stitch while having an ice cold beer. I then get pulled into a heist alongside a beaver, a rat & a kitten. I adopt the kitten.
What surprised you most about being EngFrosh Director?
How much I truly enjoy a good meeting (this sounds sarcastic it's genuinely not there's nothing better than a productive meeting where things get done)
What's the best piece of advice you wish you'd been given sooner?
Do one big position and do it well - no one can do a million things and divide their time well.
Anything else you'd like to say to the fans?
Get yourself a rubber duck to put in your drinks/water to make them more whimsical (also brackets are underrated use them more) (so are double exclamation points)!!
Here's your chance to flex and include your lengthy list of C-Eng involvement
EngFrosh Director 2026, Sponsorship 2025, Seafarers Guild Head 2025, Spirit 2024, Frosh 2023
CSES Ambassador 2026-27, Accessibility Committee Chair 2026-27, C-Eng-C Sponsorship 2024, C-Eng-C Jr Design Competition Lead 2024, Gong Bearer 2024-26
CDE Delegate 2024 , OEC Jr Design Competition Lead 2026
IEEE Secretary 2026-27, Co-Vice Chair 2025-26, SLAM Communications 2024-25, SPAC Treasurer 2025, ...

THE FUN



Down

1. Program shorthand, buildings and infrastructure
2. A lesser campus-wide publication
4. _____ Lounge, the best-rated nightclub in Ottawa
6. A lady who through Coventry did ride
8. Current holders of Pedro the Panda
9. Canal; river; dorm building
10. '_____ Energy' ; a foul beast
11. Program shorthand, machines and mechanisms
12. Running out of ideas for the _____
14. Society that famously has a gong
15. Plural of... What even is one of these?

Across

3. Moniker, not unlike 'Maverick' or 'Goose'
5. Program shorthand, info tech; a little _____
6. Fast, Cheap, or _____
7. Program shorthand, things that fly
11. _____ building, Engineering and Industrial Design hub
13. Program shorthand, treehuggers
16. Well-painted Carleton pathways
17. Program shorthand, circuiteers
18. The best 2% of the year

ZONE!!!!

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C-ENG SPEAKS

What do you have to say for yourself??

1. Summarise your summer in 4 words or less.

Dazed confused and stressed
Joey Spahn-Vieira

*j*b, meetings, caffeine detox*
Benjamin Stemmler

Brimstone, hellfire, locusts, emails.
Amy Kopytskiy

Wet, Wild, Wacky, Wet.
Chris Meiling

*Line 3 delayed **AGAIN**?*
Mieczyslawa

Costumes, Thing Doing, Ebola
Shoshana “Rack’n’Roll” Rosen

regretting summer classes
Joryn Erwin

Rest, Tomfoolery, Gaming, Adventure.
Jack Murray Taylor

Wet rocks, dry rocks
Elizabeth Brown

CO-OP
Paris Gennaro

Pale night shift era
Connor Allan

2. What are you most looking forward to this year?

Colonel By Chicken Chicken Burger
Elizabeth “Tenfold” Cox

C-Eng Musical!
Rayvel Arjoon

Escaping the Mackenzie Building for longer
Mia "Wrong Parts Included" Cornell

Ravens racing tramp stamp if we make it to comp
Anonymous

Getting back into running and skating along the canal!!!!! Yay exercise!!! Yay fresh air!!!
Kashika Sharma

I’m looking forward to meeting more people in engineering, being the only disabled engineering student I definitely feel like an outsider but I just want yall to know I love you guys and I’m just a socially anxious stoner who’s funny asf!
Joey Spahn-Vieira

people being on campus again
Joryn Erwin

Nothing all hope is lost
James "Home Threepot" Classen

Graduating
Quentin "Market Value" Alexander

3. What is the worst genre of music of all time?

i feel like there really isnt a bad genre (fuckass white boy country music)
Zachary "Soft Serve" Scott

Those songs that reuse music from like the 80’s but with new lyrics and shitty autotune
Quentin "Market Value" Alexander

Celebrities performing "creative" interpretations of the national anthem at sports games
Hazel Craig

All music is beautiful and there’s something to take out of every genre (heavy metal)
Marco Flores

goth, such terrible music and the people who listen to it are honesly freaks and weirdos
Joryn Erwin

COUNTRY (this is objectively true)
Benjamin Stemmler

Whatever tf katseye is putting out these days (as a katseye stan)
Grace Smith

Hyper pop
Declan Bédard-Piché

Country
Axel "Shepherd" Hacker

4. What is the most unimportant hill you would figuratively die on?

you physically cannot skip breakfast because whatever meal you eat first becomes your breakfast. the word breakfast means “to break your fast”, so the first thing you consume in a day is therefore your breakfast.
Emma Dewberry

The southeast transitway is the best piece of transit infrastructure in the entire city
Hazel Craig

Modern dinosaur documentaries need to stop catering to a herbivore fairy tell. Nature is metal, I want to see baby dinosaurs get EATEN
Anonymous

Toilet paper should go under
Erika "Soupcerer" Langner

I always blank when asked these, come back in a few minutes
Elizabeth Brown

we really do not need to go to mars at the current moment
Declan Bédard-Piché

Hitting jaywalkers is legal (in Saskatchewan)
Avery “#Hydration Hero” Kohlruss

I think people should be nicer to each other
Amy Kopytskiy

Cups are the most annoying dish to hand wash (second place is tupperware)
Grace Smith

5. Would a horse wear jorts on their back legs or on all their legs?

All of em why would the jorts discriminate
Anjana Ramaswamy

Back of their legs so that their front legs could fit through a jumper (that's british for sweater! I think idk im not british)
Kashika Sharma

back legs only to assert dominance
Anonymous

I feel like it depends on the situation, I feel like front leg jorts are chill while back legs give much more seductive energy.
Joey Spahn-Vieira

Blub blub blub (back)
Fishie "blub blub blub" Fishington

Back legs only, there are no bits in the front
Avery “#Hydration Hero” Kohlruss

Back legs 100% gotta cover the booty
Grace Smith

Back cause how will they high five their friends
Marco Flores

What is and is not a sandwich.
Jack Murray Taylor

All legs, but then it will be considered a jorse.
Chris Meiling

HOROSCOPES

Foreseen by Jacob "Lathander" Kluding

ARIES

Please, PLEASE, do not cross the street. You really don't want to cross the street this September. Not that anything bad will happen, of course. Just... make sure not to.

TAURUS

You will get 5 dollars from an unexpected source for approximately 18 milliseconds. Not that you'd ever notice.

GEMINI

You will get a ride in the Cash Cab(tm)! Unfortunately, you aren't notable enough for an episode, so it'll be virtually indistinguishable from a regular cab ride.

CANCER

You will get lost in the tunnels for 5 days and 6 nights.

LEO

Avoid completely the people who find meaningful patterns in the uncaring, cold randomness of the universe.

VIRGO

A piano will fall from a great height onto you at some point this month. Either that or an anvil - it simply depends on which is funnier in the monent.

LIBRA

You've never been the type of person to let 'lines' on the 'road' tell you how to drive. Get out there and show 'em how it's done.

SCORPIO

Run!

SAGITTARIUS

You will be drafted.

CAPRICORN

I have no clue what this is. What the hell IS a Capricorn? I mean, I've heard of CapriSun, but I don't think they would dabble in this 'Horoscope' hokum. Who writes these, anyways?

AQUARIUS

The universe has a funny way of balancing things out. Be prepared to be chased by 70 wild hogs this month.

PISCES

If you enter Loeb this month, you'll never leave. It's just the way it goes.

Uses For the Charlatan

Punch a hole in it to make a pinhole camera

Use it as a blanket when your friend forgets to give you one before they fall asleep at the sleepover

Tear it up to make confetti

Wedge it underneath a wobbling table

Use it as hamster bedding

Roll it up to smash cockroaches in the caf

Fashion a pair of wings to escape the tunnels

Shitty Advice



Courtesy of:
Jacob "Lathander" Kluding
Knower of Things

Q.
How many times a week realistically is it okay to eat instant noodles???? I mean it cant be THAAATTT bad can it??????????? Am I going to turn into processed noodles 😨😨😨😨
- Kashika Sharma

A.
Ok, good news AND bad news here. Going with the good news to keep things light: Being processed noodles isn't THAT bad.
Honestly, I'd set a hard limit at 900 packs per week. I feel like the sodium would probably get you after that.

Q.
I need new study music. What should I listen to?
- Rayvel Arjoon

A.
Whatever gets you into 'the zone.' My personal favourites that help me dial in: Aphex Twin's Selected Ambient Works 85 - 92, Delta Sleep's Ghost City, Kamasi Washington's Harmony of Difference, birdsong, white noise, Traffic 10 Hours, Nails On Chalkboard 10 Hours, 4,710 Hz Tone 10 Hours, Sound of Bird Attack 10 Hours, Sound of Hog Attack 10 Hours, and old archival recordings of American presidential debates. Oh, and obviously Steely Dan.

Q.
how does one stop crying themself to sleep because summer is over?
- James "Home Threepot" Classen

A.
Nothing is ever really over. If something stays with you, then it still exists, even if just in spirit. Not the summer, though; yeah, that's definitely done. Like, done-done. Not even here in spirit. I have no idea who summer even is. Who is that?

Q.
Yo Jacob. It's ya boi, mr Gong Show. I'm slowly running out of ideas for Misinformation Monday, and I still have a whole year left to keep making them. Any tips on how I can continue to create new and unique weekly content?
- Chris Meiling

A.
No, not really.

Q.
Blub blub blubiddy blub blubington blud blubber blub?
- Fishie "blub blub blub" Fishington

A.
Never say that to me again. Ever.

Q.
How to deal with your roommate?
- Jack Murray Taylor

A.
You should give him 40 dollars a day. Preferably in crumpled American fives.

Got a Problem?
Need Some... *Shitty Advice?*

WE CAN "HELP"!

Write in to C-Eng Speaks! We want to ~~exploit your problems~~ hear from you!
The most recent submissions form can be found at: linktr.ee/TheIronTimes

Editors in Chief
Mia "Wrong Parts Included" Cornell
Jacob "Lathander" Kluding

Spread Designers
VACANT
Apply Now!

VP Publications
Quentin "Market Value" Alexander

Special Thanks To
All the affiliates that got me their events so quickly
My roommate Kailey (not that one)

Issue Made Possible By
Telesat employee coffee
Municipal government employee coffee
Daily ice cream
And our wonderful contributors!

SEPTEMBER 2026

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30	31	1	2	3	4	5
6	7	8	9 ENGFROSH *First day of Fall classes*	10	11	12
13	14	15 nEWBies	16	17 CUE First Year Social	18	19 CSCE Meat & Greet SREEt & Greet
20	21 Design Team Info Night	22 *Last day to register in Fall courses*	23 CSCE Ottawa Chapter Seminar	24 &Design Mixer	25	26 EWB River Clean Up
27	28 CSES Sexual Assault and Harassment Awareness Training Workshop	29 BITsoc Bubble Tea and Board Games	30 DESoc x RISC-V Ottawa Meetup *Fall financial withdrawal deadline* **HaMP!**	1 CUBES Lab Coat Dyeing	2	3



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Iron Times
SEND US YOUR
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GAMES
QUESTIONS
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