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THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY | VOLUME 33 FROSH ISSUE | TUESDAY, SEPTEMBER 4, 2012

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Anything is Possible in Imaginationland!

ANJALI GOPAL & GRAEME SCOTT
SUPERHUGES

Hello Frosh, and welcome to Imaginationland, where anything is possible! By now, you've hopefully received a couple of mail-outs and looked at our website, so that you know a little bit more about the University of Waterloo's Engineering Orientation Week. We hope you're just as pumped about the week as we are and that you've come prepared to have one of the greatest weeks of your life!

If you're reading this, you have probably received your Frosh Kit. Feel free to take a look through it! It has some really sweet swag that will give you a taste of what to expect this week, along with some very helpful information.

Tuesday is when the fun really begins! You will start the day by finding your colour group's headquarters (just follow the coloured string). Remember to bring your frosh shirt! You will get to meet some of your leaders, the Bigs and Huges. We encourage you to talk to your leaders as much as possible because they can give you a wealth of information; they have all been in your shoes before. Their job is to answer any of the questions you may have about Engineering or the week in general. It was not too long ago that they were frosh, so they know how you feel! You might get a little overwhelmed with the number of new faces you're meeting, but don't worry! You're all in the same position, so go and introduce yourself to another random! There's an 8.33% chance that they're in your class—and some of them may well become your best friends.

H'okay, so once you're in your headquarters, you might be a little scared, excited, or both! You've been given a sweet bag of loot and a snazzy new t-shirt. Now what, you ask? Tuesday is packed with activities such as meeting the Dean and meeting the infamous Education Committee. You'll also be Earning Your Hardhat with your fellow Frosh and Bigs. Your hard hat is your protection against the foes of Engineering and is a well-established tradition that ties together all of the great Waterloo Engineers before you. You must do everything in your power to protect this hard hat and all that it represents. Once you have Earned Your Hardhat, you'll come together in a show of Engineering unity as you pose for an Aerial Photo.

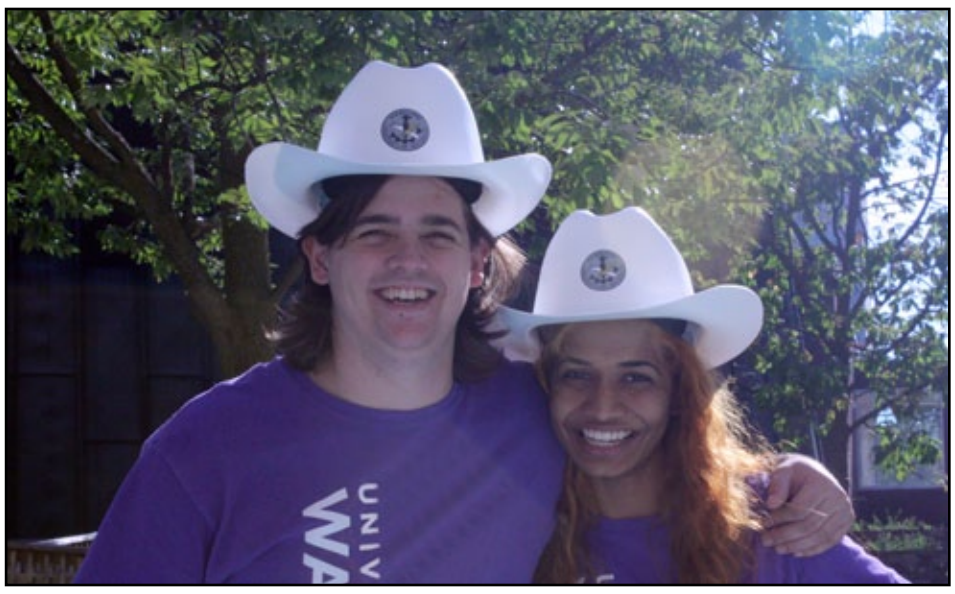
Now that you've earned your hard hat (and your sweet Multi-Tool—check your frosh kit!), you'll have to put it to good use on Thursday. At the Junkyard Wars competition, you'll have the opportunity to prove your im- agination-power with a limited amount of resources at your disposal. You will also get to meet several of our student-run engineering teams. After the student teams lunch, you'll get to meet our Engineering mascot, the TOOL. It's the ultimate and the all-knowing. It also loves spirit and loud noises.

During nighttime events, you'll get to mix and mingle with frosh from other faculties. Make sure to come out to events like Tuesday Variety Night, Wednesday Night Mixer, Monte Carlo on Thursday, and Saturday Night Toga! Check your schedule to know all the details.

On Friday, you'll participate in a battle of wits, hilarity, and inappropriate references, in the final Engineering event: Scavenger Hunt. Go forth and compete in events to gain tokens to try to win the week. There can only be one team... so, will it be yours?

We, as your SuperHuges, are part of the Engineering Federation Orientation Committee (EngFOC) and are here to help make this week as fun as possible for you. This week is all about you, so the more you give, the more you get. If you have any questions, don't be afraid to stop us at any time or just to say hello! We are wearing Gold jackets or vests all week!!

May the best team conquer Imaginationland!



Superhuges: Graeme Scott & Anjali Gopal

HEADCOM Is Speaking To You!

HEADCOM
EDUCATION COMMITTEE

LISTEN UP FROSH!

Now that you're here, it's time for you to learn what it takes to be a Waterloo Engineer. You have a lot to learn and a short time to do it in, so pay attention. We are HEADCOM and we are in charge. We control EDCOM and Orientation Week. Make no mistake about it – you have one job this week: IMPRESS EDCOM. We cannot stress this enough to you.

EDCOM is the Education Committee. We are your lifeline and your guides. We are a dedicated group of senior students hand-picked by the Dean of Engineering from the top 2% of each class. We are the best and the brightest that Waterloo has to offer, meaning we are the best and the brightest, PERIOD. We also participate actively in the Engineering Society, the Waterloo Engineering Endowment Foundation (WEEF), and the many student teams you will learn about on Thursday. We are everywhere. We do everything. We are the authority on everything in Waterloo Engineering. We are not impressed easily.

We are the ones who will award you your hardhat when, and if, you earn it. This meaning that we are the ones who decide whether or not you are a Plummer; a true Waterloo Engineering student. Once you have your hardhats, we will be there to watch your ENGinuity during Junkyard Wars, and oversee all the events of the Scavenger Hunt. On Sunday, based on everything we have seen, we will decide who has won the week, and who has lost.

Good luck, Frosh.

You're gonna need it.

Letter From the Outgoing Editor

Some Tips on Getting Started in Your New Home

JACOB TERRY
OUTGOING
EDITOR-IN-CHIEF

Hello fresh faces, and welcome to Waterloo! I'm Jacob Terry, and I was Editor-in-Chief for the spring term from May to August. I am about to go on an eight-month co-op term, so I likely won't see any of you for a while, but before I do I would like to leave a few words from someone who went through your shoes only two years ago, and introduce you to *The Iron Warrior*.

The Iron Warrior is a student publication run entirely by engineering undergraduate students like you. We publish five issues a term and put them in over thirty locations around the engineering buildings on campus and in a few food locations in the plaza near UW Place. While this issue primarily focuses on Orientation Week, you can usually find news about campus events and features about science, technology, engineering, and relevant entertainment articles. We're online at iwarrior.uwaterloo.ca, @TheIronWarrior, and facebook.com/TheIronWarrior, so you can visit our website to see our older issues and follow us on Facebook and Twitter to see what we're up to. More importantly, check us out if being a part of *The Iron Warrior* interests you.

You're not interested in joining *The Iron Warrior,* you say? My mind is literally unable to comprehend such an unlikely thought, but there are many other ways for you to get involved past your studies. Attending EngSoc events, joining student teams, and participating in other student groups once in a while are great ways to get involved on campus.

While getting involved is good for others and good for you, that doesn't mean you shouldn't attend lectures, participate in tutorials, do your labs and study for exams. If you fail to do those, there won't be any events for you to get involved in or clubs to join, so be sure to keep on top of your studies! Managing that balance is one of the biggest challenges of university (something that I still have trouble maintaining at times). Try to get a good groove down in 1A, when most of the stuff you're learning is still primarily review, or else 1B will kick your butt (speaking from experience). While the courses don't get easier in second-year, you'll likely have a better handle on studying by then if you've done things right and will be able to keep up in your courses.

In the process of studying better (or for a lot of you I'm sure, learning to study), I would highly advise against spending every waking second in your room studying. Sitting alone in your desolate residence room isn't the most ideal way to retain information when the person down the hall is yelling to their friends and your roommate taking two courses is getting achievements in *Call of Duty* or in bed.

While everyone has their own way of working, I find a healthy blend of solitary and social studying is a great way to remember things and keep you from going crazy in isolation. Work with friends who have a similar study method, whether that's the group of you studying in silence or chatting excitedly about your homework. In the event that you get frustrated or need some alone time, the Davis Centre and Dana Porter libraries are great locations for getting in some good quiet study time. On those evenings or weekends when you find the course load quite light and you've got all your studying done, it doesn't hurt to get away from campus, or your home, and enjoy some well-deserved social life.

Don't restrict yourself to your study partners either. There are tons of friendly, relatable people in engineering and across campus who you'll likely get along with, as you'll see in Orientation Week and in residence. Most people are just like you, starting a new adventure in an uncertain place looking for friends who will accompany them on this five-year journey. So don't be afraid to introduce yourself to people, especially in your first term! Branching out in your first term will set some good roots (pun intended) for the rest of your time at Waterloo.

As a parting note, spend time making sure you find good housing after you leave residence. You won't regret finding a good house, but you sure will regret finding a bad one!

Enjoy your five years here, they'll both fly by and go by slowly, but you're bound to enjoy it!

Letter From the Incoming Editor

The Lowdown of Going Through Your First Term at Waterloo

FARZI YUSUFALI
INCOMING
EDITOR-IN-CHIEF

I'm going to tell you something that no other editor is going to tell you: your life is over. If you have had no life prior to coming to university, then you have nothing to lose. For those who spent more time outside of school changing the world (or just entertaining yourself), then you're in for a rude awakening.

You're starting your first year of university – for most of you, away from home and more importantly, away from mom's home-cooked meals and her laundry services. You are also missing your high school friends, your family, and your car and now fear the unknown of university and whether you're going to survive.

You've finally arrived and have started to attend Orientation Week events…so many people or more daunting, SO MANY NAMES! How in the world are you supposed to retain 150 names on top of all the information that everyone seems to be throwing at you from all directions? After all the madness of O-Week (which I'm not going to spoil for you!), you're in pain, your voice is gone, and your tomorrow is your first day of classes.

Fast forward a week of classes and you're freaking out! The professors go so fast and one of them decided to show you a problem on partial differentials (what?) on your first day. On top of that, for you 4-streamers, you now have to worry about finding your first co-op job! Now that I'm reading back, this is sounding really depressing but, hey, at least I'm giving you a heads-up. You're now into your second week of classes and Club Day(s) is being held at the SLC and you've resolved to maintain a semblance of a life, no matter what!

By midterms, you've managed to figure out how to keep up with your mountain of homework and still attend club/team meetings. Oh, but wait! Midterms (i.e. Hell Week) are here! You're now in the same state of mind as when you first got here: scared beyond belief. Nevertheless, you've gotten through midterms (however it has scarred you for life). You're getting to know your fellow first years on your floor and you now have a group of friends (that popped out of nowhere) who you now hang out with. You've begun to explore the campus a little more and have now found a path that takes you across the campus without going outside (this is the mark of a true engineer!). What's even better is that now, you're going out on weekends with friends without a curfew! You're finally getting settled in when, oh no! Final exams! You're back to that same state of fear that you know so well. You start studying hard (and/or learning how to study) and you find that a couple of your friends are great study partners.

You're done! You're making your way home to see your parents, high school friends and your car (I missed you so!). You're proud to say that you now do your own laundry, cook/buy your own food, and do your homework all at the same time! You blink and your holiday has flown by! You're now heading back to the physical/mental rollercoaster that is university; however, this time, you're ready for it!

This thought process through my first term of university can be matched to many Waterloo engineers who, at one point, were in your position. My advice to you (that I wish I took during my first year) is the following: do not be afraid to talk to upper years and ask them questions; imagine how much less of a mess my head would have been if I'd talked to someone! With that said, don't be afraid to talk to your Don, talk to some upper years or see a counsellor if you think this is getting to be too much or you just need someone to listen. Join a student team or a club that interests you. This can especially be said for student teams because this will guarantee you a learning experience that you won't get anywhere else. More importantly, you'll get to meet people who have the same interests and use your energy to create something amazing! Also, find the time to participate in as many events as you c whether it be within Engineering or outside. Finally, I advise you to hang in there if things get tough; I, and many engineers here, can easily say that this will turn out to be (pardon the cliche) the best five years of your life.

THE IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

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The Iron Warrior is a forum for thought-provoking and informative articles published by the Engineering Society. Views expressed in *The Iron Warrior* are those of the authors and do not necessarily reflect the opinions of the Engineering Society.

The Iron Warrior encourages submissions from students, faculty and members of the university community. Submissions should reflect the concerns and intellectual standards of the university in general. The author's name and phone number should be included.

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Welcome From the Dean of Engineering

PEARL SULLIVAN
DEAN OF ENGINEERING

Welcome to Waterloo Engineering!

I am very pleased that you have chosen the University of Waterloo to pursue your post-secondary education. Once again, we have attracted an impressive cohort of bright and talented students to our first-year engineering programs, and you should take pride in joining our Faculty. You will be in the company of top researchers and teachers, dedicated staff, and motivated undergraduate and graduate students.

The Faculty values the importance of a vibrant, engaged student body and the contributions our students make to Waterloo Engineering, the university and the community. The success of our students – academically, on co-op work terms and in extracurricular pursuits – is a major contributor to our excellent reputation, and so we look for students who are well-rounded and passionate. The result is an involved student body, home to active student societies, competitive student teams, service-minded organizations, as well as newspapers, clubs and bands. I encourage you to get involved in one or more group or activity that inspires you and will enrich your Waterloo Engineering experience. Over the course of Orientation Week, you will be introduced to many new faces, a lot of new information and a diverse offering of new opportunities. During this week and throughout the year, you may feel overwhelmed at times, adjusting to new expectations for academic and workplace performance, learning the ropes of our co-op program and choosing among the abundance of extracurricular activities.

Always remember that there is a strong support system available to you. The First-Year Engineering Office is an invaluable service, here to help with your transition by offering academic and personal counselling, as well as tutor sessions and upper-year mentors. Your professors and teaching assistants are also excellent resources, and upper-year students can provide important insight.

Waterloo Engineering also has a staff member dedicated to enriching your experience. Robin Jardin is our Student Relations Officer and your contact in the Dean of Engineering Office. Be sure to get in touch with her to find out about activities that match your interests, to provide feedback about Orientation Week or to share your Waterloo achievements. But perhaps your most important resource will be the people you meet during Orientation Week. No doubt many of your classmates and other engineering students will become supportive friends you'll have throughout your time at Waterloo Engineering – and well beyond.

My term as dean began on July 1 of this year and it is an honour to be leading the Faculty for the next five years. I am excited to see the impact the Class of 2017 will have on Waterloo Engineering, and I look forward to meeting you along your journey. Enjoy your Orientation Week!

Sincerely,
Pearl Sullivan
Dean, Faculty of Engineering

Student Relations Officer

ROBIN JARDIN
STUDENT RELATIONS OFFICER

Welcome to Waterloo Engineering! I'm excited to see so many new students on campus, participating in Orientation Week. The Engineering Orientation Committee has worked tirelessly for close to a year, planning every last detail of this week just for you. I truly hope your orientation experience makes you feel welcomed and excited to be a part of this incredible Faculty!

The role of the Student Relations Officer was created in 2008 with the goal of enhancing your engineering student experience and improving student relations with the administration. I believe we've made tremendous progress in both of these areas. A large part of my job is to listen to you and to ensure the student voice is heard. I provide regular updates to the Dean from our student body, and likewise, share updates from the Dean with you.

As your main contact in the Dean's Office, I am available to provide support to your activities and initiatives. One of my many responsibilities is to serve as the Faculty's Orientation Advisor, so you'll likely see me around during your orientation activities. Hopefully you'll be motivated by the energy of this week to get involved in one or more of the many exciting extra-curricular engineering activities. And of course, we love to boast about our students, so please share your stories and successes with me and others in the Faculty!

I hope you have an awesome orientation experience and I look forward to meeting you at some point during the week and throughout your time as a Waterloo Engineering student.

Best,
Robin Jardin, SRO
CPH 4361
rjardin@uwaterloo.ca
ext.38306

Entrepreneurship and You

VELOCITY
UNIVERSITY OF WATERLOO

So you've just finished high school. You got into the University of Waterloo (congrats!), you enrolled in all of your classes, you've moved in to residence or figured out how you're going to commute from home or off campus, and you're ready to hit Orientation Week head on. There are so many events that you don't even know where to begin.

Take it one day at a time, this week is going to tire you out! You'll meet so many people and go to so many events, from Monte Carlo to Black and Gold Day, that you'll completely lose track of time. But maybe you can handle that. Maybe you'll love the busyness of Orientation Week and you'll want more. You love the constant rush, meeting people and always being engaged and involved.

Have you considered entrepreneurship?

The University of Waterloo and the city of Kitchener-Waterloo are renowned for their constantly growing entrepreneur and startup culture. Day after day, there are startups emerging from the University of Waterloo - startups run by students. They're proving that entrepreneurship is a viable option for students and that now is the perfect time to get involved! People all over this city are coming up with innovative ideas and figuring out ways to start a company however they can. They are tapping into the many local resources available in K-W, like the Accelerator Centre and the Communitech Hub.

If you're interested in learning more about entrepreneurship in Waterloo or have totally been bitten by the startup bug, here's what you need to do:

1. Check out the Communitech hub in downtown Kitchener. This is one of the central locations for startups and entrepreneurship in K-W. You can spend some time at the hub, get to know some of the startups working there and take in the atmosphere.
2. While you're there, stop by the VeloCity Garage. The VeloCity Garage houses University of Waterloo students and alum who are working on startup companies. Feel free to walk around and get more of a feel for how you could start a business while you're in school and how there's value in it.
3. VeloCity also has programming for entrepreneurial students right on campus. Check out velocity.uwaterloo.ca for more information on their campus events as well as the VeloCity residence, a living space where 70 student entrepreneurs coexist and innovate every term.
4. The UW Entrepreneurship Society has many events through out the term as well that will let you see what entrepreneurship is all about. Check them out at uwesociety.com.
5. If you're in a program that includes co-op, look into Waterloo's Enterprise Co-op program. It gives students the unique opportunity to earn a co-op credit while figuring out how to start a company.

If you find entrepreneurship compelling, or you've always wanted to work for a startup, or you want to start your own company eventually, you've definitely come to the right university. Take advantage of this awesome space and dip your feet into the entrepreneurial world. Who knows? You could be the next Mark Zuckerberg.

Welcome From CECA

CECA
CO-OPERATIVE EDUCATION
& CAREER ACTION

Co-operative Education & Career Action (CECA) manages the co-operative education system and career-related services for the University of Waterloo. CECA provides students with everything they need to know when it comes to employment. For co-op students in Engineering who are looking for Winter 2013 employment, the first job postings go online September 15 with interviews starting on October 1. With those dates fast approaching, check out some ways that CECA can help you out with the job process.

The Centre for Career Action hosts a variety of workshops throughout the semester. From Working Internationally to Resume Building; these workshops are the perfect tools for students looking to improve their professional skills. For undergrad students, the first workshop of the semester is Networking 101 on September 18 at 4:30pm in TC1208. For the full schedule and to RSVP, visit our website: uwaterloo.ca/co-operative-education/.

CECA also hosts Employer Information Sessions. The sessions allow students to hear about job offerings and network with prospective employers. Don't delay; the sessions begin the first week of classes! For the full schedule of Information Sessions, visit www.ceca.uwaterloo.ca/students/sessions.php

Don't forget to attend the Career Fair on Wednesday Sept. 26, 2012, 10:00am-3:30pm at Bingemans Conference Centre, Kitchener, ON. This annual event is the perfect opportunity to network with potential employers, investigate and research career options, and obtain information from employers. For more information visit the Partnerships for Employment website at www.partners4employment.ca/home.htm

If you're a first year students looking for more information, our career advisors would be happy to help you. They provide advice such as helping you fit together skills to land your first job, and answering your questions about the co-op process, etc. Appointments can be made online or in person at the Tatham Centre.

The Volunteer/Internship Fair

Come and visit the volunteer/internship fair organized by the Centre for Career Action. You can meet with representatives from a variety of local agencies to find out about volunteer opportunities. These agencies specialize in many different areas including: working with children, aiding seniors, caring for people with health issues, organizing art events, and many others. You can choose to volunteer in one of the hundreds of opportunities and gain valuable experience, as well as staying connected with the community.

Also, talk with representatives about opportunities that may include: administrative work, event planning/fundraising, marketing, boards and committees, special events and recreation---just to name a few.

This event takes place in the Student Life Centre in the Great Hall on **Wednesday September 19, 2012** from **11:00 a.m. to 2:30p.m.**

Welcome to First Year Engineering

AJOY OPAL
DIRECTOR, FIRST YEAR ENGINEERING

A warm welcome to all first year engineering students and congratulations on joining one of the finest universities in Canada. Starting university will provide many opportunities for personal and academic growth: to make new friends, to visit new places, to develop critical analysis skills, gain valuable work experience and to develop a career of your choice. Your undergraduate degree will take approximately five years to complete and it is important that you start this process with care and planning. The First Year Engineering Office is here to help you plan and manage the transition from high school and home to a new environment in the university.

Starting university is also synonymous with becoming an adult. You have the freedom to do what you like and also the responsibility of taking care of yourself. It is your choice to attend classes, complete assignments or write exams; however, we highly recommend that you participate in all of these activities, as they will benefit you greatly. The decisions that you make now will have far reaching consequences later in your life. So, choose wisely!

Let me give you some tips on what to expect and on how to succeed in engineering at Waterloo.

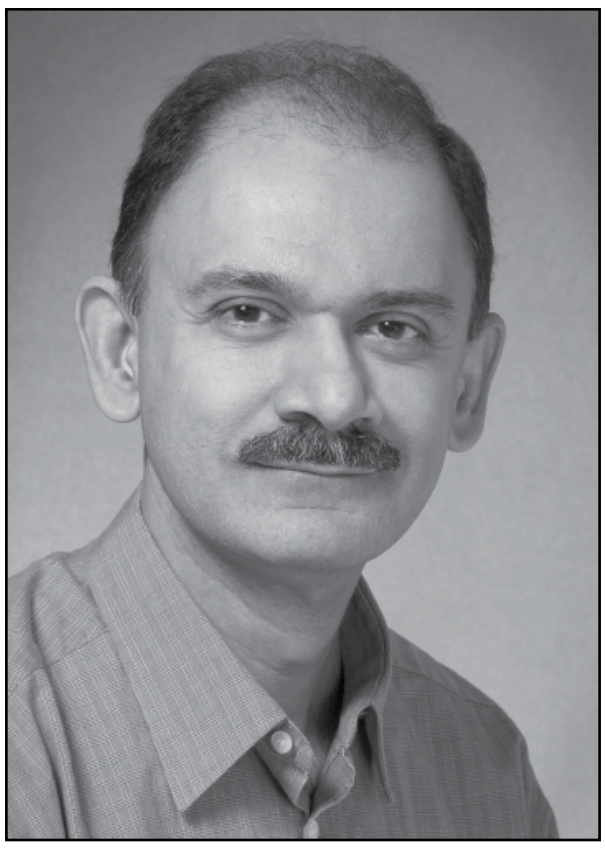
What to Expect in Your 1A term

Each one of you will have approximately 30 hours per week of scheduled lectures, tutorials and laboratory periods during the 1A term. In addition, you will have to put in 20-30 hours per week to study, review concepts and to finish assignments and reports. This adds up to 50-60 hours per week of work; it is more than a full time job! To manage this workload you may have to change your study habits and how you manage your life. Let me give you some tips on things that work, and some that do not work:

- Attend classes. Follow along with what the instructor is teaching in class. Ask questions. During classes do not be distracted by Facebook, Twitter, movies or games on your computer or smartphone.
- Review your course material and complete assignments on a regular weekly basis. Do not try to cram the day before exams.
- Understand the underlying concepts that you are studying in class, instead of memorizing formulae. Solve problems to evaluate your understanding of concepts.

Balance your Life

Your first thought when you join university may be at either end of two extremes: either study-study-study, or possibly, party-party-party. Neither of these extremes is the ideal choice and, as usual, the best choice lies somewhere in between. Let me suggest that everyone is made up of three major parts: mind, body and soul. To be successful in life you need to nurture all of these parts because they depend on each other for survival. For your mind you need to spend time studying and developing critical analysis skills; for your body you need to eat, sleep and exercise regularly; and for your soul you need to relax with friends or take part in extra-curricular activities. Not only do you have to nurture all three parts, you need to balance the amount of time spent on each activity, without ignoring any aspect of your life.



You will also find that time will become an important resource that is in short supply during your undergraduate career. There will never be enough time to complete all the tasks to the degree of satisfaction that you would like. Thus, you will have to set priorities and spend an appropriate amount of time on each task. To help you with this process it is important that you make a schedule for all your activities. Not only should you make a schedule, you must follow it and make adjustments to it as you go along.

Your first thought when you join university may be at either end of two extremes: either study-study-study, or possibly, party-party-party. Neither of these extremes is the ideal choice and, as usual, the best choice lies somewhere in between. Let me suggest that everyone is made up of three major parts: mind, body and soul.

In summary, there are three major things to consider during your undergraduate studies, they are neither study-study-study, nor party-party-party. Instead, they are mind-body-soul, and the balance between them.

Ask for Help

All engineering programs are demanding and have heavy workloads. The workload may result in limited time to understand a concept, finish an assignment or project, or prepare for an exam. The lack of time may also cause stress in your life. In these situations you will need help with your studies or personal life. Keep in mind that asking for help maybe the better choice in many situations, as opposed to, doing everything yourself or doing nothing.

There are many sources of academic help available at the university. First will be your classmates and friends studying the same or similar subjects. It will be beneficial to form study groups with other students taking the same course. Help is also available from your course instructors and teaching assistants during lectures and tutorials, and outside class hours by making appointments to see them in their office. Additional help is available through special staff and tutors hired by the First Year Engineering Office to help you with your courses. The First Year Engineering advisors are available to provide academic counselling, for example, in case your academic performance is not meeting the standards we expect of all students. Please make use of all these resources.

To get help with stress, personal issues, and to learn study and time management skills you can come to Counselling Services. There are Engineering Counsellors available within the First Year Office, or you can go to Needles Hall for additional university Counselling Services. For your physical health you have access to doctors and nurses on campus at Health Services.

Information and access to all these kinds of help can be obtained by coming to the First Year Office in CPH 1320, or by calling extension 84761 during normal working hours.

Be Professional

Engineering, like many other programs, such as, medicine, law and accounting, are called professional programs. The reason is that the work done by these professionals can, and does, affect the lives of other people. As a result, professionals are expected to adhere to high standards in their dealings with other people and amongst themselves. To help you develop as a professional, we expect you to behave in a professional way with everyone, including, your fellow students, teaching assistants, instructors and university staff. Any unprofessional behaviour during your university career can have serious consequences and, depending upon the seriousness of the misdeed, it can lead to loss of marks in a course, or all the way to expulsion from the university.

Being a professional means being ethical, courteous and considerate in all your dealings and communicating your ideas and thoughts clearly. Being professional in a classroom will mean not disturbing your fellow students or the instructor by talking in class. Being professional to your fellow students will mean treating everybody equally and without prejudice, regardless of their race, colour, creed, sex or religion. Being a professional means not to lie, cheat or copy on assignments and exams. Being professional means giving credit where it is due, without misrepresenting somebody else's work as your own. Being a professional is all about doing the right thing at the right time. If you are ever in doubt about if an action is professional or not, ask someone in a position of authority to help you decide.

I wish you all a successful career in engineering and a enjoyable time at the University of Waterloo.

Engineering Exchanges

See the World While Earning Your Degree!

PETER H. ROE
DIRECTOR OF
INTERNATIONAL EXCHANGES

Welcome frosh, to Waterloo Engineering, where we try to help your career, long term, to be the best possible for you. And what has international exchange got to do with this? If you have lived most of your life in Canada, with just a few trips overseas for holidays or to visit relatives, you can really win by going on exchange to a foreign country and being totally immersed in their environment. The experience is often life-changing; it can open your eyes to the outlook, traditions and culture of your host country and to many peoples around the world. You will meet other exchange students from all the continents when you are at one of our partner universities for your 3A or 3B term (or both!). You will make life-long friends and contacts from around the world.

International Exchange is a privilege which we offer to students who have completed 2B and satisfy a number of other criteria. So why think about it at the beginning of 1A? It's a great opportunity that deserves to be high on your list of things to plan for. It needs preparation, organization and forethought. If you plan ahead you can be among the 15% of your class who can go on this major adventure and learning experience.

We have exchange programs with almost 80 top-tier universities in about 30 countries around the world. You need to evaluate which best suits your needs; some of our exchanges are restricted in numbers, some are open only to certain disciplines of engineering, for some you need to learn the language spoken in the country and used for instruction. In some of our exchanges it's easiest to go for a one-term exchange; in others two terms, or even a full year including a work term is best. All this is a part of planning for your future career, which could take you anywhere in the world. To get started, visit our website, www.eng.uwaterloo.ca/~exchange for a wealth of detailed information and all the contacts you need to help you in the process.

If you're concerned about money, more and more scholarships and bursaries are becoming available to help. Normally exchange students lose no time on exchange and graduate with their class.

Finally, exchange is great for fun, travel and adventure. You will visit parts of the world that stay-at-home students may never experience. Don't take my word for it; talk to students who've gone, or read what they have to say. For example:

"I wouldn't have traded my experiences for the world. My time on exchange was great: I got to go traveling and backpacking, got to meet some fantastic people from all over the world, and I graduated on time with my class and my friends! ... If you are even just considering an exchange, I recommend without the slightest reservation that you go. Waking up and looking forward to every day in a new country… that's just not a feeling that you get [if you stay at home]!" - Matthew Lee, Systems Design

Doing an exchange was probably the best decision I have ever made. I learned so much about engineering (of course), but also about European culture and history, and simply interacting with people of an entirely different background. The time and distance away from home, and the completely different lifestyle was definitely not easy to adjust to, but these aspects made the whole experience worthwhile. - Winnie Tse, Mechanical

Engineering Students Societies' Council of Ontario

LEILA MEEMA-COLEMAN
ESSCO VP COMMUNICATIONS

What is ESSCO?

The Engineering Student Societies' Council of Ontario or ESSCO, is a student run organization that facilitates communication between 17 different Engineering Societies across Ontario. ESSCO represents over 24 000 undergraduate engineering students to organizations such as Professional Engineers of Ontario (PEO), the Ontario Society of Professional Engineers (OSPE), and the Council of Ontario Deans of Engineering (CODE). The focus of ESSCO is to be the voice of the engineering students in Ontario. ESSCO also communicates with the Canadian Federation of Engineering Students (CFES) and is responsible for providing the Ontario student's opinion to the national council.

How Can You Get Involved?

As a first year student there are many ways you can get involved with and contribute to ESSCO! Here are just a few to get you started:

1. First Year Integration Conference

ESSCO runs four different conferences throughout the year and invites delegates from all over Ontario to come and learn from each other. The First Year Integration Conference (FYIC) is a conference only for first years who are looking to get more involved with their EngSoc's or in the school community. It focuses on leadership development, building on engineering traditions, and provides an introduction to ESSCO and other groups within the Engineering profession. The conference provides an opportunity to network with other motivated and engaged engineering students from Ontario and allows them to interact more closely with involved students like the VP-External. This year the conference is being held at Lakehead at the end of January. Waterloo 'A' (Four Streams) and B (8 streams) both bring delegations of first years students so keep an eye on the EngSoc mailing list in late November for application details.

2. Rube Goldberg Project

Every year ESSCO facilitates an Ontario wide Rube Goldberg machine that connects over ten schools and for the past few years has culminated in lighting up the CN tower purple! The Waterloo Engineering Society has constructed a machine each of the three years it has been running and is looking to make it even better this year. The build happens in the Winter term during National Engineering month (March) so if you are an 8 stream or a 4 stream on co-op in Waterloo and interested, come out and volunteer to help with a provincial wide engineering awareness event. Details will be available on the EngSoc mailing list in February.

3. Wonderland Math and Science Day

Math and Science day happens in May at Canada's Wonderland and gives high school students a chance to experience first hand the engineering principles and concepts demonstrated by rollercoasters. ESSCO needs volunteers to help run the event and it is a great leadership opportunity and a way to help inspire the high school students involved. This happens in the summer term so 4 streams in their 1B term should watch the EngSoc mailing list in May for more details.

Find Out More

To find out more, check out the ESSCO website, email or come and talk to a member of the ESSCO executive team, three of which are from Waterloo this year!(Leila, Mike and David)

Website: www.essco.ca
executive@essco.ca

Canadian Federation of Engineering Students

KRISHNA IYER
GENERAL MANAGER,
PROJECT MAGAZINE

The Canadian Federation of Engineering Students (CFES) is a national organization that represents engineering students all across Canada. CFES provides a platform to facilitate sharing of know-how and the furthering of the engineering profession from a student perspective. Due to its national appeal, it is a bilingual organization. The CFES represents students on the Canadian Engineering Accreditation Board (CEAB) which decides on the legitimacy of various engineering programs across the nation. Historically, CFES was instrumental in effecting change in the engineering student body. Following the Ecole Polytechnique incident, CFES was instrumental in advocating for more rigorous gun control laws as well as assist students in coping with the tragedy.

The CFES also conducts several events and services for YOUR benefit These include the yearly CFES President's Meeting which serves as a platform for VP Externals from across the country to discuss best practices and understand what challenges could potentially arise from the various activities conducted by individual engineering societies. These meetings are attended by representative of almost all of the 49 member schools and thus representing 55000 students across the nation.

In addition to this, CFES has been running the Canadian Engineering Competition (CEC) for several years now. The CEC is a competition between 150 of the brightest engineering students from across Canada vying for titles in each of the six categories including design, consulting, presentation and debate. The competitors for CEC are distilled from each leg of local competitions starting with the Waterloo Engineering Competition and then the Ontario Engineering Competition.

Additionally, CFES has been working hard to promote the needs of women in engineering and identify lacunae that need to be addressed. For this purpose, CFES runs the National Conference for Women in Engineering which runs annually. This conference encourages the interaction of professional engineers with the students and thus hope to address issues arising from gender issues in the engineering profession.

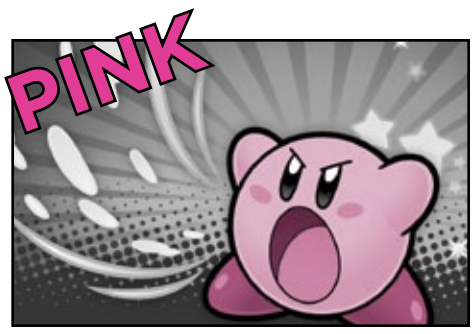
Additionally, in order to keep the engineering students across Canada up to date and relevant in the future, CFES organizes Complementary Education courses in a wide variety of subjects ranging from "The Engineering of Beer" to "Sustainable Engineering". These courses are heavily subsidized and provide an opportunity for one to gear up to be the engineer of tomorrow. Recently, CFES held a "Lean Six-Sigma Course" in partnership with Canada Post to provide the opportunity for Canadian engineering students to get certified in these career advancing qualifications.

Waterloo's involvement with the CFES in quite extensive. This year, Waterloo is the host for the biggest event organized by the CFES; Congress. This Congress provides a platform for almost 200 students from over 40 different schools to interact. Furthermore, there are several sessions held by industry professionals to empower the national transfer of knowledge. The Congress also serves as the annual general body meeting of the CFES and policy changes are often made here.

Additionally, Waterloo is also the host and producer of "Project Magazine". Project Magazine serves as the official medium of communication employed by the CFES and is the voice of engineering students across Canada. If you wish to help out with the running and making of this publications, email promag@cfes.ca.

Despite all the acronyms and cryptic sounding titles, CFES strives for a better tomorrow for the Canadian engineering profession.

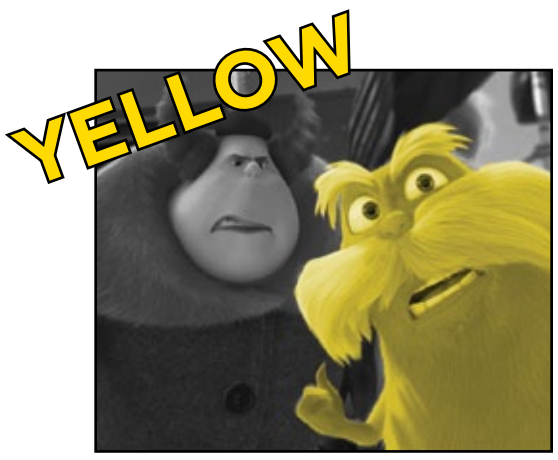
Welcome From Your Colour Group Leaders



On a tiny star somewhere far, far away from earth, there is a very special place known as Dream Land. The Dream Landers are very happy people who use their magical sparkling stars to play and work among the heavens. That is until one night when the gluttonous King DeDeDe and his rotten band of thieves swooped down from neighbouring Mt. DeDeDe for a midnight snack in Dream Land. Not only did they steal all their food, but they stole the Dream Landers' treasured Sparkling Stars as well.

Because the Dream Landers didn't have the Sparkling Stars to gather food anymore, they began to get very hungry. Suddenly a spry little boy named Kirby happened to come along and say, "Don't worry, I'll get your food and your Sparkling Stars back!" With these words, Kirby set off on his quest toward the dreaded Mt. DeDeDe. On his adventures Kirby stumbled upon Waterloo Engineering Orientation 2012 and felt it was only right to join forces with Team PINK!

Kayla, Johanna, Kevin, Erin & Roy
Pink Huges



Group Yellow, Group Yellow! We're bright as the sun,
We're going to teach you a
Thing 1 or 2 about fun.
I would be excited, were I in your shoes;
Oh the places you'll go, the things that you'll do!

What do the other groups
have that we miss?
Team Green has their eggs; Red
and Blue have their fish…

But Group Yellow is special;
we've got something nifty:
Our good looks, our charm,
and our boundless whimsy.

Being a part of this team is a cinch,
Be smiley and gleeful,
and don't be a Grinch!
We'll turn you all into great engineers,
You'll soon solve for x using nothing but gears!

Our Theme! Can you guess it?
Were you able to deduce?
I've left clues here and
there, for you super sleuths.
Of course you know what
it is, you darn clever goose,
Yellow's theme for the week
is The Great Dr. Seuss!

Matt, Elizabeth, Ryan, Andrea & Michael
Yellow Huges

Years ago a legend was told about the mighty gods whom lived atop the highest mountain in the world. Immortal beings that possessed divine powers and watched over all, well unlike many myths, this one is true. For years we have watched down upon you, shaping the world around you. But now it is our time! This week we step out of the spectator seat and make our grand entrance. Helios, mount your chariot! Light the way for the amazing group that is light blue! Wear your colors with pride fellow team for this September we ride to Waterloo to take what is ours.

We shall show all others the strength of Olympia. Hades!!! Rise up from the underworld. Zeus, let your lightning crash down harder than ever, let the thunder echo for years to come. Clear the way for light blue, because in case Hermes didn't give you the memo, we came to win. From the underworld to the mountain peaks. Who are we? We are the Greeks! Mount Olympus!

Gabe, Kelsey, Keith, Andrew & Brendan
Light Blue Huges

Hello! Welcome to a wonderful world full of magical experiences and lands of opportunities! That is to say welcome to Willy Wonka's Chocolate Factory! Have you ever wanted to float down a river of chocolate?! Actually taste a never ending gobstopper?! Well if that's the case, keep looking because that's from a movie. Just kidding! We can offer you that and so much more! So if you like chocolate and candy (come on who doesn't) then you're in the right place, hope you're ready!

You will taste the rainbow and then some, eat until you explode! The possibilities are endless! Come with me, and you'll be, in a world of pure imagination!!

Rory, Scott, Cam, Callie & David
Light Purple Huges

Said the Leaders to Frosh
"You know it to be true,
That the past is now awash,
What ever will you do?"

Today you join the Durple team,
For better and for good
To meet and greet, and
move your feet
Explore the neighbourhood.

Quadrilles we will have galore
And mushrooms there to boot,
Come find out what we have in store
We'll take the scenic route.

We'll build with hard-
hats on our heads,
For glory we'll design,
Amid the shouting, "Safety first!"
A grand assembly line.

We may not know where Molly is,
It's Alice who's our friend,
We'll grow and build and
eat Cheez Whiz,
We'll win until the end.

So come along and
soon you'll see:
You never will be late,
Come and join our tea party,
On this most exciting date.

Gabriel, Nikhil, Rachel, Kevin & Lisa
Dark Purple Huges

The Legend of Zelda is a classic video game franchise from Nintendo, beginning in 1986 with *The Legend of Zelda*, and is still going strong with the latest release of *The Legend of Zelda: Skyward Sword* released in late 2011.

The games mostly follow the same premise: the Princess Zelda is captured by the evil Ganon, and you play as Link, trying to rescue the princess.

In each game, Ganon's evil plot follows the classic plot of trying to unite the three parts of the Triforce to try and rule Hyrule! The three parts are wisdom, power and courage. Ganon naturally represents power, Zelda represents wisdom and Link represents courage. It's a classic battle of courage and wisdom versus power as Link and Zelda battle the evil villain Ganon and take back the world.

Most games begin with Ganon taking over most of the world, plunging it in darkness. Link must conquer the world back through the temples set up during the world. The world of *Zelda* is full of creatures that either aide or defy Link. Link must use these or battle against them to slowly take back the world before he goes one on one against Ganon to save Princess Zelda and the world!

Maddy, Keegan, Nolan, Caitlyn & Ben
Light Green Huges

It began with the forming of the Great Faculties. Three were given to the Sciences, eternal, wisest and fairest of all beings. Seven to the Math department, the great masters of the lecture halls. And nine, nine rings were gifted to the Arts department, who above all else desire power. For within these faculties was bound the strength and the will to instruct students.

But they were all of them deceived, for another faculty was made. Deep in the bowels of E5, in the fires of the Student Design Centre, the Dark Lords Edcom forged a master faculty, and into this faculty they poured their cruelty, their mischievousness and their will to study all life. Engineering: one faculty to rule them all.

Since then, some things that should not have been forgotten were lost. History became legend. Legend became myth. Myth became tradition. Join your Bigs and Huges on Tuesday September 4th for the start of an epic journey. You shall battle monstrous opponents, overcome trials, defend your allies, and be followed forever by the all-seeing eye of Edcom. Welcome to the Light Brown Fellowship, and with my hardhat, and my wrench and my pen we shall compete for dominance and rule all of Imaginationland!

Angela, Brent, David, Kyle & Patrick
Light Brown Huges

When all Imaginationland is in ruin and burnination has forsaken buildings campus-wide, only one team will remain... who should your money be on? The Fiery Creatures!!!

Forged in the molten rivers of mighty volcanoes, your elite team of red leaders were baptized by fire and trained from a young age using methods that would make Blaine himself quake. Now the time has come for you, first-year engineer, to be cast in the same mighty mold. You will come in as a Charmander and exit as a Charizard. The path to evolution will not be a short one, but it will be a fun one. And as you help your team to victory over the other inhabitants of Imaginationland, you will realize just what it feels like to be a true Fiery Creature!

May you carry yourself with the grace of the majestic phoenix and the beefy-armed strength of the great Trogdor.

Jason, Robert, Thomas, Orysia & KJ
Red Huges

Deep in the heart of the savannah, under orange African sun, lives a team of lions so orange they say ROARange! Ruled by the mighty lion Huges, Team Orange is a diverse animal kingdom where the engineers live in harmony with all other Waterloo species in a circle of life that begins and ends with pleasing Edcom. Back in the 1990's Team Orange was spawned from a magical cube hidden in an icy cave of Imaginationland, which one day was freed and transformed into a crime-fighting robot, and transformed for three years more into an entire animal kingdom. Ever since 1994, the Orange savannah has been transforming even more as some of the animals worked on their issues through song and dance. Team Orange can run like with the wildebeest, cackle like the hyenas, and Hakuna Matata like a meerkat. The Orange Huges and Bigs have gathered from across the engineering kingdom to train a fierce new group of Waterloo Warriors. Team Orange is the mane event like no king was before and plans to serve up the other colour groups on a silver platter *à l'orange*. You've seen *Lion King 1, Lion King 1.5,* and *Lion King 2* but Team Orange will give you *Ling King >9000*!!!!!

Nikita, Chris, Kate & Alison
Orange Huges

Welcome to Neverland first years!

Dark Green is the adventurous, clever and fun world of Peter Pan. An incredible era filled with exciting journeys and thrilling endeavors. We are a carefully selected bunch of mischievous creatures that spend our never-ending childhood on the small island of Neverland. During the week you will get a chance to interact with mermaids, Indians, fairies, pirates, a crocodile, and occasionally other beings from the world outside. Get ready to meet a team of enthusiastic leaders who are clever, hyper, fun and forever craving NOMs. During the week you will see us all go out of our way to make sure you are having a good time and will be there to answer any questions you may have during or even after Orientation Week.

We are eager to introduce you to a fictional universe that is almost indistinguishable from the real world! Your presence will add onto to our great list of fictional characters.

YOU HAVE NOW STEPPED IN TO THE LAND OF IMAGINATION AND IMAGINATION BEGINS WITH PETERPAN!

WE CAN FLY WE CAN FLY WE CAN FLY!!!

Wylee, Pete, Parmeg, Chinmayee & Mark
Dark Green Huges

Monsters Inc. plunges you into an entirely magical world where monsters carry about their everyday lives in the city of Monstropolis. The city is inhabited and run by an assortment of comically bizarre creatures with colourful personalities not unlike our own. There is one unique thing about this city; it has closet door portals that lead into the human world. Ever wonder why there are never any monsters when your parents look for them?

Welcome to Monster's Incorporated! We scare because we care. As our new employee, you are responsible for collecting as many screams as possible to win O-Week!

We're Dark, we're Blue, we're going to scare you!

Gabriel, Annamaria, Eric, Joe & Stefan
Dark Blue Huges

Welcome fellow Asgardians, today we will begin our journey into the heart of the newly discovered "10th World," Imaginationland. What dangerous perils and challenges that you all must face are unknown. But don't fret warriors, for we have united you with the Dark Brown team, an elite class of Asgardian warriors, hand-picked by the mighty Thor himself, to assist you on your journey into the abyss. Together you will conquer this new land in the name of Asgard. You will bring fear to those who oppose you, and aid to those who guide you. Remember warriors there is no greater pride and glory than fighting for Asgard. Fight to the end and never give up, from the first blow to the last breath, for your children and your children's children will tell stories about you that will last throughout the ages. With power of Odin, there will be nothing that can stop us. FOR ASGARD!!!!

Devin, Dushanth, Caz, Farzi & Suchi
Dark Brown Huges

About the Hardhats

Yellow

The Yellow hardhat is reserved for incoming new students who complete the Principles of Engineering during the Earn Your Hardhat event on the Tuesday of Orientation Week. It symbolises the incoming student's dedication and hard work during their life so far, their Orientation Week, and the years to come. An estimated 1,600 Yellow hardhats will be awarded this year.

Green

The Green hardhat is awarded to the Bigs during Orientation Week that prove their ability to dedicate and sacrifice themselves to their colour group and the new students they lead. It represents that leader's ability to be a leader and their dedication to Orientation Week. An estimated 300 Green hardhats will be awarded this year.

Red

The Red hardhat is awarded to the few Huges during Orientation Week who have the ability to organize their colour group, motivate their leaders and lead their team to victory. It symbolises the hard work they put into the week through organizing and leading their team, as well as their proven abilities as student leaders. Only an estimated 60 Red hardhats will be awarded this year, so those that wear one should be trusted and looked up to.

Orange

The Orange hardhat is awarded to the few Media Gurus during Orientation Week who prove their ability to handle a camera, manage media, and compile videos which are considered by most to be works of art. It symbolises the hard work they put into the week in capturing the special memories of an amazing week for all. Only 6 Orange hardhats will be awarded this year, so when you see one be sure to smile and wave for the camera.

Engineering Programs at Waterloo

AIDAN MITCHELMORE & KATE HOLBROOK-SMITH
ARCHFOC '12

The University of Waterloo School of Architecture offers an amazing place to study, is one of U of W's satellite campuses, and is located in Cambridge, about 45 minutes from main campus. Orientation week allows students to meet their professors, understand where all their classes are, and be totally prepared for the first week of classes. Students will also get a chance to discover Cambridge's shops and parks before the school term kicks off. There are three parts to the program; the technology stream, the iconography stream, and the design stream. Students will take all courses from each of these areas simultaneously, learning architecture's principles of structures, it's connection to culture and history, and it's challenging design process. The school is a close connected community who can't wait to meet the incoming first years!

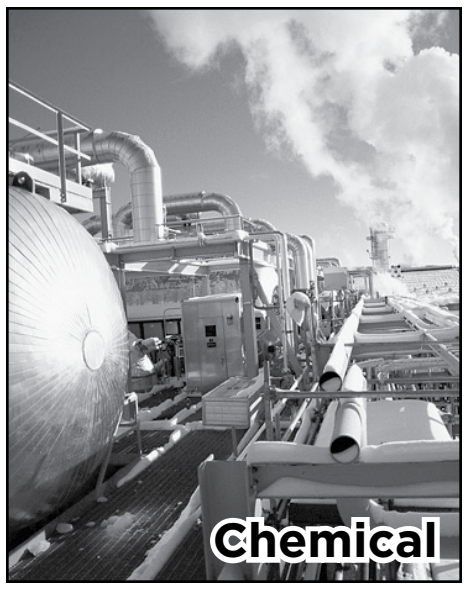
KEVIN LIANG
3N CHEMICAL

Chemical engineering involves very little chemistry. This is only one of the many incongruities one will find at university. Chemical engineering involves mass and energy balances, unit operations, thermodynamics, and process control to name a few. Only a small portion of a chemical plant will consist of the reaction vessel. The rest will consist of separation systems. A chemical reaction will always produce undesired products mixed in with the desired products.

A large part of chemical engineering is designing systems to separate the desired products from the waste components. Of course there are a myriad of other topics in chemical engineering such as bioprocess engineering.

Chemical engineers scale up the chemical and physical processes discovered and studied by chemists. No chemist is interested in the amount of heat released during an exothermic reaction; or the amount of work required for the stir plate to keep solution homogeneous. When the system is much larger, heat exchangers with proper coolant flow rates are required to keep the reaction vessel at optimal conditions.

First year of chemical engineering is, for the most part, the same as every other engineering program here at Waterloo. Calculus (MATH115), physics (PHYS115), chemistry (CHE102), and linear algebra (MATH116) are the core first year engineering course and will be mainly a review of high school. The chemical engineering concepts course (CHE100) will be the one course that differentiates chemical engineering from the rest of engineering. This course will consist of both a lecture and lab component. This course will introduce you to mass balances, unit conversions, process, and process variable. These basic concepts will be the building blocks of chemical engineering, and will be studied in more depth in future courses. The lab component is essentially a MS Excel course. This will be useful for practically every other course in the chemical engineering degree.

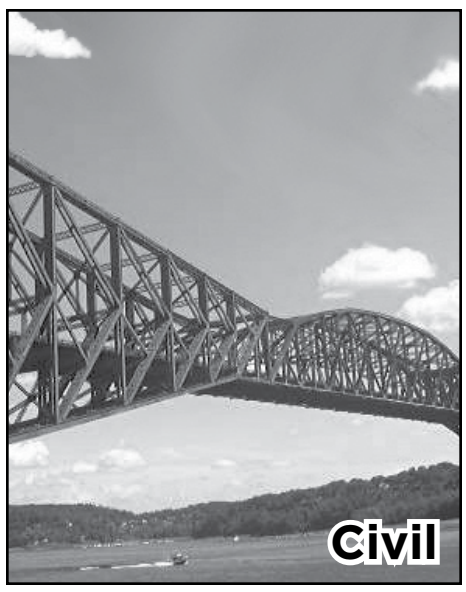


JON MARTIN
4N CIVIL

Welcome class of 2017! You have just made your first big step into the world of engineering at the University of Waterloo. The undergraduate Civil Engineering program at the University of Waterloo will provide you with a well-rounded, learning experience that you will get to develop with various classes and labs (The first surveying labs are out at Columbia Lake). Not only will the program challenge you to develop your knowledge in physics, calculus, and chemistry, you will get to apply your knowledge within numerous aspects of Civil Engineering: structural analysis, geotechnical engineering, sustainability, earth sciences, hydraulics, water quality, material sciences, transportation, pavement design, airport planning, economics, and programming.

In your first year, expect to develop the knowledge you learned in high school even further, especially when it comes to physics and calculus. Expect to be introduced to some exciting work such as surveying in the fields along Columbia Lake and testing rocks in the earth sciences lab. Keep in mind what kinds of things you enjoy because in later terms you start choosing 'technical electives' to shape your degree towards the field you are most interested in. In third and fourth year you will get the opportunity to really shape your education by choosing the technical electives that lead to the field within Civil that you want to focus on – Structural, Transportation, Water, and Geotechnical.

All in all, be sure to get help from your TAs or professors when you need it, build strong relationships within your class, and never hesitate to talk with upper year classes – we have all gone through what you are dealing with now and we'd be happy to lend a hand. Beyond class, participate in extracurricular activities that interest you, and manage your time so that you can have an enjoyable and successful first year. And remember, Civils Always Win!



STEPHEN HOLIDAY
3T COMPUTER

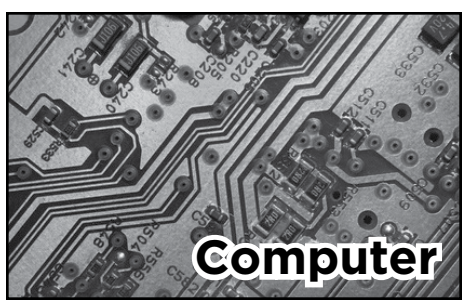
Congratulations on choosing CompEng at Waterloo!

With students coming from different educational backgrounds, first year works on getting everyone on the same page and used to university life. In first year you will have courses on software engineering, linear circuits, digital circuits, physics and lots of math. Keep an eye on the math, calculus has an annoying habit of appearing in courses you wouldn't necessarily expect in upper years.

Spend time learning how you learn best. This will save you lots of wasted painful hours and understand better.

This program can set the foundation for excellent co-op and full-time jobs in some really cool places like Silicon Valley, New York, Seattle and overseas. Make sure you get your resume reviewed by as many people you can. This document is key to getting that interview at that cool company.

Enjoy your frosh week and embrace the opportunities available!



AJ ROSEWARNE
3N ELECTRICAL

Welcome Electricals to the University of Waterloo and to the Department of Electrical and Computer Engineering.

First year Electrical will be an eye-opener for most of you. You need to buckle down and create good study skills fast if you want to make it out in 5 years. In first year, you will be bombarded with a myriad of different topics. The most important will be your circuits courses, and probably your 4 calculus courses. These are the backbone for electrical engineering, so study them well.

Don't forget to take a break from studying, otherwise you will go insane. A great way to do that is through extracurriculars. There are many different groups on campus that will have what interests you. Be sure to check out the engineering society to meet some new friends in different programs.

Welcome and may you have the best 5-7 years of your life!

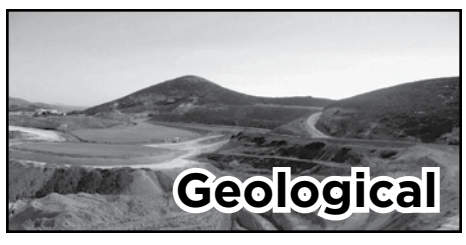
BREANNE O'GRADY
3N ENVIRONMENTAL

Hello there first year Enviros! Many of you are still probably wondering what it is exactly an environmental engineer does. Despite what your family and friends may think, it has nothing to do with trees. This field mainly revolves a more chemical, physical and biological side of the world around us.

In your first couple of years you will be taught the fundamentals of engineering. They may seem really unnecessary right now, especially linear algebra, but trust me the concepts will continue to pop up throughout your years. In 1A you will learn a lot from your concepts course such as surveying, technical report writing and how to always wear weather appropriate clothes. The important thing to remember is to try and get out and have fun. Good luck!

MIDORI TELLES-LANGDON
3N GEOLOGICAL

Welcome to Geo! You may have picked this program because you just love geology, or because you just love money. Either way, you're in the right spot! With this degree you can work in consulting, environmental remediation and protection, exploration, mining, and more. Geo is a joint program hosted between the Faculty of Engineering's Civil and Environmental Department and the Department of Earth Science under the Faculty of Science. Your courses will be a mixture from both degrees, giving you a solid understanding of civil engineering principles and many aspects of geology from geophysics to hydrogeology. The geo students, faculty, and staff will become your family for the next five years of your life!



NIKITA KUMAR
2T MANAGEMENT

Welcome to the club, Class of 2017! We are so glad to have you join us! For the new incoming students, the next few lines will help you better understand what you've just signed up for, for others it'll help you understand what Management Engineering is really about.

Management Engineering is using mathematical models and software to optimize and improve systems. That would be the fancy way to say things. Putting it simply, Management Engineers takes systems, any system: A railway transportation system, a computer network, a soccer league, anything. Then using mathematical techniques to reduce extra costs, inefficiencies, time, etc, we find an optimal output. This is just one of the many features of our program.

There are a number of other things that we also get to work with such as telecommunications networking problems, forecasting and scheduling, design and implementations of information systems being just a few. To assist with all the problem solving and designing involved Management Engineers study Statistics, Algebra, Programming, Software Design and some Business-related concepts.

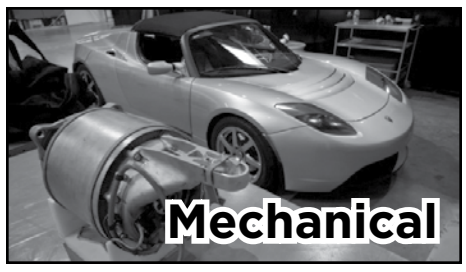
Management Engineers are not learning to manage engineers, they take on business concepts to help provide solutions to problems that are critical to the management level of a company.

It is a great program to be a part of and we look forward to you being a part of it!

LEILA MEEMA-COLEMAN
2A MECHANICAL

Congratulations 2017 Mechanicals on starting the five most exciting years of your life! So what can you expect in your first year? Well you will learn a little bit of everything. Mechanical is very general in first year learning lots of physics, calculus, and materials then specializing in upper years.

First year Mechanical Engineering will provide you with opportunities to learn about design principles, AutoCAD, NX, and basic programming. You will meet your WEEF TAs who are fantastic upper years there to get to know you and help you succeed in your ME 100 course (best course ever by the way!). Lastly, even though school and grades are important, first year is about trying new things so get out there and join some clubs, student teams, WEEF, the Engineering Society or one of the other millions of opportunities Waterloo has to offer!



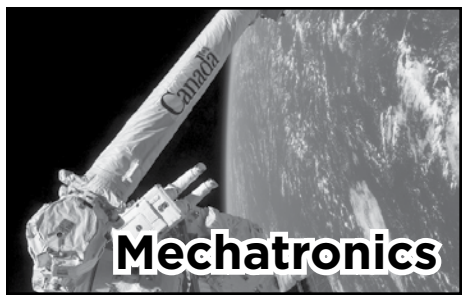
ALROY ALMEIDA
4A MECHATRONICS

Welcome to Tron – the smorgasbord of engineering programs! There is something here for everyone… Don't be surprised if you suddenly realize that your interest in one aspect of the program suddenly shifts to something completely different. After all, university is all about discovering what you want to do with your life.

Concepts will be pulled from the darkest corners of ME (material properties, heat transfer), ECE (circuit analysis, microprocessor interfacing) and SYDE (no one is really sure…). Never programmed before? Better get help and learn quick, there is going to be a lot. Don't run in fear just yet… learning to code will land you jobs and make you a better engineer!

The best advice you will receive:

1. Get through the first two years. It gets better... it gets real!
2. 2B and 4A Tron students will also be on campus in the fall so come out to events and introduce yourself. You'll thank yourself later.



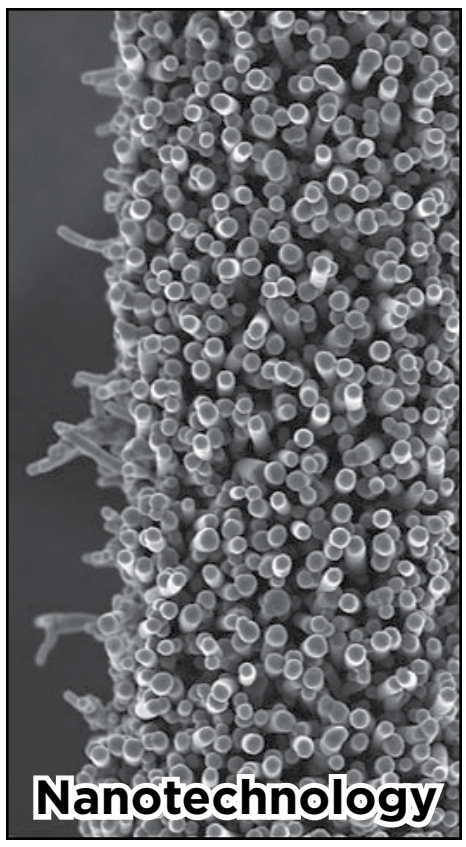
STUART LINLEY
3B NANOTECHNOLOGY

Arise, young Nano Engineering initiates, and begin your journey into the depths of cutting edge chemical synthesis, microfabrication techniques, electronic circuit design, nano-bio systems, quantum physics, and... math! Let me be one of the first to congratulate you on your acceptance into one of the most interesting programs available to undergraduate students! If you are anything like me, you chose nano-eng because you wanted to keep your mind open to many disciplines of science, continue your education at one of the best academic institutions in the world, and learn from some of the top professors in their respective fields. That, and 'Oh, I'm in nanotechnology engineering at the University of Waterloo.' sounds super bad-ass when you're meeting new people (especially if you're all nonchalant and stuff). Well, if these are some of your reasons for accepting your offer to Waterloo, I assure you that you won't be disappointed. From biochemistry to semi-conductor physics, you'll get amazing exposure to some of the most important technologies in today's world, and a good overview of the science behind all of it. Your first year in the program will introduce you to calculus, numerical techniques, and some basic chemistry, physics, and materials science to give you a good knowledge base to build upon for your future years in the program. The real fun starts in your 2nd year with biochemistry, electromagnetism, device physics, and quantum mechanics.

Some small pieces of advice I have for you as you enter this next stage of your life are as follows:

1. Talk to upper-year students (mainly 'cause they're lonely) because we love to answer your questions and might even be able to help you with something!
2. Don't spend ALL of your time studying. Believe me, I love grades, but don't focus so much on school that you miss out on everything else that you could be experiencing. Come out to EngSoc events, get involved on a design team, talk to a professor about doing a URA (Undergraduate Research Assistantship), join the Eng Jazz Band, or play on an intramural sports team. Whatever your interests are, university is a place to explore them.
3. Don't slack off. Contrary to my last point, make sure you keep up with your studies. One way to really ruin a term is to try and cram all of that information into your head the night before the exam.

I could go on, but I think you get the gist of it. If you have any questions about the program, or student life in general, talk to your orientation leaders, and come out to our Nano barbeque held every term to meet more of the upper years. I look forward to seeing you around and I know you'll love your first year in Nanotechnology Engineering.



GURJANT KALSI
2T SOFTWARE

Q: How is software engineering like a softball?

A: Neither is soft.

Welcome to Software Engineering (SE), the program that's half math, half engineering, and all of both! Here you'll learn about everything from the design of complex software systems down to the XOR gates that make them possible.

First year will consist of a healthy mixture of engineering and math fundamentals. You'll notice that your classes will most closely resemble electrical and computer engineering's lineup with a little more focus on programming and math. As you progress through SE, you'll find that your courses become more distinct.

As a member of a stream 8 program, you'll have a full 8 months to get comfortable in Waterloo before starting your first of (approximately) 6 co-op workterms -- don't worry, JobMine usually has a healthy portion of software jobs.

If you have any questions, feel free to ask an upper year student and remember to check out all of the Software Engineering resources in the second level of the Davis Center (labs, offices, lounge, etc.). Good luck, and have fun!

OWEN COUTTS, MYLES TAN & MEGAN MCNEIL
3N SYSTEMS DESIGN

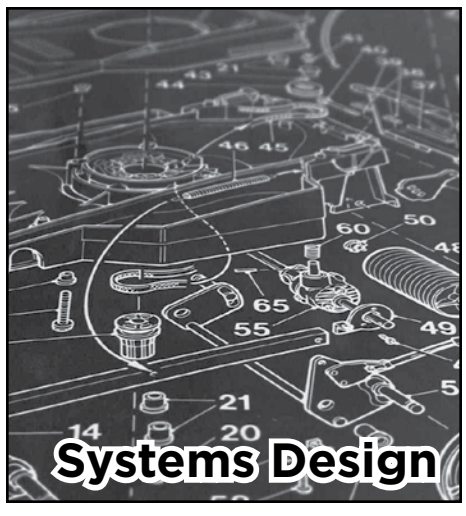
In your first week of school, you will be taught to memorize the "definition" of Systems Design Engineering (SYDE). This definition involves key words like holistic, multidisciplinary and global approach, but at the end of the day, the definition of Systems Design Engineering is what you decide it to be. SYDE is "choose your own adventure engineering" with the most options of electives and specializations within the engineering faculty. With a solid technical background, Systems gives you the ability to go places only limited by your imagination. Welcome to the adventure of a lifetime!

For your first year, you will be learning the traditional engineering basics, but you will also have two specialty design courses. Be aware that all core courses are SYDE specific, which means that most outside sources of tutoring won't be applicable to your course load.With that being said, your best resource for help is your classmates. You will meet the most amazing people in your class from different backgrounds and interests with whom you will be spending the next five years together on the sixth floor of E5. Systems is known as a tight-knit program for a reason!

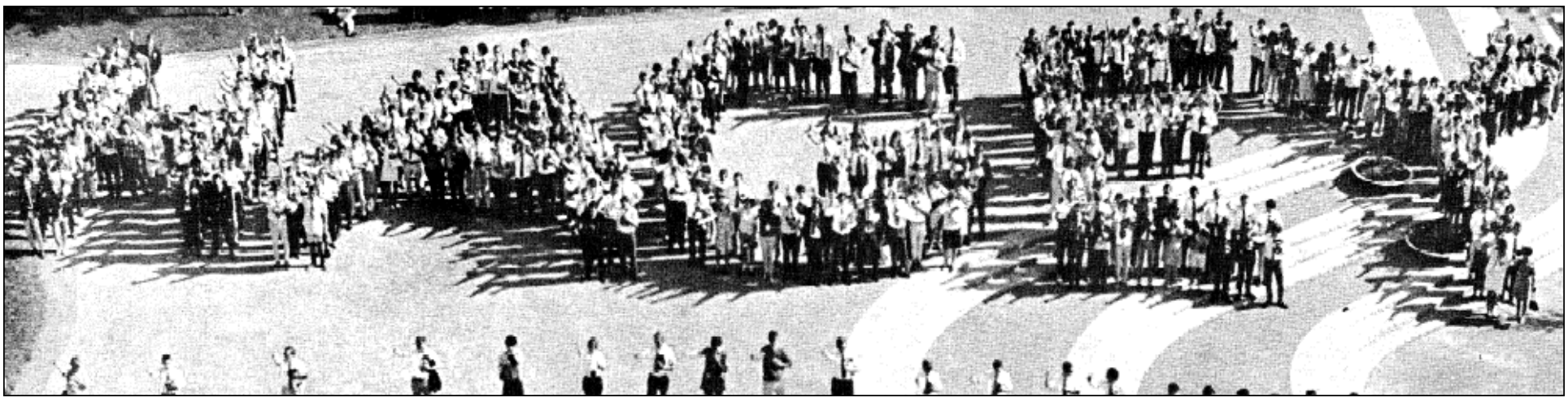
With a wide selection of co-op jobs, SYDE students have worked in ergonomics, project management, software development, user interface design and even abroad with fellowships within EWB. Systems students excel in finding the best jobs in fields accross engineering.

All in all, the engineering is tough and Systems Design presents its own challenges. If you don't know what you want to do, don't worry. You will figure it out through your co-op jobs, your courses, and your experiences over the next five years.

Good Luck!



The History of Orientation Week at Waterloo



ROSS RICUPERO
CIVIL '09

The oldest recorded discussion of Orientation Week at the University of Waterloo is from the October 13, 1961 edition of The Coryphaeus, the University of Waterloo's first student newspaper. It's a simple article that welcomes freshman engineers to the school and the Engineering Society. It also gives thanks to Dave Smith, chairman of the Initiation Committee (Orientation used to be called initiation) and announces the Initiation Dance as part of WA-WA-WEE '61 (The old name of Warrior Weekends, an event that rab up to 2011).

The September 27, 1963 edition of The Coryphaeus gives even more details on "initiation" with an article discussing the school-wide scavenger hunt (apparently they acquired things like wagons, tractors, hay bales, snow fences and pictures of someone named Brigitte Bardot), a game to measure the length of a city block with hotdogs, a challenge to make a line of pennies stretching from Kitchener City Hall to Waterloo City Hall (which is apparently approximately 140,000 pennies), the (seemingly) annual 'Froshman Hop' dance, and some unknown event called the 'Hootenanny'. Each faculty organized their own Initiation program and worked with the Orientation Committee, which ensured the individual programs worked across the school.

In '64, '65, and '66 even more traditions had started to form. First year students from Arts, Science and Engineering (the only faculties at UW at the time) were all awarded 'beanies' or caps at the beginning of (the now called) Orientation and the cheer of "I'm a dirty rotten dead horse and I stink!" was used throughout the week, accompanied by students falling to the ground, laying on their back and sticking their arms and legs in the air. The Frosh Queen competition, in which 'Freshettes', or female first-year students, competed to be elected to the position complete with sash and crown, became a major event. The penny-drive also became Slave Day, where first-year students would be sold to members of the community to help them with whatever they choose, or for charity purposes.

In 1967, Stewart Saxe, a political science student and head of the Orientation Committee, re-imagined the entire week and introduced the big-brother concept. All first year students (there were only 2,200 in 1967, a third of the 6,000+ we expect this year) were divided into groups of ten which were overseen by Archons, a single upper-year student leader, which stayed with the group the entire week. This year continued the method of each society running their initiation programs, and the Orientation Committee overseeing the entire thing.

1967 was also the first year that an aerial photo from Orientation Week was published. The 360 strong group spelled "Hagey" across the Arts quad to salute then-president J. G. Hagey (the same Hagey that Hagey Hall is named after).

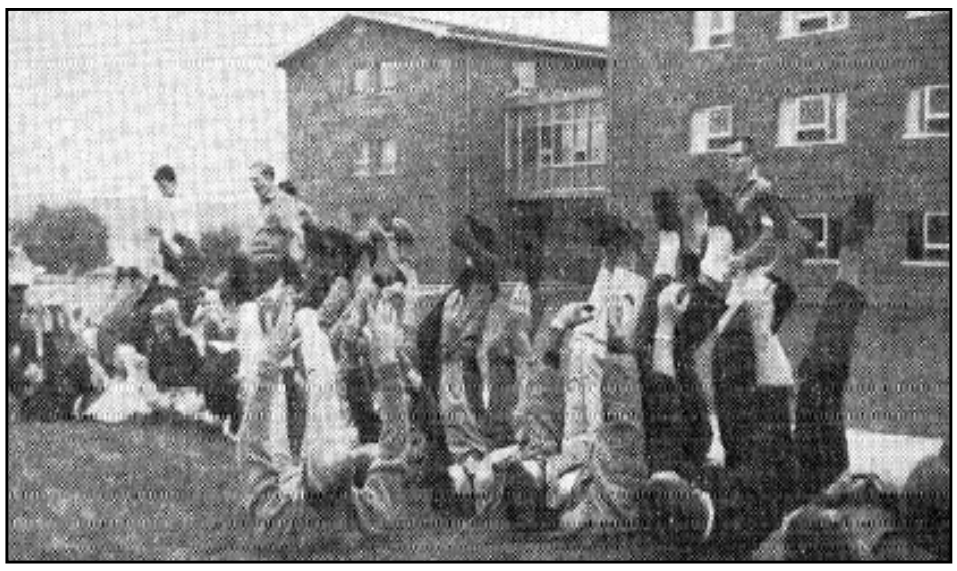
It was during the late 1960s that the bulk of Orientation Week was moved to the control of the Federation of Students (FEDS). While the student societies still planned and ran programming for their specific faculty, many of the larger events would be planned by FEDS. It's from this point throughout the 1970s that FEDS took the Orientation Week of the 1960s and made it into a month long Orientation program with varied social or educational events each day from the start of September to the end. This included many high-profile concerts such as Meatloaf, Gordon Lightfoot and Ike and Tina Turner, as well as speeches from major political figures, cabinet ministers, MPPs and radical leaders.

While the much expanded programming offered more choices for incoming students, it was during this time that student apathy and low attendance began to take its toll. Concerts lost money (the Ike and Tina Turner concert lost $6,000 in 1972, which is over $30,000 today accounting for inflation), speeches went unattended and acts cancelled or simply didn't show. Reviews of the Orientation program varied wildly from condemnation to enthusiastic.

It was during this time that the Engineering Orientation program moved away from the Slave Day charity and began running the Bus Push charity (which has continued annually since then in the Winter term). 1969 also saw the Engineering Stag event of Orientation Week, which was little more than a drunken strip-tease for first-year students.

It wasn't until 1978, when the LLBO took dispute with the University's 'beer tents' that programming needed to be reduced and concerts rethought. The LLBO refused to license the outdoor tents that were part of Orientation Week in years past, reducing the amount of money that the Orientation program had to use, preventing headline concert acts and major guests.

Then began the dark years (or the years where written records become spotty). It's expected that Orientation Week continued this way for the 1980s and early 1990s. Student societies continued running programming for their faculties, and the Federation of Students continued running the overall program. It was during an unknown Orientation Week during the 1980s that the Education Committee was founded, and that the engineering hardhats became a major symbol. These have stayed as key components of Engineering Orientation Week since then. The oldest record of the Education Committee is an Orientation Week video from 1988 and hardhats could be over a decade older than that.



At the end of the dark years, Engineering Orientation Week was a tight, multi-day program packed with events. Incoming students would go through a program similar to the program we have now, but that had very distinct differences. In 1993 a UW Orientation Manual was produced and distributed to the groups running the faculty programming and soon after a major part of Orientation Week today was founded; the Federation Orientation Committee (FOC). The goal with FOC was to have better collaboration between the independent groups running various Orientation Week programming and the Federation of Students, allowing a more efficient Orientation Week overall. This started the process of Orientation Week becoming more regulated and controlled, something that would take the unorganized month-long Orientation programs of the late '70s and '80s, to the smaller, week-long programs of the '90s. By 1996, a schedule that resembles the modern day Engineering Orientation Week began to emerge: Aerial photos were taken (these can all be seen in the POETS lounge), they earned their hardhats, and they all met the Dean. However, they also competed in chariot races, paraded through town and had organized off-campus parties, events long since banned or modified.

It was during 1997 and 1998 that a new program started to address major concerns highlighted in an Orientation Student Survey conducted in 1994 and 1995. This survey concluded that there was a dangerous undercurrent of behavior across all Orientation programs. From discriminatory chanting to exclusive programming and a dependence on drinking, it was seen that there was a fundamental problem with Orientation Week; the leaders themselves. There was no formalized Orientation Leader training program for leaders to go through, and there were few checks and balances on the actions of these leaders too. People simply ran Orientation Week like it had been run for the year they went through it and every year before that.

It was because of this that the Provost's Advisory Committee on Orientation (PACO) was founded, and PACO training was implemented in 1998. This training, mandatory for all Orientation leaders, covered things like drinking and drugs, inclusivity and non-discrimination. While some students cried out that this was gutting the Orientation Week they knew and loved, it ultimately led to the modern Orientation Week we have now, which many believe to be better than ever before.

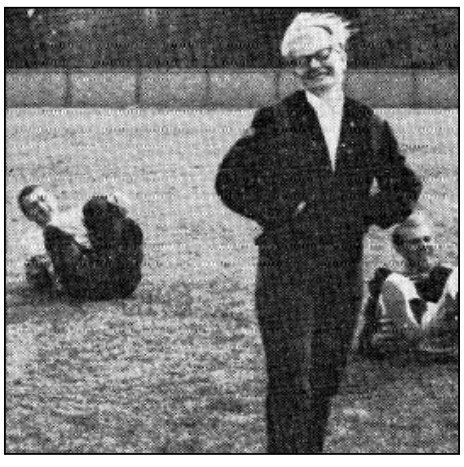
With the double cohort of 2003, a large percentage of students were now entering university at age 18; younger than the legal drinking age. This became a problem as many planned events during Orientation Week were 'wet' events where alcohol was served. A controlled environment was implemented, with 'beer gardens' allowed at certain events and each organizing group allowed to have a single 'wet' event for their faculty or residence.

By 2004, PACO was dissolved and we were left with Orientation Leader Training, the modern version of PACO leader training. 2004 was also the last year that Orientation Week officially included alcohol with a beer garden at the Saturday night Toga party. Once Orientation Week 2004 closed, alcohol wouldn't be part of the week again.

In 2012, Orientation Week is over 50 years old, involves over 8,000 first-year students, 1,000 upper year students, has a budget in the hundreds of thousands, and the support of countless sponsors and contributors. While it may be completely different from the Initiation of 1961, Orientation Week 2012 has built upon the past decades; all of the conflicts and problems, changes, successes and failures have been rolled into the week.

While it may not be perfect, it is a continuation of a tradition started soon after the University of Waterloo was founded, and it represents the unconventional history and future of this school.

(Editor's note: Some minor modifications made to the original article by Ross to keep the article current.)



Engineering and Co-op

ERIN MATHESON
4N CHEMICAL

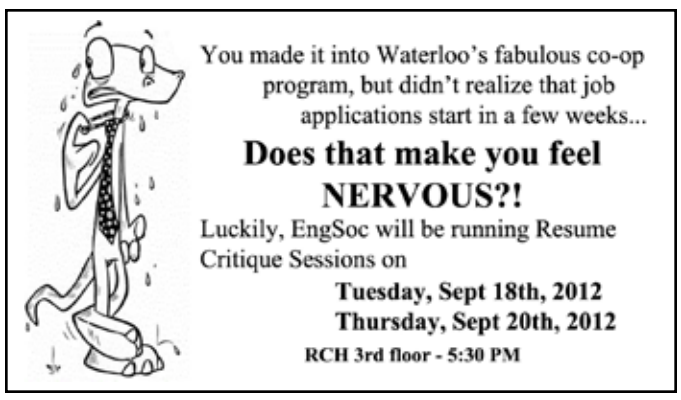
Now if there's one thing about Waterloo you've heard about – it's the co-op program here. Waterloo has the largest post-secondary co-op placement program in the country, and it's often the reason why so many students choose Waterloo over other university programs – I know that's why I wound up here! Although everyone's co-op experience varies greatly, here are some tips and tricks I've gathered over my time here.

Starting out in the co-op system can be a really intimidating experience, but that's ok! During your first round of applications, you and your classmates will be (for the most part) applying to your very first engineering-related jobs. It's a pretty daunting task! I know when I graduated from high school, I had worked at a Second Cup making lattes, and had a summer of work at a summer camp teaching kids how to rollerblade. Needless to say, when I was applying to research jobs in environmental and pharmaceutical fields, I had NO relevant experience. If you can relate to this, no need to worry, there are tons of resources that can help you!

When you first apply for a co-op job will depend if you are in a 4-stream or an 8-stream class. If you're in an 8-stream class, you'll be applying for jobs in the Winter term and be working next Summer. If you're in 4-stream, hold on to your hats because you'll be applying for jobs in a few weeks! First step to getting a great job: a killer resume. In your concepts class, they'll usually cover some basics regarding how to put together a good resume and how to upload it to our online job matching system; Jobmine. I'd recommend spending a little more time on it beyond your class though. The Engineering Society runs resume critiques the week before applications open, and it's a great opportunity to get experienced upper years to check out your resume and give you some job hunting tips. Check out the Engineering Society website for more information about this awesome service.

The next big step in the whole process: the interview. There are lots of different schools of thought on how to interview well, but my rule is always dress well, make sure you don't have bad breath, and be yourself! Interviews are always a lot easier when you're relaxed, and your interviewers get a better idea of the type of person you are. If it's been a while since your most recent interview, check out the Engineering Society's interview skills workshop to brush up!

Finally, the last piece of advice I can give is to take chances when it comes to co-op. If I could have changed anything about my co-op experience, I would have been more willing to try working in a new city earlier on. It wasn't until my third year that I left Ontario to work in Calgary, Alberta, and I loved every second of it! Moving to a new city where you don't really know anyone, or going after a new job in a different field can be really intimidating, but it can also lead to an unforgettable experience. This is the only time when you can truly sample jobs and cities on a 4-month basis, so why not be daring and try something new?



WatPD: Your Online Co-op Courses

KEVIN LIANG
3N CHEMICAL

WatPD is a series of online courses all co-op students must take during their co-op terms to develop professional skills. Engineering students must take PD20 and 21 in the first two work terms. After the core PD courses are completed, students will be able to choose three additional PD courses out of six options. These options are:

- PD3: Communication
- PD4: Teamwork
- PD5: Project Management
- PD6: Problem Solving
- PD7: Conflict Resolution
- PD8: Intercultural Skills

These courses are designed to improve students' employability and their workplace productivity. Many of the elective courses cover topics that will be very relevant to the workplace. For example, PD3: Communication covers many types of communication from proper behaviour during team meetings to effective email writing. PD5: Project Management introduces students to basic management science concepts. Topics in this course include basic project management techniques and practices such as planning, proposing, scheduling, budgeting, supervising, delegating and setting priorities. This is just a sample of some of the course descriptions. Full course descriptions can be found at uwaterloo.ca/professional-development-program/.

These courses try to be very broad in their scope and thus will apply to a variety of work environments. PD courses try to augment the transition from the class room to the work place. A majority of the topics can be naturally picked up after long exposures in a professional environment. These courses help accelerate this appreciation.

Since these courses are to be taken during the work term when students have full time jobs the work load is very light. Every course is a little different but they usually consist of weekly readings with an associated quiz or assignment. Each week's work can be easily done within an hour. Some students opt to complete the entire course in a single weekend and forget about it. In addition to this, these courses are pass/fail and the mark will not appear on a transcript. This means that in order to pass one must achieve at least 50% in the course.. Engineering students have six work terms and have to complete five PD courses, so in the unlikely event that a student does fail a PD course, they will have another chance to make it up.

Being Big and Serving Society

ZAC YOUNG
2012 JUNIOR FELLOW,
ENGINEERS WITHOUT BORDERS

Welcome to University of Waterloo, first year students! You are taking the first step into an exciting new chapter in your life; one undoubtedly filled with experiences that will sculpt your future. I would like to share with you a perspective on engineering and your journey as an undergraduate that has, to date, been an important grounding point for both the good and the bad times in my life at Waterloo. Perhaps it will stick with you into the coming years or simply provide a moment of reflection on what brought you to be reading *The Iron Warrior* amidst the first days of term number one.

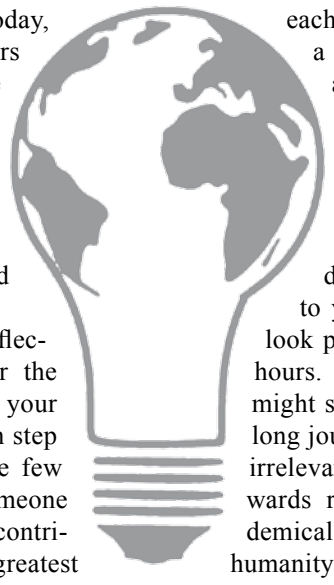
Engineering is as old as the first inklings of human innovation. From the first rocks struck together creating a spark, to the fire bellowing from the rockets of the Apollo 11 spacecraft bound for the moon, engineering has been the passion behind many of humankind's most extraordinary achievements. Engineers hold the distinct responsibility in society to develop the systems and innovations that bring tomorrow's world.

I pose the question: **How does an engineer embrace their role to serve society?**

Doctors are understood to give their service to the health of society. Lawyers are understood to give their service to a just society. It should follow that engineers have a service to give as well.

Engineers give their service to solving the critical problems that matter in our society.

There are countless inspiring engineers of the past and present that have made it their life's goal to improve the quality of human life and improve society using their unique engineering skill set. Consider James Watt, whose improvement to the steam engine was fundamental to the Industrial Revolution. The impact that his life's work made on the world is beyond practical measure. It can be said that without his contributions, the world would be a very different place. Today, our society needs engineers with the aspirations to make this kind of change too. As a student entering a premier engineering education and afforded the skills and community within it, these aspirations are abound and the potential present.



Pause for a moment of reflection. This may be one for the introverts, but try closing your eyes (after you reading each step of course) and follow these few thoughts: First, imagine someone who you idolize for their contribution to society – your "greatest human". Thinking of this person, try to feel the gravity of their passion and the invisible limits of their potential. After doing this, close your eyes again and resume that thought, but now imagine yourself and the change you would like to make as an engineer. Let this goal be lofty, enormous, and challenging to imagine. Make yourself believe that you can reach the same heights as the idol you thought of before. Finally, thinking about this big goal, close your eyes a final time and imagine yourself working towards that goal. Let your final feeling be that you can achieve it and more. Let that feeling be BIG!

I define "bigness" as believing in your limitless potential; it is that any person, with dedication and passion, can reach the goals in their dreams. What creates these idols and demands your admiration is their uncompromising dedication to their own dreams and pushing their limits each day. This bigness can be a motivator, a positive force and a confidence builder. Do you have an idea that seems unachievable? Put it in this mental space and consider it again. When that calculus assignment is due and you have had it up to your ears with integration, look past the next couple crappy hours. Finishing that assignment might seem like just one step in a long journey, and while seemingly irrelevant, it is a required step towards realizing that future. Academically, socially, and in all your humanity – this bigness lends to finding your potential. Embrace it with a deep breath and keep it in your mind.

So be BIG every day. Own your education, your potential, and your service; never put a limit on your imagination of what they can be!

We here at Engineers Without Borders are an organization of engineers and non-engineers who believe that the engineering has the potential to bring some of the greatest change to society. We strive to catalyze the systemic innovations that may bring the world's most vulnerable people to realize their full potential. This is a problem that matters to society at large, and we are tackling it today through our work in Africa as well as here in Canada. We believe we can create solutions to immense problems. This is what we call "Global Engineering", and it is an idea that EWB hopes can be an important dimension within the engineering community in Canada.

Global Engineers are socially minded problem solvers whose goal is to make a positive impact with their engineering ability and push the limits of their potential.

I believe that in order to create change around the world, we need to embrace an engineering culture that is passionate about delivering solutions and reaching new heights. Our Canadian universities are where the seeds of the next generation – your generation – of engineers are sowed. Through this education, students like you are empowered with the engineering skills that can be used to tackle the world's problems. So together, let's promote the Waterloo spirit of discovery and innovation. Push that spirit to its limits and believe that you and your peers can be the next James Watts of the world.

I implore you to contact me (zacyoung@ewb.ca) if you would like to talk more about this. I will be overseas with EWB in Zambia when this issue is in circulation, so I also encourage you to follow my blog (zacinzambia.wordpress.com). Please share your thoughts and help to cultivate the Global Engineering culture here in Waterloo and in your daily life. And most importantly, be BIG!

An Overview of Frosh Week Events

Schedule for Engineering students in On-Campus Residence. Software differences noted below.

	3 MONDAY	4 TUESDAY	5 WEDNESDAY
9:00 AM	MOVE-IN / CHECK-IN Residence and Physical Activities Complex * Also on Sunday, September 2.	HQ TIME & MEET THE DEAN Colour Group Headquarters	
9:30 AM			
10:00 AM			
10:30 AM			
11:00 AM			
11:30 AM			
12:00 PM		DEPARTMENT LUNCHES Various Locations	
12:30 PM			
1:00 PM		EARN YOUR HARDHAT Various Locations	
1:30 PM			
2:00 PM			
2:30 PM		AERIAL PHOTO St. Paul's Green	
3:00 PM			
3:30 PM		PASSAGE THROUGH THE POLYVERSE / SINGLE & SEXY Grad House Green/Hagey Hall	
4:00 PM			
4:30 PM	FLOOR DINNER Residence		
5:00 PM			
5:30 PM			
6:00 PM	UNIVERSITY WELCOME & PLAYFAIR Village 1 Green		
6:30 PM			
7:00 PM			
7:30 PM	MONDAY NIGHT Various Locations	VARIETY NIGHT Various Locations	ELPE (A-P) Physical Activities Complex
8:00 PM			
8:30 PM			ELPE (Q-Z, SOFTWARE) Physical Activities Complex
9:00 PM			
9:30 PM			
10:00 PM			WEDNESDAY MIXER Student Life Centre
10:30 PM			
11:00 PM			
11:30 PM			

Engineering

Aerial Photo

Taking place immediately after Earn Your Hard Hat you will head to St. Paul's green for an Aerial Photo. This is one of the only times until graduation that the entire class of 2017 will be in the same place for a photo. The photo design will reflect the theme, Imaginationland, and the finished product will hang in POETS for the duration of your undergraduate career and beyond!

ComEng

Hosted by EngSoc, join in for a night of hilarious comedy by professional comedians as a way to relax before class the next morning. Meet your new upper year friends and watch the Orientation Week awards show where we announce the winners of the week. Will the world be taken over or defended? Stop by to find out!

Department Lunch

This is a great opportunity for you to meet your fellow classmates, upper year students in your program, as well as your TA's and Professors. This is a great chance for you to learn more about your department, get useful tips on how to succeed, and have any questions about your program answered.

Software: Faculty Lunch is held in place of Department Lunch

Earn Your Hardhat

Earning your Hard Hat is one of the oldest traditions in Waterloo Engineering Orientation. The Hard Hat is a prestigious item awarded to incoming Engineering Students and is worn with pride by all. During this event you will, with your team, compete in several challenges centred around the 6 Pillars of Engineering. This is an event you won't want to miss out on, you'll be needing that hard hat for the rest of the week.

EngSoc Day

EngSoc Day::The Waterloo Engineering Society will play host to a fun afternoon of low-key activities. Come to POETS, the engineering student lounge, and see what the Engineering Society can do for you!

HQ Time & Meet the Dean

During this time you will get the chance to come in to your teams Headquarters and meet your fellow first-years as well as your leaders. You will get an intro to the week as well as a chance to meet the new Dean of Engineering, Pearl Sullivan. You will also get the chance to participate in fun icebreakers to get the day started and to see a virtual tour of the Engineering Campus.

Software: Meet the Dean will happen first, followed by SE 101.

Junkyard Wars

Our flagship event, Junkyard Wars, is exactly what it's name implies. Colour groups are challenged to solve problems and complete challenges using only recycled materials and scrap parts. This event is the true test of ingenuity, creativity and plain old smarts.

Eng 101

This is your chance to be introduced to the academic world of Engineering at the University of Waterloo. Faculty members along with a student panel will provide information and answer any questions you have about academics, co-op, counselling, and the fine balance of school and socializing.

Meet the Tool

This is the oldest and most sacred of traditions at Waterloo Engineering. This is a must see event where you will get to meet the Engineering Mascot 'The Tool'. Live it. Love it.

Software: You will partake in the first Meet the Tool session, followed by Welcome to Math! and Earn Your Tie.

All photos credited to Frosh Media, Anish Bhutani, Chris Gilson, Michael Seliske, Jeremy Wing.

Engineering Cross-Campus

6 THURSDAY	7 FRIDAY	8 SATURDAY	9 SUNDAY

JUNKYARD WARS
Village 1 Green

* Student Teams Lunch at 11:00 AM

ENG 101 / MEET THE TOOL
Modern Languages / Fed Hall

PASSAGE THROUGH THE POLYVERSE / SINGLE & SEXY
Grad House Green/Hagey Hall

MONTE CARLO
Student Life Centre / Physical Activities Complex

FYE: WATERLOO
Physical Activities Complex / Math Buildings

SCAVENGER HUNT
Colour Group Headquarters

BLACK AND GOLD DAY
Warrior Field / Columbia Icefield

SATURDAY NIGHT
Student Life Centre / BMH Green

ENGSOC DAY
POETS Patio / Carl Pollock Hall

COMENG
Fed Hall

Cross-Campus

Black and Gold Day

Come join us for our annual Black and Gold Day! Show your Warrior pride by coming out to the carnival and cheering on our Varsity Football team. Don't forget to wear your black and gold!

Floor Dinner

Meet your fellow floormates and your Don as you learn more about your residence community and take part in your first floor dinner.

Monte Carlo

Orientation's annual semi-formal comes complete with red carpet, live music, a mock casino and more. Dress to impress with this night of class and elegance.

Move In / Check In

Move into your residence by picking up your keys and move in packages from your residence Front Desk. Remember to have government issued photo ID or your Watcard ready when moving in.

Once you're done moving in and you don't already have your Watcard, head over to the Student Life Centre (SLC) to pick up your student card.

After you have your Watcard, proceed to the Physical Activities Complex (PAC) to check-in for UWOW12 by picking up your wristband and swag bags.

Passage Through the Polyverse

During this event you will travel through various mystical lands with the help of your leaders. During your adventure you will get the chance to participate in fun and informative mini-events centred around various services offered on campus. Through the event one of you leaders, designated as your champion will assist you in completing tasks to earn items that will help you along your quest.

Scavenger Hunt

The infamous Engineering Scavenger Hunt is where the colour groups have their last chances to try to gain points and win the overall competition of the week. There are countless activities for everyone and also a never-ending acquisition list with items for you to collect. This is the final flagship Engineering event and is sure to not disappoint!

Software: Dessert of Champions and The Search for the Lost Antiderivative is held in place of Scavenger Hunt.

Single & Sexy

An original drama production by the University of Waterloo, this hilarious play deals with the challenges of living away from home and out from under the parental eye for the first time. Issues explored include sexual harassment, orientation, sexual assault, transmitted infections, pregnancy, love and succeeding in University. With several TV and music video farces, the play promises not only a humorous view of student life, but also delivers crucial information about the topics discussed and how to find help regarding those issues.

Saturday Night

This is the final night of Orientation programming! A giant Toga dance party at BMH Green, coffee house, a bonfire, improve and magic will help close the week with a bang!

University Welcome & Playfair

Get your official Waterloo welcome by getting together with all 6000+ incoming first-year students for the largest icebreaker you'll ever experience! Also a special appearances from the University's President, Feridun Hamdullahpur, and Feds' President, Andrew Noble.

Wednesday Night Mixer

Get a chance to mix & mingle with new students from other faculties, with dances, sports, video games, and more. You can also earn some sweet interfaculty swag!

Welcome From the Engineering Society Executive

LEAH ALLEN &
YASSER AL-KHDER
PRESIDENTS

Welcome Class of 2017! We are your Engineering Society Presidents: Leah Allen (A-Society) and Yasser Al-Khder (B-Society).

As a student this Fall term, you will likely see a lot of Leah, as the on-stream society in the Fall term is the A-Society. Whichever of us you encounter, we want to encourage you to come up and talk to us about school, social events, the society or yourself whenever you get the chance. We are friendly people, we promise, and we want to get to know each of you so we can best represent your opinions through the engineering society.

Not really sure where you'll run into one of us? We'll our first EngSoc event of the term is on Sunday, September 9th where you can enjoy a free BBQ and watch the headshave from 2-6:30 PM then join us for ComEng (a comedian show) at Fed Hall at 7 PM. Also, you can try coming to an Engineering Society meeting, the first one will be on Wednesday, September 19th at 5:30 pm. The meeting will introduce you to council, the doings of the Engineering Society, and also, give you free dinner! The meeting is the PERFECT place to start getting involved in Engineering Society things or just to find out what the Engineering Society is up to.

If the meeting isn't an easy enough way to meet your presidents, not to worry! The presidents hold office hours in the Engineering Society office, CPH 1237. Also, we make an effort to attend events, so stop by and talk to us at any one of the Engineering Society events. Check www.engsoc.uwaterloo.ca/events to see what events we offer!

We're looking forward to working with you and we wish you all the best in your time here at Waterloo!

Engineering Society 'A' Executive

Engineering Society 'B' Executive

DAVID BIRNBAUM &
PETER ROBERTSON
VICE-PRESIDENTS FINANCE

Hi everyone!

We are the Vice-Presidents Finance (VPF) for the Engineering Society 'A' and 'B.' We are responsible for the allocation of the refundable $14.72 fee each student pays each term to use the Engineering Society's services. Everyone will get to know David Birnbaum this fall as the VP Finance for Society 'A'. Those of you in 8 stream will get to meet Peter Robertson as VP Finance for Society 'B' starting in January.

The primary role of the VP Finance is to manage the Engineering Society's budget by way of effectively dispersing funds to the many enjoyable events and services put on each term by directors. Directors submit their individual budget proposals to us, which we then use along with the known operating costs of the Society to prepare a budget to be presented and approved at the second meeting of the term. The VP Finance is also in charge of allocating a predetermined amount of money for sponsoring various student teams and clubs. Groups can submit an application and make a brief presentation at the Sponsorship Committee meeting, and then the sponsorships proposed by the committee will be ratified at the fourth meeting of the term. The VPs-Finance also are in charge of the Engineering Society Capital Improvements Fund (ECIF), which is a fund to provide lasting improvements to the school, and Engineering Society services. Anyone can submit ideas for the Fund, so be sure to submit your great ideas online, or just come talk to one of us!

Another part of the VP Finance's portfolio is to manage the Engineering Novelties shop, where you can purchase Waterloo Engineering clothes, coffee mugs, tools, apparel and much much more. It is open 11:30AM to 1:30PM each day of the school week and is located in the corner right next to POETS in the CPH Foyer. We will be taking over the Foyer during the first week of classes, come check us out for some great deals! Just look for David. Again, if you have any ideas for items you want to see in the store, just let us know!

Finally, if you are considering getting your Engineering Society fee refunded, we really encourage you to check out all our great services first. Come out to POETS, head over to the C&D shop, come to the Beginning of Term party, and check out the services in the Engineering Society office, or at www.engsoc.uwaterloo.ca. We also always welcome new ideas and it is our goal to serve every Engineering student as effectively as possible. To contact us you can email vpfinance.a@engsoc.uwaterloo.ca (David) or vpfinance.b@engsoc.uwaterloo.ca (Peter). Have a great Orientation Week and we hope to see you all at the first EngSoc meeting on Wednesday, September 19th!

ANGELA STEWART &
CATHERINE DECLARO
VICE-PRESIDENTS INTERNAL

Welcome from Angela and Cat! We're the Vice-Presidents Internal for Society 'A' and 'B' respectively. We work with a dedicated team of volunteer directors to put on various social, athletic, and cultural events throughout the term. No matter what you're interested in, EngSoc has something for you. Be part of a Waterloo Engineering tradition at Scavenger Hunt and test your trivia knowledge at Genius Bowl. Feeling artsy? Enjoy our coffee houses, talent shows and dramatic productions. Check out the EngSoc calendar at engsoc.ca for details for many more events.

Need some downtime between classes? Step into POETS, the faculty lounge in CPH 1337. Watch a movie on our projector, enjoy the comfiest seating around, and meet some awesome people. POETS transforms into the only faculty bar on campus when licensed on Thursdays and Fridays from 12-4pm. Be sure to come to the Beginning of Term party (BOT) on Friday September 14th in POETS. Bring your WatCard for a guaranteed good time.

We want you to have an awesome academic and professional life too, so we oversee the student services provided by the Engineering Society. These include resume critiques, exam bank, scholarship bank (with more $1 million in awards) and much more. EngSoc also hosts some amazing workshops including sushi-making, What I Wish I Knew In First Year, and free CrossFit.

If you have any questions for us or just want to say hi, shoot us an email at vpinternal@engsoc.uwaterloo.ca . We wish you all good luck and hope to see you around!

Welcome From the Engineering Society Executive

MICHAEL SELISKE, LISA BELBECK & ERIN MERKLEY
VICE-PRESIDENTS EXTERNAL

Orientation Week is an endless stream of information, and as you can probably tell already this issue of *The Iron Warrior* is no exception. The University of Waterloo Engineering society exists to serve you as an undergraduate engineer, providing opportunities in the school, the community and the rest of Canada. The VP External tries to assist with the final two items on that list by providing outreach opportunities in the community as well as representing Waterloo to various organizations both provincially and nationally.

For the next 4-16 months, the people tasked with this position are Erin Merkley (Mechanical '15), representing B-Soc which is all of the 8-stream classes in the winter, and Lisa Belbeck (Nanotechnology '14) and Michael Seliske (Computer '13), representing A-Soc this fall. A new VP External will be elected to represent all 4-stream A-Soc members in the summer.

So what will the three of us being doing for you? Beyond helping the rest of the executive team run the Society, the VP External is hard at work, helping directors organize outreach events which allow Engineering students the opportunity give back to the community. We also have a representation section to our portfolio which has us traveling to various conferences around the country sharing ideas with other societies, while voicing the Waterloo perspective on national and provincial issues pertaining to Engineering.

The VPs External are not the only people who attend these conferences, some of the larger ones have room for additional students to attend in order to develop their leadership skills and share ideas with other schools. This means that you have the opportunity to attend an awesome engineering conference, so keep your eyes and ears peeled for various conference opportunities over the course of your undergraduate career at Waterloo. Pay close attention to your inboxes in January when we will be opening applications for the First Year Integration Conference (FYIC) being held in February at Lakehead University in Thunder Bay. This conference is specifically for first years and is meant to give you an introduction to the world of external organizations including the provincial (ESSCO) and national (CFES) level student run organizations as well as the professional organizations you will need to interact with such as Professional Engineers Ontario (PEO) and the Ontario Society of Professional Engineers (OSPE). There is also a conference, which will be held in November at Concordia University, Quebec where will be looking for excited first year students interested in Women in Engineering, this conference is called NCWIE (National Conference of Women in Engineering). We would encourage you to visit our website if you are curious about these organizations or read about ESSCO and CFES on page 5.

The VPs External are also in charge of assisting their commissioner with the Waterloo Engineering Competition (WEC). WEC is a design/consulting engineering competition that serves as the school level qualifiers for the Ontario Engineering Competition (OEC). There is a junior design category for first and second year students so keep an eye out for registration in October, as the Compeition will be held on November 2-3. For more information about WEC, check out wec.uwaterloo.ca.

The VPs External and the rest of the executive would always like to hear your feedback, thoughts, questions or even a joke you think is funny. Please email us at vpexternal.a@engsoc.uwaterloo.ca (Lisa and Mike, A-Soc VPs External) or vpexternal.b@engsoc.uwaterloo.ca (Erin, B-Soc VP External). Be ready for a fun and exciting term!

DEREK THOMPSON, MEGAN MCNEIL & ORYSIA SOROKA
VICE-PRESIDENTS EDUCATION

Hey 2017's! We are your Vice-Presidents Education. The role of the Vice-President Education is to represent the engineering student body in all academic concerns. More specifically we represent the Society on a variety of committees including the: Faculty Undergraduate Studies Council (FUGS),

Senate Undergraduate Council (SUC), WatPD-Engineering Curriculum Committee (CC), Cooperative Education Council (CEC), Coop Students Council (CSC), and Engineering Coop Working Group (CWG). The Society also offers valuable academic services to help with your smooth transition into first-year engineering. Keep an eye out for resume critiques happening on campus and visit the exam bank online for helpful practice midterms.

After the insanity of orientation has finished, classes will inevitably begin. Within the first week or so, each class will elect academic representatives. These representatives will work directly with your professors and faculty to ensure you are getting the most out of your education here at Waterloo. Choose them wisely!

Now, for those of you who are wondering which society we represent - Derek Thompson is the VP Education for the A Society and will be your representative for your first four months here at Waterloo. Megan McNeil and Orysia Soroka are the VPs Education for the B Society and will be starting in the winter term.

Since Nanotechnology has 8 month coop terms and thus alternate between societies, Megan and Orysia are a duo exec team. Megan will be the on-term VP Education for Winter 2013 while Orysia will be on-term for Fall 2013.

All three of us have your best interests in mind for everything related to your academics and cooperative education here at Waterloo. Feel free to contact any of us if you have any questions, concerns, or no one to share your jokes with. The emails to reach us are vpeducation.b@engsoc.uwaterloo.ca and vpeducation.a@engsoc.uwaterloo.ca. Enjoy your first week on campus and never hesitate to say hello!

Engineering Society Directorships and Events

JEAN NASSAR
MENTAL HEALTH AWARENESS DIRECTOR

Having good mental health is important in avoiding stress and having fun, even while working hard. UW has lots of help available, including awesome Engineering Counselling in CPH 1320.

Once in a while, try to take a break from your problems, clear your mind, and refresh. Last April, we had specially trained rehappification puppies come to POETS around final exam time. We plan on doing it again, not once, but twice (before Hell Week and finals, and maybe sometime random to boot). We have a couple of other surprises as well, so keep your eyes peeled and if you see me anywhere, feel free to talk.

A new term is starting, and everyone will be busy with school/coop (and life). Enjoy yourselves and do your best. Hakuna matata.

LYDIA TERISNO
WOMEN IN ENGINEERING DIRECTOR

In your first year, have you ever wanted to get involved but are unsure on how to start? Have you wondered where to continue your hobbies in University? Wouldn't life be easier if you had a mentor with similar interests that can answer all of the above?

University of Waterloo has always been one of the best in outreach programs, especially in improving female enrollment for the Faculty of Engineering. For Fall 2012, we are introducing Women in Engineering First Year Mentorship Program to continute our outreach initiatives.

You can be a part of this by becoming a mentor! The only requirement is being a female, finished at least 1A, and you will be in Waterloo in Fall. You are going to be matched with 2 to 3 mentees based on program and interests. We are planning 2 to 3 events for the term to keep you engaged with your mentees. Besides that, your communication with your mentees will be decided by you! For instance, emails, texts, phone calls, Skype or talking directly with their mentees are viable options. You will make new friends and improve your communication skills through this program.

Join our facebook group at http://www.facebook.com/groups/wie.mentorship/ for updates and registration link.

KATHY HUI
SUSHI WORKSHOP DIRECTOR

There will be two sushi workshops this term; this means FREE SUSHI! My name is Kathy Hui and I am prepared to help you get your umami on. Get out your agendas and mark your calendars, the dates are: Tuesday October 2nd, and Tuesday November 27th. This is better than AYCE Sushi. No more ridiculous wait times, no more "Oh sorry all we have left are cucumbers", and best of all… no mula needed. The fish will be fresh, the avocados ripe, the crab real, and the wasabi STRONG. By the end, your chopstick skills will be fly-catching good, you will be able to eat wasabi by the spoonful, and you will master at least three Japanese words. Money back guaranteed. Feel free to contact me at kthui@uwaterloo.ca

Engineering Society Directorships and Events

KATE HEYMANS
COMMUNITY OUTREACH DIRECTOR

Welcome to Waterloo! Engineering A Difference is a brand new initiative being launched this term and we need you. This initiative is geared towards getting you out into the local KW community and helping out people who could use your help.

We've got a list of projects which include everything from mentoring kids to training guide dogs but they need your help. If you're interested, keep an eye out for posters and check out: uwaterloo.ca/engineering/about/community-outreach/engineering-difference/

Thank you,
Kate
EngSoc Community Outreach Director

ANGELA STEWART
VP INTERNAL

Welcome to Waterloo Engineering, where our motto is 'work hard, play hard'. EngSoc has a variety of events to get your heart rate up. Enjoy pickup soccer, dodgeball, or volleyball, or play in the interschool hockey game. Unwind between classes with pool or foosball in the Poets lounge. Want more? Check out these events!

FREE CrossFit/Nutrition Workshops

CrossFit is the strength and conditioning program used by police academies, military units, elite athletes worldwide….and now Waterloo engineering students! The program scales load and intensity so you can improve your fitness regardless of experience level. Meet at the POETS patio Sunday, September 30th at 2pm for an amazing outdoor workout. Stick around after for a nutrition workshop in the Poets lounge at 3pm. Join us to learn how to properly fuel your body for peak academic and athletic performance.

Paintball

Bond with friends and make new ones when EngSoc goes paintballing at Flag Raiders outdoor complex in Kitchener on Saturday September 29th. Tickets will be sold in the EngSoc Office (CPH 1327) and will cover your entrance fee, equipment rental, transportation, and 100 paint balls. Spots are limited so get your ticket ASAP!

Running Club

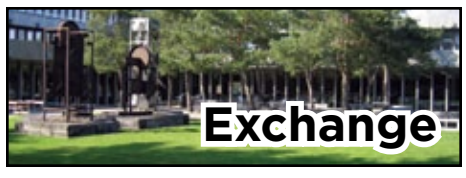
Lace up those sneakers, because the Waterloo Engineering Running Club is back for the fall term! Everyone is welcome, regardless of experience level. We have groups for many distances and paces. Challenge yourself, meet some great people, and improve your fitness! Check the EngSoc calendar at engsoc.ca for regular meeting times and locations.

NOAH HOGAN
ENGPLAY DIRECTOR

The lights come up and 20 people on stage stare at the body of their host in astonishment. The lights come up and a bloodstained man with a chainsaw attached to his handless arm is singing about zombies. The lights come up and there are actors in Shakespearean garb talking about how Shakespeare is stupid. These are just some of the scenes that have been seen in past EngPlays, Engineering's very own theatre production. Every term a play is put on by Engineering students where everyone is welcome to try out. If this is something that excites you, then I recommend you get involved as: an actor, a producer, light or sound crew, stage manager, or even the director! If theatre is not your thing but you still enjoy being entertained then be sure to keep an eye open for when EngPlay will be playing! It's always a great time and reasonably priced!

KATHY HUI
EXCHANGE DIRECTOR

Hello! Attention to all international exchange students and students curious about exchange! I'm Kathy Hui, this term's exchange director. I've got two events planned this term for you. The first is on September 25th and is a simple get-together where we can get to know everyone, answer any questions and see what kinds of events you like. It's essentially some good chill time with zero levels of awkwardness. The second will be on October 12th, and it will be an international potluck! Keep a lookout for details! Feel free to contact me at kthui@uwaterloo.ca



ANGELA ROSSI
POETS DIRECTOR

Have some time to kill in between class? Looking for a place to meet other awesome engineers? Come to the Engineering POETS Pub located in CPH. It's a comfortable lounge where you can watch movies and shows all day and a great place to play foosball or pool with your friends. On Thursday and Friday afternoons, POETS becomes the only faculty pub on campus. Come and try a POETS Warrior Lager, specially brewed for thirsty engineers.

There are three pub nights that are run by the POETS Managers every term: Beginning of Term (BOT), Middle of Term (MOT), and End of Term (EOT). Check out the Engineering Society (EngSoc) website and mark your calendars! Be ready to come dressed up in costume, as each OT party has a theme.

If you need a nice place for a class party or any other special event, POETS can also be privately booked. In the past, POETS has also been host to Open Mics, Coffee Houses, Game Nights, Foosball Tournaments and many many more!

So come, check out and enjoy the POETS Pub – its run by students, for students. Oh, and don't worry, the people aren't staring at you when you walk in the door, they are watching the movie that is playing above your head.

PATRICK MIKOLAJCZAK
P**5 DIRECTOR

Hello there Ladies and Gentlemen,

Today, we will start off in a quick lesson about what P**5 means and stands for in our engineering community. I know I know, classes haven't started yet and I am already making you learn.

Paul and Paula Plumber Participation Points. [p-to-the-five] P^5, P to the 5 (noun)

1. Is a term-long competition between all onstream classes with the purpose of encouraging friendly class competition, promoting EngSoc event participation and rewarding spirited and involved classes.

In essence, the idea of P**5 is to get people out of their seats and enjoy what engineering has to offer by providing the incentive of class points when classes come out together and cheer for each other. Different ways you can collect points apart from the traditional engineering events is hosting class parties or get togethers or doing anything together as a class. Remember to document your shenanigans for proof for the P**5 directors. At the end of each semester, there are normally 3 winning classes who all win cash!

More information can be found on the web at www.engsoc.uwaterloo.ca/classes/p5 . There is huge list of potential points, so go out there and catch'em all.

ADAM KLETT
WEC COMMISSIONER

Looking for a way to prove to everyone that you know how to engineer? Want to set yourself away from the pack with some hands-on experience? The Waterloo Engineering Competition is the answer. We offer seven unique competitions of which first years can participate in Junior Design, Consulting and Sir Sanford Fleming Debates. Competitions are usually done in groups of two to four. The main objective of these competitions is to teach the hands-on design cycle and to allow students to demonstrate innovation, resourcefulness, and technical thinking.

Junior design offers students the ability to design, build and test (from scratch) a solution to an engineering problem. One past example was to move 'mining-ore' down a small-scale mock mountain terrain using basic craft supplies.

Consulting features a figurative solution to a macro-scale problem. A previous example was to solve the problem of annual flooding around Winnipeg due to snowmelt. Another problem was to improve Waterloo's transit initiatives.

Sir Sanford Fleming debates features a formal head-to-head debate on unresolved issues of importance in society with particular interest to engineers. An example might be to debate energy policy in Canada or the ethical responsibility of engineering as a profession.

More info can be found at wec.uwaterloo.ca. Watch for posters regarding sign-ups in October or contact us directly at wec@engmail.uwaterloo.ca. Overall, first year is what you make it, so get out there and try things like WEC!

MATT MITCHELL
CHARITIES DIRECTOR

Interested in Charities?

The Engineering Society supports several charity organizations through their plethora of charity events. This article is just a brief overview of some of these events. One of the first EngSoc events of the term is the Charity Head Shave, which happens Sunday, September 9th in the afternoon before ComEng. The Head Shave is a free BBQ where students bid for the rights to shave Orientation Leaders' heads, all in support of the Canadian Cancer Society. Now Frosh Week is over and maybe you missed your chance to purple yourself or just want to do it again, Purpling for Charity is that opportunity. Most often done in support of the Alzheimer's research, set a goal for friends and professors to donate to get you purpled. One of the big charity event run during Fall terms is Movember. If you are not familiar with Movember, it is an event that takes place during the entire month of November to raise awareness about prostate cancer. Throughout the month, you'll notice many students, faculty and staff growing moustaches (or in some cases attempting to). Prizes are given out to various participants for having an invisi-stache, the bushiest stache, or being the top fundraiser. Other events that run from term to term are wheelchair basketball, bus push, and pancake breakfasts.

Student Design Centre

PETER TEERTSTRA
DIRECTOR, STUDENT DESIGN CENTRE

The Student Design Centre (SDC), located on the first and second floor of Engineering 5, is home to twenty-two of the Faculty of Engineering's student competition teams. The largest facility of its kind in North America, the SDC provides work bays for teams as well as special purpose spaces for sanding, painting, engine testing, electronics assembly, etc.

Here are some typical questions that students have about student teams:

How do I join a student team? Simple… email or walk into the team work bay and say "I want to join your team." Recruiting new members is one of their biggest challenges for a team – so they will be really happy to meet you!

Why should I join a team? Being a member of a student team looks great on your resume - companies are always looking for students with practical, hands-on experience. Also being on a team gives you lots of experiences you won't get in a class room. And it's fun!

Will I be able to handle the extra work load? Absolutely! You can be an active member of a student team by participating as little as 1-2 hours a week.

The SDC is holding a Recruiting Open House on Tuesday, September 18 from 3:00 to 6:00pm. Be sure to stop by to visit with the teams and get more information.

Student Teams and Groups

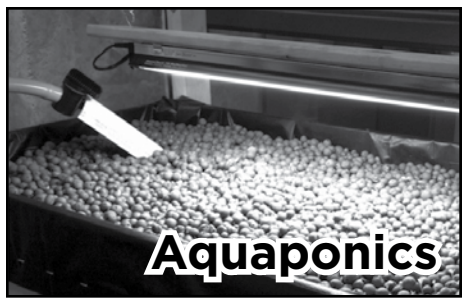
GURHARI SINGH
UWAFT

Since 1996 the University of Waterloo Alternative Fuels Team (UWAFT), have been redesigning production vehicles to run on alternative fuels such as propane, ethanol, hydrogen and electricity. Currently UWAFT is participating in the EcoCAR 2: Plugging In to the Future competition, which challenges 15 schools across North America to redesign a 2013 Chevrolet Malibu to reduce fuel consumption and emissions while retaining consumer acceptable features. Waterloo's entry is a Series Plug-in Hybrid, which allows for 60 km of electric driving, after which a flex fuel engine acts as a range extender. UWAFT is always looking for new students. Roles for computer and electrical engineering students include design and construction of the vehicle control systems and human-machine interfaces. Mechanical and Mechatronics students design and build batteries and engines. Chemical and Nano students can help investigate innovative emissions management technologies. To get involved, email us at questions@uwaft.com.

DOUGLAS THORNS
UW AQUAPONICS

UW Aquaponics (UWAQ) was established in 2011 as a means of increasing sustainability initiatives on campus. Using a combination of aquaculture and hydroponics, aquaponics is more efficient than conventional agriculture and provides both organic produce as well as a renewable fish supply. We seek to innovate and raise awareness of aquaponics, taking advantage of UW's facilities and the skills gained through our academic experiences at the university.

The goal is to build a rudimentary 30 gallon aquaponics system containing low needs fish, simple vegetables and herbs. We are currently working on improving our system as well as educating and engaging with the community, both locally within the region of Waterloo and at other institutions. UWAQ is about green innovation and a love of healthy, local food. For more information please visit aquaponics.uwaterloo.ca/.



NICK MULDER, KRISTEN SPERDUTI & ALEC ESPIE
CLEAN SNOWMOBILE TEAM

Have you ever thought about riding a snowmobile? This is one of the growing power sports in Ontario and throughout Canada. The Clean Snowmobile Team is committed to making this sport more enjoyable, affordable and environmentally friendly for Ontarians and people around the world. We compete in the clean snowmobile challenge every year in Houghton, Michigan. The objective is to improve fuel efficiency, convert for ethanol, reduce noise, and lower emissions; all while improving performance.

This year our platform consists of a 2009 Skidoo Renegade XP chassis along with an Arctic Cat T660 Turbo Engine. Up to this point we have implemented several different design projects but are always looking for more great ideas!

See you on the trails,
UW Clean Snowmobile Team
For more info visit sled.uwaterloo.ca

ANDREW FISHER
CONCRETE TOBOGGAN

Have you ever dreamed of hurtling down a steep icy hill on a big slab on concrete? Welcome to the Concrete Toboggan Team! Our team of undergraduate engineering students design, construct and race a toboggan that must hold five students! The toboggan must have a concrete sliding surface, a steering system, a braking apparatus, a protective roll-cage, and must be less than 300 pounds. Teams from across the country gather every winter to present their creations and participate in the annual Great Northern Concrete Toboggan Race (GNCTR)! The Concrete Toboggan Team is always looking for interested, committed, and hard-working students to join the team. The team is open to students from all engineering programs. We welcome everyone with any level of experience - we all started out with no idea with what we were doing!

Website: www.eng.uwaterloo.ca/gnctr/

ERIN MATHESON
ENGINEERING JAZZ BAND

The Engineering Jazz Band, also known as With Respect to Time, is a collection of engineering and non-engineering students who love to play jazz, funk, rock, swing and anything in between. From the Brian Stetzer Orchestra swing standard *As Long as I'm Singing*, to the funky back beat of Herbie Hancock's *Chameleon*, WRTT has something for every one.

With Respect to Time is student run, student directed, and student played. All students are welcome. There are typically some graduate students and some students from other faculties who play in the band every term. There are no auditions; everyone is welcome. We are a laid back group of musicians who just want to have fun and blow our horns.

Stop by and say hi to us; we will be playing at Monte Carlo during Orientation week. We will have a sign up list there for anyone interested, or you can sign up during the first week of classes at www.engjazzband.ca.

What if you don't play a "jazz band" instrument? THAT'S OK! We have regular flute players, and we have had clarinet players, tuba players, violin players, and someone even played bassoon in the band once. If you want to play, we will work together and make it work.

We play many gigs throughout the term. We always host a charity concert at the end of the term to raise money for a different charity each term. We are also known to play at grad balls in the graduation season, events for incoming students such as U @ Waterloo Day, Canada Day, and many others.

JANICE COOPER
EWB WATERLOO CHAPTER

Engineers Without Borders Canada (EWB), founded by two University of Waterloo students, is a non-profit organization that works towards eliminating poverty. Chapters all across Canada use long-term development and systemic innovation to raise awareness and create change.

Our EWB student chapter is currently trying to increase the global engineering content in our Engineering curriculum. We are also involved in the process of making Waterloo a Fair Trade - certified city. Two Junior Fellows are also sent overseas every year to work on the ground with communities in Africa.

EWB is tackling an immensely complex problem; there is lots we can do, but not without our volunteers. Expand your horizons, and think critically about the world you'll start to engineer; join Engineers Without Borders!

BRAD MORRIS
UW-FIRST

Are you a FIRST alumnus? Do you want to stay involved in FIRST now that you are a student at UW? UW-FIRST is a new student team dedicated to promoting FIRST in the region and supporting the programs already in place. If you want to coach an FLL team, mentor an FRC team, volunteer at events, or help run FLL/FRC events, this is the team for you! Come see us at the student teams lunch during Frosh Week for more information. As we are a new team, we are looking for a variety of input and people of all backgrounds, so give us a shot and work with us to make the team a huge success. Welcome to UW!

UWFH MARKETING
UW FORMULA HYBRID

The University of Waterloo Formula Hybrid team is the newest and most innovative team at the University. An open wheel racecar, designed with the pinnacle of engineering excellence and efficiency in mind, is annually given the opportunity to compete on the world stage against other schools from America, Europe, and Asia. With the automotive industry experiencing a paradigm shift into obtaining performance through efficiency, the Waterloo Formula Hybrid team uses the latest high voltage lithium polymer technology to accomplish this goal. There are ways to specialize in the design for virtually any engineering discipline due to the various integrated subsystems involved with building such a complex racing car. Efficient hybrid designs are the automotive way of the future, and at Formula Hybrid, you will learn firsthand what it means to be at the forefront of the latest technologies!

CASS COLE
UW FORMULA MOTORSPORTS

The UW Formula Motorsports team was founded in 1987 and is sanctioned by the Society of Automotive Engineers (SAE). Every year the team designs and builds an open-wheeled race car from the ground up and competes against 120 university teams from around the world at the annual FSAE Michigan competition. The team is primarily composed of engineering students with a growing business team as all funds and sponsorships are acquired by the team. The best way to get involved and learn more about the Formula Motorsports team is to attend our weekly team meetings where you will learn some theory behind designing a race car and be able to get involved with some available projects. Also feel free to drop by the bay (E5-1009) or send us an email (uwfsae@gmail.com) anytime. Have a fantastic first year at UW and remember: work hard, play harder!

KYLE OLIVE
IEEE WATERLOO STUDENT BRANCH

Do you like technology? Robots? Computers? The Internet? We do.

The IEEE (pronounced "eye-triple-e") uWaterloo Student Branch (a branch of the world's largest professional organization) consists of many groups and teams, including: WarBots (autonomous soccer playing robots), a Web Development Team, and more! We organize workshops giving students hands on skills and experience in electronics, programming, and robotics.

We have tons going on and always have room for new members - no matter your experience.

We've got a lot planned for the future, and you can be a part of it. Some of our goals include:

- Competing in RoboCup 2013 in the Netherlands,
- Revamping our website to win the 2013 IEEE Website Design Competition,
- Preparing for the 2012 IEEE Xtreme Programming competition (happening in October!), an international programming competition open to any IEEE Student Members.

JACOB TERRY & FARZI YUSUFALI
THE IRON WARRIOR

Hadst thou observed the lovingly fabricated and beautifully concise newspapers in thine frosh kit? Dost thou wish to impart such wisdom amongst the future generations of engineering ne'er-do-wells? The Iron Warrior, being an imprint (but not that other newspaper) of the thoughts and gospel of engineering pupils, offers all aspiring scribes an opportunity to wet their quills and dabble in the art of journalism. For those who find journalism is not their cup of dragon's blood, there are other facets in which thou may involve thine self; for instance, in developing strategies to effectively distribute our weekly parchments to all realms of the campus of Waterloo, or apply thine talents of ye olde InDesign from the Duchy of Adobe by joining the layout round table every fortnight. Send a pigeon to iwarrior@uwaterloo.ca if thou hadst interest, or needs to translate this telegram.

DANIEL OSORIO
MAKE GROUP

What drove you to become an engineer? Was it the undying desire to create something you seen on TV, the ability to forge together anything in your imagination, or the need to be part of a team working towards a goal? If you answered yes to 1, 2, or all 3 of the following questions then the MAKE group is the thing for you. The goal of the group is simple: We make things. We want to bring together a community of all kinds of students across campus: Engineering students, science students, math students, arts students and anyone else who wants to build things.

Wondering what projects we have on the horizon? Well, you tell us. The MAKE group wants to build what you want to build. Bring your ideas, bounce them around the community, and find similar people who want to help you reach your goals. We also have team projects on the team to-do list for competitions, we're upgrading old projects, and we're starting new ones. We're a new student team and have only been around for the last four months but we have already put together a couple of projects including an attachable iPhone microscope and high altitude camera. So If you're interested keep an eye out for us on Club Day, because the MAKE group needs you.

MEI CHIEN SOONG
MIDNIGHT SUN

Founded in 1988, Midnight Sun is a student-run organization that designs and builds solar cars to compete in solar challenges around the world. As the largest student team at the University of Waterloo, we welcome students from every faculty to get involved. We're divided into mechanical, electrical, and business teams. This gives us the opportunity to draw from a large pool of talents, resulting in a unique solar vehicle and an ambitious team that showcase the diversity of abilities required to run a solar car team.

With over 20 years of experience in building and racing solar cars, our team provides hands-on and innovative opportunities, allowing students to develop their creative, technical, and leadership skills. From conception to track testing, every step in creating the solar car allows students to gain real world practical knowledge, beyond what can be attained in a classroom setting.

Visit our website at: www.uwmidsun.com

Or find us on Facebook at: www.facebook.com/uwmidsun

Contact us at: mail@uwmidsun.com or visit us at E5 Room 1002.

SUSAN PATCHETT
UW_NRG

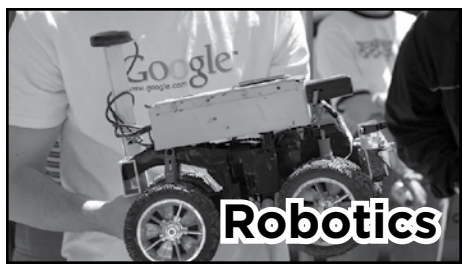
The University of Waterloo Nanorobotics Group (UW_NRG) is an undergraduate student microrobotics team. Composed of approximately 40 undergraduate engineering students, UW_NRG designs, fabricates, and manipulates robots on the micro scale for international competition. The team was founded in 2007 when a group of undergraduate students set about the task of designing a microrobot. Since then the team has expanded. UW_NRG is currently working on four different robots and has competed internationally three times, placing first in 2010 against teams of graduate students and professors from all over the world. UW_NRG has seven different sub-teams: four technical teams, a controls team, a marketing team, and a business development team. UW_NRG is looking for a wide variety of talented students to contribute to various team projects! Check us out at uwnrg.org and on Facebook or Twitter!

KENT STOLTZ
UNIVERSITY OF WATERLOO ROBOTICS TEAM

Do you secretly (or not-so-secretly) wish that you were Iron Man? Did you shed a single tear when WALL-E and EVE held hands? If so, the University of Waterloo Robotics Team is for you! We compete internationally with a variety of projects capable of everything from autonomous outdoor navigation to Moon exploration.

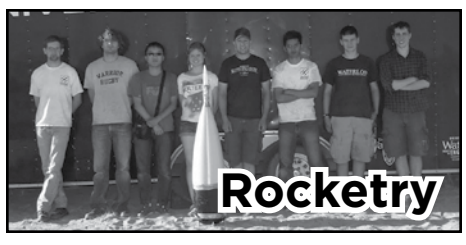
First year students are invited to participate in our Mini-sumo Competition. Teams of 4 will work together to build a small robot capable of detecting other robots and pushing them out of a ring. No prior experience is required - we'll give you everything you need like basic electronics, embedded software and mechanical design.

Our lab is located on the second floor of the Student Design Center in E5-2003. Keep your eyes open for posters advertising our recruitment meeting. You can check out our website for more information (robotics.uwaterloo.ca), or email us at robotics@engmail.uwaterloo.ca



YIQING WANG
WATERLOO ROCKETRY TEAM

The University of Waterloo Rocketry Team compete at the Intercollegiate Rocket Engineering Competition held in Utah each June. For the competition we design, build and launch rockets with ten pound payloads to 10,000 and 25,000 feet. In 2011 we flew our first rocket with a student built hybrid engine. This year we launched a rocket that spanned over twenty feet and was propelled by a student built liquid engine. Few teams have attempted to fly their rocket with an advanced engine design like ours showing the excellent technical ability of our team. WRT consists of undergraduate and graduate students from many faculties including Engineering, Science and Arts. We welcome new members from all academic levels including first years.



Top Ways to Succeed in University

WADE WILSON &
EDWARD BLAKE
3Z HANDSOMENESS

TOPZ: WITH A Z

(Editor's note: Topz is a regular satire feature in our standard releases of The Iron Warrior*, but we understand you may not be familiar with it yet, so take their advice humorously :D)*

Congratulations: you've made it to Waterloo and now you couldn't escape if you wanted to. Chances are this is your first time at university and you're filled with questions: should I buy all the recommended books? How can I make friends in Science, Math, and the miscellaneous other faculties? How can I meet those very handsome hunks that write for the newspaper? To these we say, you ask incredibly stupid questions. Don't worry though, luckily for you we've compiled a list of the top ways to succeed in University, making the most of the next (hopefully) five years.

Pay Attention to Big Bang Theory

We're sure that many of you are fans of the smash hit "The Big Bang Theory" and are thinking that now that you're in University your life is going to be just like it. Well you're right! University is dull, repetitive, predictably terrible and exhausting. The first year will make things seem fresh and exciting, but it won't take long to realize that every class is essentially the same. Also, you should totally show-off your nerd-core pride! In Waterloo you will certainly stand-out for reading xkcd, going on reddit.com, and having math-inspired t-shirts; it will be charmingly quirky and make all who see it go "Bazinga! Get a load of this guy/gal! I bet he/she knows when the Narwhal bacons! He's/she's a nerd, but totally owning it! Nerds FTW!" … but not literally, his/her(?) load is probably saved for anime fanfic. Just don't mention The Game (haw haw, trolled ya!)

Be a Book Worm

When one speaks of worms, they are referring to an obsolete taxon used by Linnaeus for non-arthropod invertebrates. In short, worms are gross. And so are you, so you might as well make the most of it. First year will spend a lot of time reviewing concepts learned in high school to make sure everyone is at the same level (for example, students in Alberta do more calculus and less vectors than Ontarians, and students in India learn advanced quantum spin applications). Well, dogs, we heard you like to excel so we suggest that you review for your review so that you can review from your reviewed review. And speaking of dogs, all that studying will make you hungry as a dog (if you can think of a better segue we'd like to hear it (actually we really wouldn't, we can't even spell journalistic intagrety)). Take this as an opportunity to hone your culinary skills and teach yourself to cook. There are lots of great resources online, but if you follow the Paula Deen school we recommend that you make friends in AHS.

Win Friends and Influence People

As two attractive hunks, we don't really struggle on this point, but decided to do some investigative journalism for you all. We had once heard that having fun isn't hard when you have library card, so we went to our local library to find some friends. The place was full of nerds! We found a section of actually useful books (with pictures in them) and our research came up with a pretty interesting factoid: everybody poops! So, we did the only rational thing and went to bathroom (where everybody is pooping!) and wrote our names, phone numbers and available times to have glorious fun! Once you meet them, you'll have to win them over and a valuable secret is that people love people that make them feel important. So puff them up, and make them feel as self-important as an atheist on reddit making fun of his grandma's latest status update! Worship the ground on which your soon-to-be friend walks. Offer sacrificial animals (if you kill their dog, this works double as grievance over which you can bond), kiss their hand, and cook them meals. And remember, do not skimp on these lavish approbations. For example, whip a feast hearty enough to octupley satisfy his hunger; fill eight yo.

Excel in Schoolwork:

[This paragraph has been omitted in accordinace with uWaterloo Policy 71]

Explore Waterloo

Some people think that Waterloo is boring. To them we say, just take a look at the beautiful Lotus Tea House on Regina and Spring, the local cinema which turns into a gourmet grilled-cheese restaurant after midnight on weekends, the local-beef hamburgers at Frat Burger, the nearby petting zoo, or the the scenic Waterloo Park overlooking one of the world's largest theoretical physics think tanks … and see that you are absolutely right, the city of Waterloo is totally boring. Your best bet is just to hang around campus and complain about how dull Waterloo is instead. Maybe you could even be brave enough to venture to the Arts part of campus. As for night life, there's plenty to do, even if under-age! You could ~~check out the pubs~~, there's great EDM ~~at Beta nightclub~~, stay at home and ~~watch pornography~~, go on the bus with a blanket until you're 18.

So, in conclusion, University isn't really so scary of a place (until finals). Just follow our helpful guide and you'll be a regular Arthur Fonzerelli in no time at all. At the end of the day, the University experience is entirely up to you and how you feel about things depends on how you chose to perceive them. So, come find us and we'll hook you up with very potent hallucinogenics. Good luck with first year and enjoy whatever is left of the only week of freedom for the next five years!

Follow his lead!

The Iron Calcudoku

The Iron Warrior Warms You Up For the Math Preparedness Test

FARZI YUSUFALI
3B NANOTECHNOLOGY

2 /	17 +	30 *	60 *			8 -		56 *
			4 -		15 +		13 +	
17 +	5 +		8 -			5		
		16 +			7 +	336 *		20 +
8 +		15 +	21 *	2 /				
3					4 /		108 *	
10 +		9	20 +	13 +		20 *		
3 -				20 +		1 -	2 -	4 -
	3 -		7 -					

Rules

1. Like a Sudoku, each row and column has the numbers 1 to 9 only once.
2. In each cage, the numbers should follow the arithmetic operation at the top left corner of the cage, and should give you the number at the top (e.g. for 15 +, the numbers in the cage should add up to 15).
3. A number can be repeated in a cage as long as it is not in the same row or column.
4. Cages with only one number should be filled in with that number.

Sudoku

#2012-11

JACOB TERRY
2T NANOTECHNOLOGY

Easy

8						7	3	
9				3		5		
	3	6	9		7			
		4			2	6		7
		3		9		2		
2		9	7			3		
			5		6	4	2	
		5		1				8
	6	2						5

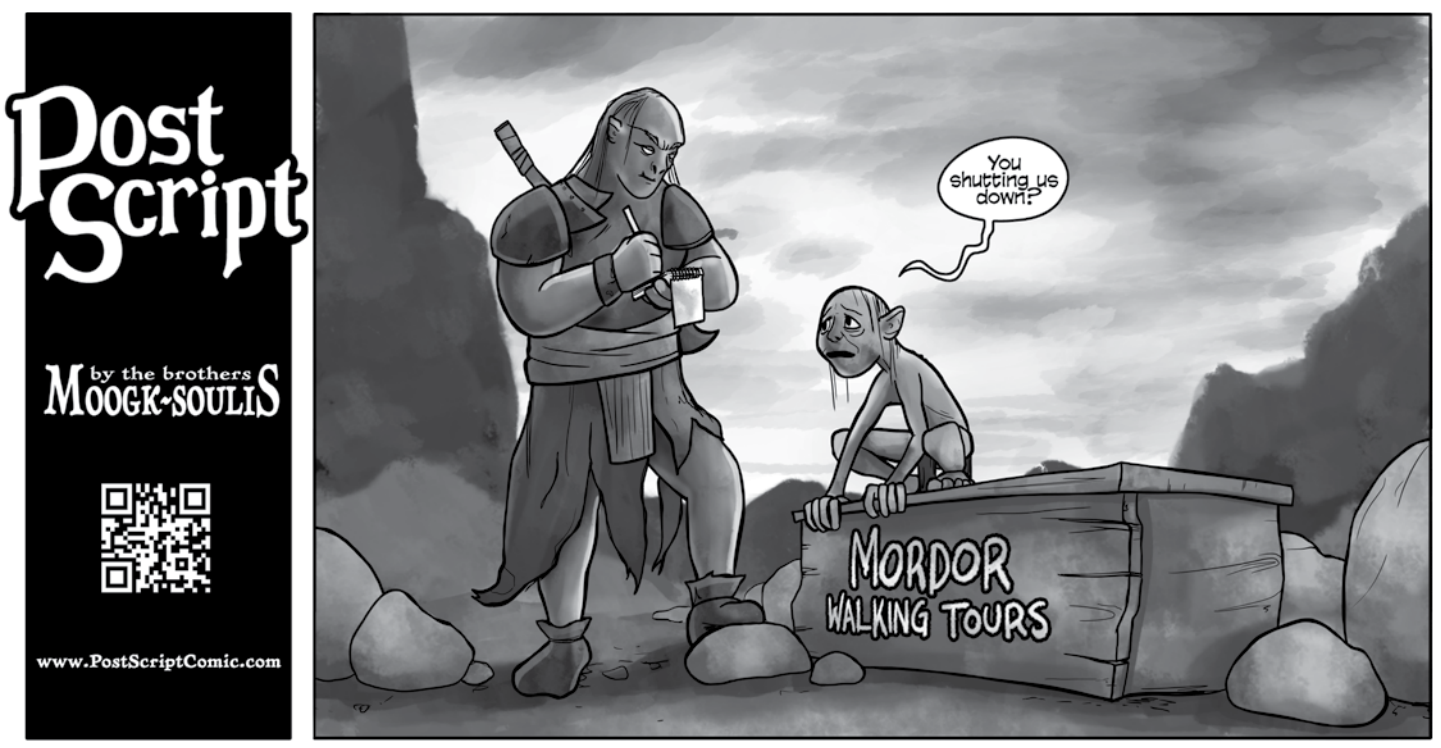
Medium

5			1		8			9
	1		4			3		2
	4	9		7				
		4	7	8	3			
			2	9	4	5		
				4		7	2	
4		7			1		8	
1			9		7			3

Hard

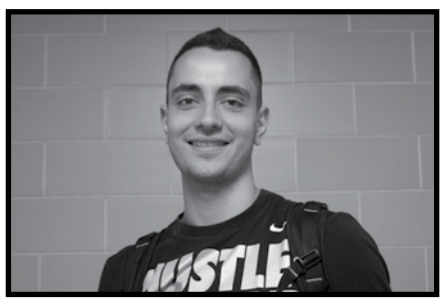
	3			1	9			
	5	4		6	2	9		
7	2		3					
2	6							
		7	1		8	6		
							9	1
					5		2	8
		2	4	3		5	7	
			2	8			6	

Fall Issue 1 Deadline:
Friday, September 21 at 6:00 PM
Send your submissions to:
iwarrior@uwaterloo.ca



THE IRON INQUISITION
Emily Gruber, 2B Nanotechnology
Nan Huang, 2B Nanotechnology

"What do you wish you had done in first year?"

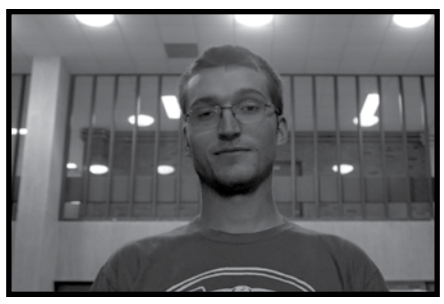


"I wish I had been more relaxed about school."
Shahab Akmal, 2T Nanotechnology

"I wish I was more involved in on-campus activities."
Sachet Vora, 1T ECE

"I wish I had lived in REV instead of UWP."
Steve Yoon, 4N Civil

"I wish I had joined more clubs, like student design teams."
Robert Baker, 2T ECE



"I wish I had passed the first time around."
Alex Blidaru, 1T ECE

"I wish I had gone out and met more people."
Robin Koke, 4N Civil