UBC Engineering
Design Team Handbook

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Engineering Design Teams

A UBC Engineering Design Team, henceforth referred to as Team, is an extra-curricular group comprised of UBC students with a common goal of gaining relevant design, competition, team, and leadership experience. Teams generally design and manufacture a device or product (e.g. a robot or a vehicle). Teams often choose to enter a regional, national, or international competition with their device, to represent UBC Engineering and put their hard work to the test.

Relationship with the Faculty of Applied Science

Teams are an integral part of the Faculty of Applied Science and are provided access to space and resources within the Faculty. In order to qualify for some departmental funding, student teams may be required to declare a host department, where their university accounts reside. Each team is required to have a university bank account ("PG") registered with their host department. Each team must have at least one full-time Faculty Advisor (professor, associate professor, or assistant professor) whose interests are relevant to the team's work.

The Faculty of Applied Science provides temporary and semi-permanent project space, access to machinery and manufacturing equipment, as well as funding opportunities under the Professional Activities Fund (PAF), EUS referendum funding and general faculty funds. The Faculty leads and develops Safety and Leadership Training throughout the year.

Student Code of Conduct

All students involved with engineering design teams must follow the UBC Student Code of Conduct found in the Academic Calendar. Failure to comply with the Code of Conduct is grounds for team termination.

Team Structure and Operation

Teams' internal functions are independently operated. Teams are required to nominate a Team Captain and a Safety Officer to oversee their operation. Teams may create additional executive positions to suit their individual needs. Teams may develop their own internal governance documents to serve the needs of their team and to ensure continued success. Examples of Team Governance Documents have been made available in Appendix B for reference.

Teams meet and work during the week as well as on weekends. Work hours are agreed upon internally, to conform to student schedules and resource availability.

Each summer, there is an EDT Registration Form that must be filled out. The Coordinator will make this form available in July and it is due at midnight on **August 31**.

Privacy and Digital Security

Teams often collect personal information as part of their recruitment and financial operation. It is important that teams abide by the relevant privacy standards as groups hosted within a public Canadian institution.

The following information has been sourced from the University Counsel's Privacy Fact Sheet (http://universitycounsel.ubc.ca/files/2014/01/Fact-Sheet-Disclosure-Outside-Canada.pdf):

> Public bodies in British Columbia, including UBC, are subject to restrictions on the storage or access to personal information from outside Canada. These restrictions, which are contained in the Freedom of Information and Protection of Privacy Act (FIPPA), require all personal information in UBC's custody or control to be stored only in Canada and accessed only in Canada, with a few narrowly defined exceptions.
>
> Many computing services are offered through the Internet, and may be hosted in the United States or other foreign jurisdictions. Using these services to collect, store, transmit or access personal information is a violation of the restrictions against storage or access outside Canada.
>
> Here are some examples of commonly used cloud services, with Canadian-based alternatives:

Cloud Services	Canadian Based Alternatives
Dropbox	Workspace 2.0
Gmail, Hotmail	FASmail
Survey Monkey	Qualtrics
Google Docs	Microsoft Word and Excel

Student Teams that use non-Canadian services to host private information, including Student Emails and Student Numbers, are required to acquire student consent before doing so.

Consent

> It is acceptable to store or access an individual's personal information outside Canada if you have the consent of the individual. This consent must be in writing and must specify:
> * who may store or access the personal information;
> * if practicable, the jurisdiction in which the personal information may be stored or from which the personal information may be accessed; and
> * the purpose of the storage of or access to the personal information.
>
> Since it may not be practical to secure written consent from every student, it is acceptable for [teams] to secure the consent as follows:

- in the [team documents], or in a written communication to the students, describe the cloud-based service and the information that it will be storing or accessing, and explain that if the students choose not to provide their consent to this storage or access, they must see the [team lead] to make alternate arrangements; and
- make alternate arrangements for students who refuse to provide their consent, such as allowing them to sign in to the service using a false name and non-identifying email address.

Teams should note that the restriction on storing personal information on outside servers also applies to sponsors. "Personal information" is defined as "recorded information about an identifiable individual." A name and work contact information is not considered personal information. However, student teams should still consider this information "sensitive," because it is not always publicly posted and it is important to consider whether or not the individual would want their information made public (i.e. through a Freedom of Information request). Financial information, including sponsorship amounts, should also be considered sensitive.

UBC IT has rolled out Workspace 2.0. This platform is a cloud-based file sharing system (very similar in nature to Drop Box and Google Drive). Teams are expected to use this service, or a similar Canadian-based service, to store confidential and private information. For more information and how to sign up, visit: https://it.ubc.ca/services/web-servers-storage/workspace-20.

Additionally, teams are encouraged to use their official UBC FASmail as their team's email accounts, rather than using gmail or hotmail. For more information and how to sign up, visit: https://it.ubc.ca/services/email-voice-internet/ubc-faculty-staff-email-fasmail.

For team related merchandise, visit http://www.brand.ubc.ca/ as a guide for your designs that involve any UBC branding.

Recruiting

Teams rely on recruiting new members to ensure the long term success of their projects. Some teams choose to interview interested students to make sure candidates are committed to the team, however teams are not required to interview candidate students.

Events

The largest recruiting event is the annual Imagine Day Main Event where clubs and organizations from all walks of life set up booths along main mall and recruit new members. Instructions to register for an Imagine Day booth will be sent out annually, often during the summer. If you have not received an email, but you would like to sign up for a booth, contact the Engineering Design Teams Coordinator (team.engineering@ubc.ca) for information on how your team can sign up. The Faculty of Applied Science also hosts several events each year, such as the Engineering Open House, which often serve as excellent outreach opportunities for

teams. The Engineering Teams Coordinator will send information about these events as they approach, so make sure your contact information is up to date.

Online Presence

Besides attending public outreach events, many teams are very active online. Social media sites can be a great way to show off your work, your team's culture, and your team's goals. Teams often also have blogs or websites with lists of current members, contact information, and project updates. If your team would like to create its own WordPress site, UBC Blogs (blogs.ubc.ca) is an excellent resource that provides students with an easy to set up webpage, 29 free themes to choose from, and free hosting!

Digital Signage

The Faculty of Applied Science has several locations, including the EDC atrium, Kaiser Atrium, Kaiser 2nd Floor Lounge, and Macleod Atrium, where Teams may utilize large screens for digital advertising. Students in the Faculty of Applied Science can display approved ads free of charge. If you would like to promote your team using the monitors throughout UBC and Engineering Buildings, follow these steps:

- Review templates and tips for creating digital signage on
    o UBC's Digital Signage site: http://digitalsignage.ubc.ca/current-clients/content-guidelines/, and
    o APSC's Digital Identity site: http://apsc.ubc.ca/apsc/visual-identity.

- To display your signage in Engineering buildings, please contact advertising@apsc.ubc.ca. If the ad gets the approval of the APSC Communication Department, please allow 2-4 business days to upload to the system.

More information on digital signage and public outreach can be found in the News and Publicity Section.

Succession Planning

Nearly every student here at UBC aspires to one-day graduate. And while some students stick around longer than others, it should come as no surprise that the current executive members of a team will likely no longer be the executive members a few years down the line. While some teams change leadership more often than others, it is important to consider leadership succession to ensure that your team survives even once you are gone. This could include essential project information, team administrative information (e.g. email or blog accounts), contact information, detailed information on current and past sponsors (including sponsorship amounts), and experiential advice. The UBC Supermileage Team has provided the handbook with an example of their Turnover Document (in Appendix B3: Supermileage Turnover (2014/15)) used to help bring new executive members up to speed on their role.

Starting an Engineering Design Team

Please note that the process for starting a design team is currently undergoing a review. The information below is subject to change.

Teams are formed by any inspired and determined group of engineering students who want to solve a compelling design challenge or fill an engineering niche outside of the classroom. In the event that none of the existing teams are able to satisfy your interests, you may consider starting one. <u>New design team applications are accepted during each summer.</u> The registration form is due at midnight on August 31.

The following are steps that should be taken if you intend to start a new student team:

1. Talk to Existing Teams

UBC Applied Science currently recognizes 31 Engineering Design Teams that design and build projects like submarines, satellites, and nearly everything in between. Chances are that an existing team may want to pursue the same idea as you, and may already be on their way to developing a design for it.

Talk to members and executives of the team(s) most aligned with your project or design challenge, to determine if there is a possibility to incorporate your idea into existing design challenges. The faculty encourages collaboration between teams and urges you to explore becoming a sub-team of an already existing team. These teams already have the resources and faculty/industry resources to integrate your project and support its execution sooner. A full list of current teams can be found at http://teams.engineering.ubc.ca/the-teams/ and in Appendix A: Existing Teams

2. Find a Faculty Advisor

Contact a Faculty member you are interested in working with, and ask them if they would like to support your team (consider their existing commitments). You should come prepared to answer any questions they might have regarding your team, its constitution and how exactly the team would be beneficial. Make sure to take a look at the engineering design team registration form in order to guide you in the sort of expectations when creating a new design team. Also your Faculty Advisor's department will most likely be your "host department", through which your team's finances are managed.

3. Fill out the Design Team Registration Form

The Engineering Design Team Registration Form is designed to guide new teams through the reflection process of becoming an Engineering Design Team at UBC and help determine resources needs for existing teams. It will help you develop a sound plan, clarify your team's intentions to the faculty, and enable the faculty to advocate and support your team in the long-term.

Some criteria that will be necessary to consider in filling out the registration form are:

- What is the goal of the new team, and how is it not currently being met by existing student teams?
- What is the financial scope of the design challenge? Are there industry sponsorship opportunities? Does your team have a sound budget and funding plan?
- What is the timeline of the design solution or engineering project? Will it be a recurring design cycle or a one-time challenge?
- Will you compete with other design teams outside of UBC?
- Will the Team require project space? If so, how much, and where?
- What is the Team structure going to look like?
- How will the Team stay accountable to itself and the Faculty?
- Do you need a recruitment strategy and succession plan?
- What are your teams learning goals and plans for team professional development?
- Will the team consist of at least 75% engineering students?

This form is to be filled out during the summer months and submitted by August 31. The Engineering Design Team Advisory Committee will review your application and get back to you within 2-4 weeks of submission.

The Engineering Design Teams Coordinator (team.engineering@ubc.ca) should be contacted for a link to the form and is available to consult and help with submission of your registration. The coordinator might also reach out to help enhance and strengthen your proposal for resubmission. Therefore it is recommended that you save a copy of your responses.

Suggested: Develop a Proposal/Overview of Your Team

This will be a pdf document summarizing the information provided in the registration form to convince external stakeholders (like sponsors and other interested parties) of the particular benefit of contributing to your new team. It will be helpful in your team's development as it will ensure you have an outline ready to present to any individual inquiring about your team.

4. Registration Assessment and Meeting

The final step will be the Engineering Design Team Advisory Committee assessing your application. The EDT Coordinator will reach out to you if your team's registration has been approved to discuss the next steps in your project or design challenge. Your Faculty Advisor may or may not choose to attend this meeting. These are the individuals who will be assessing your registration:

- Dr. Van der Loos, Student Teams Faculty Head
- Minoli Navaratnam, Student Professional Development Officer
- Richard Colwell, APSC Safety Officer
- Engineering Design Team Coordinator

In the event that your application is not immediately accepted, there is an opportunity to submit a revised application with the help of the Engineering Design Team coordinator. Note that in this case, you will definitely be asked to resubmit the team registration form.

5. Become a Team

Once you've been approved as an Engineering Design Team, your team will now be eligible for the benefits that Engineering Design Teams at UBC have. Some of which are:
- Your information in Engineering Design Team Handbook and other promotional material.
- Setting up a financial account with a "speedchart" to make purchases and receive funding - equivalent to a faculty bank account.
- Promotion through the Engineering Design Team website and other social media platforms.
- Inclusion in the annual Engineering Undergraduate Society (EUS) First Year guidebook.
- Access to design spaces including the Engineering Design Center (EDC) workshop.
- Eligibility for Professional Activities Fund (PAF).
- Engineering Design Team Trailers.
- Administrative, financial, communications and marketing support and mentorship.
- EUS Design Team referendum funding.
- Equipment like 3D printers.
- Access to the student teams Slack communications channel.

Safety

Teams are required by the Faculty to extensively train their members to act in accordance with UBC Safety Policy 7. In addition, practicing safety is paramount to professional development. EGBC, for example, puts holding paramount "the safety, health and welfare of the public, the protection of the environment and promote health and safety within the workplace" as the number one policy in their Code of Ethics.

Each member must pass the safety training requirements for their workspace in order to obtain workspace access. Violation of Safety Requirements will result in the member's FOB access being revoked and may result in the team being placed on probation. The Faculty reserves the right to restrict access to resources until safety guidelines are followed.

Safety Training and General Space Access

Each Team's Captain and Safety Officer are required to attend the annual Student Leadership Symposium (SLS) which will include training pertaining to leadership, bullying and harassment prevention, team management, and of course, safety. In addition, team captains must attend the safety presentation session and an in-person space walkthrough with the Applied Science Safety and Facilities Officer at the Symposium. Safety Officers will also be required to train the remaining members of their team.

Teams are required to maintain documentation of their members' training. This documentation is to be provided annually to the Engineering Design Team Coordinator and should be readily available upon request of the Safety and Facilities Officer, Engineering Design Team Coordinator, Student Development Coordinator, or Faculty Advisor.

For detailed safety information please visit: http://rms.ubc.ca/training-and-general-education-courses/safety-programs-training/.

To Obtain Access to EDC, CHBE, or LMRS

1. Have your Captain and Safety Officer attend the Student Leadership Symposium (early September; mandatory) and attend the safety session and in-person space walkthrough.
   a. If your team captain and/or safety officer did not do the in-person walkthrough at the Student Leadership Symposium, then you are required to book a walkthrough with the APSC Safety and Facilities Officer by emailing a list of times you are available to the EDT Coordinator. The walkthrough approximately takes ten minutes.
2. Have all members complete the three mandatory online safety training courses on the UBC Risk Management Services website. It is required that all members complete the training prior to any members obtaining access. Please note that for courses that must be completed annually, you will not receive a new certificate ID.

a. Engineering Design Team Safety Orientation (must be completed annually, starting in September)
b. WHMIS 2015 General Audience (must be completed annually, starting in September)
c. Preventing & Addressing Workplace Bullying & Harassment Training (only required to be completed once)
3. Email the EDT Coordinator an excel spreadsheet with all information listed below from your official design team email:
   a. First Name (as listed on the RMS website)
   b. Last Name (as listed on the RMS website)
   c. Role (if any)
   d. Student Number
   e. Email Address (as listed on the RMS website)
   f. Spaces where Access is Required (be specific and separate these into different columns, i.e. EDC 211, EDC 213)
   g. Mandatory Training Status including Certificate ID's (e.g. EDT Safety Orientation, WHMIS, etc.)
   h. Shop Training Status (e.g. MECH, ELEC, PHAS, etc.)

Spaces that are available for request are:
- CHBE 104 (Limited to teams that have space in CHBE 104)
- EDC 101 (Competition Team Space and Composites Room, limited access for non-bay teams)
- EDC 211 (Shared Workshop, design space portion is available to all members. Fabrication space portion is limited to members that have completed MECH, ELEC, PHAS, or BCIT shop training.)
- EDC 213 (Shared Electronics Workroom)
- EDC 224 (Small Meeting Room)
- EDC 301 (Large Meeting Space)
- EDC 303 (Large Workshop Space)
- EDC 320 (Boardroom)
- LMRS (Limited to teams that have space in LMRS)

Safety Plans

Student Teams are expected to develop comprehensive safety plans, outlining the relevant actions that need to be taken to ensure safe operation in their space and while working on their project. Safety plans reduce the likelihood of accidents occurring by improving team awareness, and help improve how teams deal with emergencies by ensuring that things have been thought through ahead of time. A sample Safety Plan form is included below. Example Safety Documents and Templates are available in Appendix D.

Hazardous Materials – Safety and Disposal

Many teams require the use of hazardous materials, such as resins and combustibles, in their projects. Teams must take all necessary safety precautions when handling these materials. Teams should be aware of the appropriate PPE required, and should keep up to date Material Safety Data Sheets in their space. Hazardous materials cannot simply be flushed down a drain or thrown in a trash can. The APSC Safety and Facilities Officer has an account with UBC Waste Management and can help teams dispose of any hazardous materials. Contact Richard Colwell at richard.colwell@ubc.ca for more information on the disposal process. More information can be found in the EDT Safety Training Course.

Incidents and First Aid

Teams often keep First Aid kits in their space in case of accidental injury. The Safety and Facilities Officer will be coordinating an optional two-hour first aid and CPR training session (Save-A-Life First Aid & CPR) course at the beginning of the year, free of charge. *Self-administration of First Aid is not allowed.*

In the event of an incident that requires First Aid, only a Certified Attendant may administer First Aid. If there is no Certified Attendant present, students should call 911. The Mobile First Aid Unit will go to the patient's location and respond to any first aid issue, *no matter how minor*. The Vancouver Fire Department has been contracted to provide mobile First Aid for UBC Faculty, Staff and Paid Students (604-822-4444).

Incident Reports

Team Members must inform their Safety Officer in the event of an incident or a near-incident. It required that your team's Safety Officer fill out an Online Incident Account form on the UBC Risk Management Services Website. This form provides UBC with the information it requires to identify potential lapses in safety and areas for improvement, as well as ensuring that the appropriate steps have been taken to remediate the incident. Teams may wish to have their own incident reporting system in addition to the Online Incident Account form made available by UBC RMS, however this extra step is not required.

The Online Incident Account form can be found below:
(https://www.cairs.ubc.ca/public_page.php).

You will be required to login with your CWL credentials to access the form. If it is your first time submitting an incident report, you may be required to create an account with the incident/accident system as you submit the report.

Student Team Safety Funding

In 2015, UBC Engineering alumnus Andre De Leebeeck and his wife Barbara generously established the *Andre and Barbara De Leebeeck Engineering Student Teams Safety Enhancement Fund*. Their goal is to support safety initiatives and training, and to enhance the overall safety of engineering student teams. A portion of this funding supports both fixed and one-time costs

SAFETY

associated with enhancing safety equipment, training and environment for student teams. However, depending on resources, some funding may be available to individual teams in order to reimburse specific safety-related expenses that they incur. If your team incurs a cost that you believe is safety-related, contact Richard Colwell (below) to see if reimbursement is possible. The amount of reimbursement will vary year-by-year.

Contact Information

If you have any further questions or concerns after reading the previous section and taking the online safety course, please contact the APSC Safety and Facilities Officer.

Richard Colwell
Safety and Facilities Officer, Faculty of Applied Sciences
The University of British Columbia | Vancouver Campus
Wayne and William White Engineering Design Centre
Room 235, 2345 East Mall | Vancouver, BC V6T 1Z4
Phone: 604-822-2273 | Cell: 604-786-8008
richard.colwell@ubc.ca

Important Phone Numbers
- **Emergency**: 9-1-1
- **APSC Attendance for APSC Facilities & Personnel**: 778-918-6970 (8:30 am to 4:30 pm, Monday – Friday)
- **UBC Royal Canadian Mounted Police (RCMP)**: 604-224-1322
- **RCMP Tip Line**: 778-290-5291 or 1-877-543-4822
- **UBC Campus Security**: 604-822-2222
- **AMS Safewalk**: 604-822-5355
- **Urgent Building Safety Problems, Broken Lights**: 604-822-2173

Support Services
- **AMS Sexual Assault Support Centre (SASC)**: 604-827-5180
- **UBC Counselling Services**: 604-822-3811
- **UBC Student Health Services**: 604-822-7011
- **RCMP Victim Services**: 604-224-1322
- **Employee Family Assistance Plan (EFAP)**: 1-800-663-1142

Finances

Team Budgets

Teams are responsible for generating a professional budget, and financing their projects. They generally do so through industry sponsorships (monetary and in-kind), and by applying for UBC-based funding opportunities.

Expense claims may be dropped off at the front desk on the 5th floor of the Kaiser Building, office hours are Monday – Friday, 8:30am – 4:30pm or mailed to Finance, APSC Dean's Office, 5000 – 2332 Main Mall Vancouver, BC V6T 1Z4.

Please contact finance@apsc.ubc.ca if you have any questions.

Account Set-Up (PG)

Teams can set-up an account at UBC through contacting the Finance team in the APSC Dean's Office. Email finance@apsc.ubc.ca to set-up an appointment and for an application form.

Account Balance

Applicants of the team can request the account balance by sending an email to finance@apsc.ubc.ca.

Approval

Two individuals are designated as signing authorities to approve and sign for all expense claims for members of the team. When a designated signing authority claims expenses, the other signing authority must co-sign. Designated signing authorities cannot authorize his/her own expense. The team's faculty advisor should co-sign on invoice payments and expense claims.

Expense Claims for Reimbursement

Fill out an Expense Claim Form (see Appendix C – Financial Documents) and submit **once a month** to be reimbursed. Claims must be supported by **original, itemized** receipts and **original** signatures from the claimant, the designated signing authority, and faculty advisor in order to be reimbursed. Make sure to **tape** receipts onto **8.5" x 11" paper**. Fill out a Missing Receipt Form (see Appendix C – Financial Document) for any receipts (including itemized meal receipts) that are lost. A credit card statement is not acceptable as receipt, but may be submitted in conjunction with the Missing Receipt Form. Your credit card number should be blanked out. Expenses in a foreign currency: identify the exchange rate used by attaching evidence such as a credit card statement or print out from http://www.oanda.com on the date the expense was incurred.

Invoice for Payment

Obtain an invoice (quotes are not acceptable). Have at least one of the designated signing authority and faculty advisor sign, date, and indicate the speedchart on the invoice. Forward the original to Finance, APSC Dean's Office.

Receiving and Depositing Sponsorship Funds

For more information on this process, please see the section below entitled "APSC's Development Office and How They Can Help".

PAF

The Professional Activities Fund (PAF) exists to enhance professional development activities in the engineering undergraduate program at UBC Vancouver like Engineering Design Teams. PAF is a separate funding from your team's finance account that you need to claim directly from the PAF funds. You need to know who your primary applicant is and the reference code.

Approval

The primary applicant must approve and sign on all PAF claims. When the primary applicant claims expenses, the secondary applicant must co-sign.

Expense Claims for Reimbursement

Fill out a PAF Claim Form (see Appendix C – Financial Documents), found on http://paf.engineering.ubc.ca. You don't need to wait until you've spent all your money to claim your funds. We would prefer if you submit receipts as you spend money through the year. We encourage you to submit a claim form **once a month**. Claims must be supported by **original, itemized receipts taped onto 8.5" x 11" paper** and signed by the claimant and the primary applicant. Fill out a Missing Receipt Form (see Appendix C – Financial Document) for any receipts (including itemized meal receipts) that are lost. A credit card statement is not acceptable as receipt, but may be submitted in conjunction with the Missing Receipt Form. Your credit card number should be blanked out. Expenses in a foreign currency: identify the exchange rate used by attaching evidence such as a credit card statement or print out from **http://www.oanda.com** on the date the expense was incurred.

Claims for Third Party (AMS, UBC Department, External)

Fill out a PAF Claim Form, make sure the greyed-out section is filled. Claims must be supported by **copies of receipts** and signed by the primary applicant. Each type of claims will also need to be supported with the following:

- o **AMS Club**: Invoice from the club (include the AMS account #) and proof of payment (this can be in the form of the ledger from AMS or proof that the student received the reimbursement – i.e. image of cheque or transaction of the cheque deposit).
- o **UBC Department**: Proof of payment (screenshot of the ledger, copies of the UBC Finance forms) and the speedchart/PG and account code that payment will be transferred to.
- o **External**: An invoice issued by the Third Party.

Account Balance
Primary applicants can request the account balance by sending an email to
finance@apsc.ubc.ca.

Delegated Primary Applicant
If the primary applicant is away on co-op term and is unavailable to sign claims, then please
ensure a delegate is chosen to approve and sign on all PAF claims. The primary applicant will
need to email paf@apsc.ubc.ca and finance@apsc.ubc.ca the chosen delegate's name, student
number, email, and phone number.

UBC Funding Opportunities

The following are UBC-supported funding opportunities, along with relevant details.
Applications may be point-based or otherwise. Point-based funding applications award points
on the merit of the funding application and generally have more stringent requirements that
must be followed.

1. **PAF Fund**
   a. Allocating body: PAF Committee
   b. Website: *http://paf.engineering.ubc.ca/*
   c. Contact: *paf@apsc.ubc.ca*
   d. Application Requirements: Team has to be predominantly composed of
      engineers and a registered Applied Science Engineering Design Team.
   e. Criteria:
      i. Team has over 15 people
         1. Over $35k budget, cap is $9,000
         2. Under $35k budget, cap is $6,000
      ii. Team has less than 15 people: $3,000 cap
      iii. Additional funding for competition: up to $3,000 or 50% of competition
           budget
      iv. Go to the website for the latest information and updated numbers

2. **EUS Engineering Design Teams Referendum Fund** (approved in 2014)
   a. Allocating body: EUS
   b. Contact: *eus.ubc.president@gmail.com*
   c. Application requirements: The proposed project must provide design teams
      with improved facilities/capital, benefit multiple design teams, and be beneficial
      for more than one year.
   d. The fund *policies* and *rubric* can be found on the EUS website.
   e. Application Process:

      i.   Students from multiple design teams agree on a funding request
     ii.   One student fills out the *application*
    iii.   The fund request is voted on at the next EUS executive meeting

3. **Student Team Safety Fund**
   a. Allocating body: Applied Science
   b. Contact: *Richard.colwell@ubc.ca*
   c. Application requirement: Funding must support safety initiatives and training, and to enhance the overall safety of engineering student teams
   d. Criteria: this funding supports both fixed and one-time costs associated with enhancing safety equipment, training and environment for student teams. However, depending on resources, some funding may be available to individual teams in order to reimburse specific safety-related expenses that they incur.

4. **Walter Gage Memorial Fund**
   a. Allocating body: UBC Vice-Presidents Student Office
   b. Website: *https://vpstudents.ubc.ca/walter-gage*
   c. Contact: *vpassist@mail.ubc.ca*
   d. Application Requirements: Application must be made by a student. It is an ongoing monthly application, but submit the application 4 weeks before it is needed. Submit this form *https://vpstudents.ubc.ca/files/Walter-Gage-Application.pdf* along with a checklist of items in person or by email to the contact on the form.
   e. Criteria: Must support individual or group projects that interest students and enhance the reputation of UBC. Other funding sources should be secured before applying. Up to $2,000 per project. Will not fund trips/travel.

5. **AMS Student Initiative fund**
   a. Allocating body: AMS
   b. Website:*https://www.ams.ubc.ca/leadership/commissions/financedepartment/students/student-funding/*
   c. Contact: AMS Funds and Grants administrator - *fundsandgrants@ams.ubc.ca*
   d. Requirements: A detailed budget should be submitted and only one application per project will be approved per year. The application is found here *https://goo.gl/5XMz8B.* Apply at least 3 weeks before need.
   e. Criteria: The fund can only provide up to half of the expense for a maximum of $500. Must promote student learning and AMS benefit.

6. **EGBC Student Team Fund**
   a. Allocating body: EGBC

b. Website: *https://www.egbc.ca/Member-Programs/Students/Student-Team-Funding*
c. Contact: Andrea Michaud *amichaud@egbc.ca*
d. Requirement: at least one student must be an APEG-BC student member. Funding available for both fall and spring terms.
e. Criteria Q & A

What is the maximum funding cap per project/group?
> **No maximum, but we usually give teams around $750. If teams request less it's unlikely we will give more. However, requesting a smaller amount is more likely to be successful.**

How many team/groups in total will be funding per year? And are there limitations from institutions?
> **We don't have a team maximum but rather a dollar maximum. Last year in 2016 we funded 21 teams. We don't have limitations from institutions, but we strive for diversity in the schools and programs we fund.**

Are there restrictions to use, like having to apply it towards project only and no travel?
> **No restrictions, but we do take into account what the requested funding will be used for. Teams are more likely to get funding if they plan to put the money towards something specific.**

Will a detailed budget of entire team plans be required or is a summary of where specifically the provided fund will go towards be sufficient?
> **Detailed budget is not required but more information is better than less. For example, "motor costs: $500; tires: $90" is sufficient, I don't need to see things like "4 AA batteries: $2.50." However, this information should be available in case we ask. The most helpful thing is a well laid out spreadsheet.**

How does claiming of the fund work?
> **We send cheques to the design team c/o the school. Usually UBC is pretty good at this (sometimes via the Development Office, APSC Finance Department, Department of Mechanical Engineering…). I think cheques usually get where they're supposed to go, but feel free to advise your teams if there are specific instructions for the cheque that they can include on their application. We cannot send cheques to individual students or send them to residential addresses.**

Is there a requirement to submit a final report or summary of the project after the funding has been approved and used?
> **Not required but photos or follow up are appreciated (this may be factored in next time the team applies for funding, so keeping a good relationship is appreciated).**

7. **Shell Experiential Learning Fund (SELF)**
   a. Website: *http://students.engineering.ubc.ca/career/professional-development/self/*
   b. Contact: Development Coordinator, *team.sponsorship@apsc.ubc.ca*
   c. Eligibility: see regulations on website page noted above
   d. Application deadline: October 15, 2018, link to application will open on September 15, 2018

8. **Student Competition Team Fund**
   a. Website: *http://students.engineering.ubc.ca/career/professional-development/student-competition-team-fund/*
   b. Contact: Development Coordinator, *team.sponsorship@apsc.ubc.ca*
   c. Eligibility: see website for details

    d. Application deadline: October 15, 2018, link to application will open on September 15, 2018

9. **Department Specific Funding**
    a. Allocating body: Applied Science
    b. Other departmental funding, MECH department, CIVL department, ECE department etc. To find out more about the availability and requirement for your host or other departmental funding opportunities, reach out to their undergraduate offices.

10. **External Industry Sponsorship**: Each individual team is responsible for seeking out external sponsorship opportunities for their team. Either monetary, material, mentorship or in-kind donations.

    There are other available sources of funding, like the Innovative Projects Funds managed by the AMS, and the Teaching and Learning Enhancement Fund by UBC but those are not included as they do not immediately fall under the purview of student teams funding. But, if you are able to justify how your projects fall under these, then feel free to apply to them or any others that you are able to find.
    For questions regarding student team sponsorship and how to contact and relate with sponsors, reach out to the Development Coordinator (team.sponsorship@apsc.ubc.ca). They are able to provide professional guidance to the design teams and is an excellent resource.

Tips for Better Funding Applications

Minor factors in funding applications may end up critically impacting the funding provided to a team. A few tips may be of help in getting the funding you need:

- Ensure that the team and Principal Applicant meet the requirements listed on the specific fund's website.
- Develop an accurate and accountable budget with enough detail before applying.
- Read the application very carefully. Answer any questions concisely and logically.
- Pay attention to professionalism - grammar, required font, word count etc.
- Discuss the application with the Engineering Teams Coordinator and your faculty advisor at least a week prior to deadline - they may have helpful feedback for you.
- Submit the application before the deadline. Late applications are not accepted and may jeopardize the team's financial situation.

Examples of high scoring PAF applications from 2014 have been made available in Appendix B

Procurement of Parts

To avoid delays and brokerage fees for items bought from out of the country, do NOT order through the U.S.-based McMaster-Carr site if at all possible! This applies to other companies as well. There are other viable vendors that deliver for free once or twice per week to campus. These are:
- Gregg Distributors (everything that McMaster-Carr has): https://www.greggdistributors.ca/
- Acklands-Grainger (sensors, industrial): https://www.acklandsgrainger.com/
- Metal Supermarket (materials): https://www.metalsupermarkets.com/
- Digi-Key (electronics): http://www.digikey.com/
- Misumi (actuators, etc.): https://us.misumi-ec.com/

This company has a Canada-friendly policy and they offer a discount to UBC projects.

Purchasing Items

To place orders through ECE Purchasing:

- Email David Chu Chong at *purchasing@ece.ubc.ca* with the following information:
  - Your name, student number, and the course/project/team that the purchase is for.
  - A speed chart to which the order can be charged, and contact information of anyone required to approve the order (e.g. supervisor or accountant).
    - *Note: Do not CC anyone on your initial email. See "note on tickets" below.*
  - Supplier name, part numbers, descriptions, and quantities. Be as clear and descriptive as possible (i.e. include URLs, use an Excel spreadsheet if needed).
  - Estimated order price.
- Dave will confirm receipt of the email and will send you an email notification when your order arrives.

To place your own orders and ship to ECE Purchasing:

- Email *purchasing@ece.ubc.ca* explaining that you will be placing your own order to ship to ECE.
  - Include name, purpose (which course/project/team), and a speed chart to which COD charges (tax/duty) can be billed.
- You will receive an automated email reply with 1-2 minutes with a 6-digit number (e.g. "RT #123456").
- Place your order as usual, using the RT number you received as the **name in the shipping address** and in the **purchase order field**, if any.
  - ECE uses this as an internal tracking number so that they know who the package belongs to when it arrives. You will receive an email notification when it arrives at UBC.
- Use the following shipping address:

ATTN: RTxxxxxx
University of British Columbia
Electrical and Computer Engineering
112B – 2356 Main Mall
Vancouver, BC V6T 1Z4
Canada

…and if ever in doubt, just go talk to Dave and Kristie in the purchasing office. They're both very helpful!

Note: The automatically generated RT number is a support ticket used to track your request. Be sure that any subequent emails you send to purchasing regarding an order contain that order's RT tag in the subject line "[ece.ubc.ca #xxxxxx]", otherwise you'll generate a new ticket. When CC'ing others, wait until you receive your ticket number, and then CC them on that email.

Sponsorship & Industry Relations

Teams in the past have been successful in soliciting in-kind and financial sponsorships from companies in their respective industries.

Companies are motivated to sponsor teams and clubs for a variety of reasons, including:
- Public relations: sponsorship enables a company to display its brand in a specifically targeted manner – many companies consider this to be a form of advertisement. Companies also benefit from the perception, by both the public and other companies, that they support education, innovation and student initiatives.
- Human resources: to companies, student team members often represent very valuable and talented potential employees. By sponsoring teams, these companies both enhance their profile and presence among students and often get a chance to engage with them directly.
- Tax benefit: UBC is a charitable organization and as such can issue a tax receipt or business acknowledgement to an individual or a company, both of which have tax implications (for more information, see below).

UBC's business and charitable number is: **10816 1779 RR0001**

Tax Receipt vs. Business Acknowledgement
If you have any questions about tax documentation or receiving sponsorship funds or gifts-in-kind, please contact the Development Coordinator, team.sponsorship@apsc.ubc.ca.

Companies may ask you if they will receive a tax receipt for their sponsorship – they are often simply referring to business acknowledgements (the individual asking may not know the difference). Simply state that they can receive a business acknowledgement if they would like, and feel free to explain the difference:
- Charitable tax receipt: issued for philanthropic gifts (usually from individuals, rare for companies) with no strings attached. The individual receives no perceived economic benefit from their donation. They can apply the tax receipt directly against their income tax.
- Business acknowledgement: issued for sponsorships (always from companies), where the company is receiving economic benefit – i.e. their logo is displayed, which is considered a form of advertising. Companies can use the business acknowledgement to write off the sponsorship as an expense.
- A company **cannot** receive a tax receipt for a sponsorship, but they can receive a business acknowledgement.

NOTE: UBC can issue business acknowledgements for **both cash and in-kind** sponsorships. However, in-kind sponsorships require more steps and the special assistance of the Faculty's Development Office (see above for contact info).

Sponsorship Package

It is recommended for teams to develop a Sponsorship Package document to provide to external groups. The document should include points such as:

- Description of the Team, your objectives, and your goals for the new year
- A short explanation of what kind of funding you need, how much, and why
- A description of where the money/in-kind support will go
- The types of publicity that the team expects to receive, including expected community outreach that you will perform during the year – this implies opportunities for the sponsor's logo to be displayed publicly
- How the Team will reward the sponsorship; teams often have several levels of sponsorship depending on the amount of support given, and often incorporate logo display and opportunities to meet the team as the primary rewards; it is most effective to lay these levels out in a chart format.

An example of a Sponsorship Package has been made available by the UBC Supermileage Team and can be seen in Appendix C3

The Faculty's Development Office (below) is also happy to assist your team in developing a sponsorship package.

IMPORTANT – Sponsorship Agreements

Some sponsors may request that your team sign a sponsorship agreement that they have drafted before they will give you the sponsorship cheque. Whatever you do, **DO NOT** sign any agreements. Students do not have the authority to sign an agreement on behalf of UBC. In fact, only a handful of people in the *entire* university have this authority.

If you are asked to sign an agreement, please indicate that you do not have the authority to sign it, and that you will have to provide it to UBC`s legal counsel for review. Then, contact the Development Coordinator (below) immediately and she will liaise with legal counsel.

You may want to consider asking the sponsor if the agreement is really necessary. It can sometimes take months for legal counsel to approve and sign an agreement.

APSC's Development Office and How They Can Help

The Faculty of Applied Science's Development Office is the external relations arm of the Faculty. They manage the Faculty's relationships with industry and alumni, developing research partnerships and fundraising for the Faculty. The Development Office can assist student teams in the following ways:

- Sponsorship packages: can assist you in developing the content of a package and can even format it into a UBC-branded case, which has been proven effective with industry. **NOTE** – turnaround time on these cases can be 3-4 weeks (sometimes less), so be sure to plan for lead time.

- Sponsorship strategies: can discuss who to approach (i.e. target audiences) and how, including cold-call and cold-email coaching.
- Invoices: sponsors will often request that you provide them with an invoice for the amount of their sponsorship before they will submit a cheque. The Development Office can provide you with an invoice template **(See Appendix C2 for Example)**.
- Issuing business acknowledgements and providing a thank you: as long as the Development Office is made aware of a sponsorship, they can issue a business acknowledgement. Also, it is very important to thank your sponsors as much as possible – it may encourage them to sponsor the team again next year and beyond. Although your team should frequently thank your sponsors yourselves (see below), the Development Office can also thank the sponsors on behalf of the Faculty.
    - o **NOTE** – to issue both business acknowledgements and provide a thank you, the Development Office must be made aware of the sponsorship, and requires the company's name and the name/contact info of the individual at the company that you secured the sponsorship from.
- Depositing your sponsorship cheques: When you receive a sponsorship cheque, your options are as follows:
    1. *You provide the sponsorship cheque to the Dean's Office finance dept. or your Department finance for deposit:* you must fill out a donation form with the sponsor's contact information **(See Appendix C1)**, and provide the Development Office with a copy of the cash receipt, the cheque, and the donation form.
    2. *You provide the sponsorship cheque directly to the Development Office:* in this case, you must simply bring the cheque and completed donation form to the Development Office.
- "Sponsor Now" button: can arrange for this button to be placed on your team's webpage, which will allow **companies** to make their payment online directly to your team's PG account and be issued a business acknowledgment immediately. If this is of interest to your team, please contact the Development Office.

If you would like to work with the Faculty's Development Office, please contact:
Development Coordinator, team.sponsorship@apsc.ubc.ca

Other Sponsorship Tips
- Begin by speaking with your team's previous Team Captain and/or review their succession documentation. They have gone through the process of funding their project and should be able to inform you of previous companies who have sponsored your team before and who might sponsor you again.
- Develop a detailed budget before you approach sponsors so you know how much you need, and what your sponsorship levels should be. Have it available if sponsors ask for it, but avoid providing detailed budget information in your sponsorship package.
- Do not ask for more than you need, and ensure that you are able to justify the amount of money you are asking for.

- If other universities have similar teams to yours, check who sponsors those teams and approach those companies.
- If you are approaching a new company which has not sponsored your team before, try to contact either their Community Investment (best choice) or Human Resource (second best) offices – these offices are most likely to be in charge of sponsorship.
- Ensure that every sponsorship cheque is made out to "The University of British Columbia" and that its memo line states "Sponsorship of [your team]."
- Some companies may want to pay for their sponsorship via a **wire transfer**. Be sure to confirm with every company if they will be writing you a cheque or paying via wire transfer. Wire transfers are typically done through the Development Office, so please notify them of any impending wire transfers. Also instruct the company to include the invoice number when submitting their wire transfer. **NOTE** – whenever possible, encourage companies to write cheques. They are less labor-intensive to process.
- Track your team's sponsorship activities with as much detail as possible – the best organized sponsorship drives are the most successful. **Remember**, this information must be kept on a secure server or at least an encrypted device. Track information like:
  - o Company/individual contact's name and contact info.
  - o The date(s) that you contacted the company and how (email, phone, face-to-face).
  - o Results of any conversations with a company, and next steps.
  - o Company's decision RE sponsorship ("yes" plus $$ amount; or "no" and reason).
  - o Potential dates for follow-up (sometimes you might have to follow up once or twice before you even reach someone at the company, let alone get an answer).
  - o Date that you receive sponsorship cheque, and actions taken with it (important because you may have to follow up with some companies to get the cheques that they have promised).

Ongoing External Support

The following external groups provide support to student teams on an ongoing basis. If you are aware of any additional groups that do so, please inform team.engineering@ubc.ca.

Company/Group	Requirements/ Exceptions	Type of support provided	Contact
Aurora Bearings	Automotive teams. Wire transfer prior to shipment	Half the order Bearings and rods at lowest cost, the other half provided **free**.	customerservice@aurorabearing.com
Soller Composites	Composites	Discount	information@SollerComposites.com
Misumi USA	Registration with UBC student Email	Discount	http://us.misumi-ec.com/

Company/Group	Requirements/ Exceptions	Type of support provided	Contact
SolidWorks	UBC Student Team	Free SolidWorks Student, SolidWorks Electrical licenses for team members	https://www.solidworks.com/solution/job-functions/students

Sponsorship Follow Up

Should your team receive sponsorship funding, there are three very important follow up activities that need to be done.

1. Please send the sponsor a thank you letter from the team immediately.
2. Please be sure to follow through with the sponsorship awards that your team promised. It is **vital** that your team deliver on all promised benefits, or the sponsor will not support the team in future.
3. At the end of the academic year, send each sponsor a short report on your activities for the year, along with the name of your new team captain or sponsorship representative.

Together, these activities will ensure that your sponsors are appropriately thanked, and that your team has the continuity they need to successfully secure sponsorships the following year.

Liability Insurance

Student teams are often required to carry Liability Insurance in order to compete in events or test their projects in certain facilities. UBC provides student teams with Liability Insurance. To request a certificate of insurance for your team, please email UBC Risk Management Services via Blossom Sobrinho (blossom.sobrinho@ubc.ca). Be sure to include the facility that is requesting the certificate of insurance, what specifically they require, and the dates which the facility will be used.

Sponsorship FAQ

1. What is the difference between a **donation** and **sponsorship**?
   - **Donation**: A philanthropic gift that has no perceived economic value/benefits to the donor.
   - **Sponsorship**: A gift whereby the donor receives a 'benefit' for the donation made. Usually sponsorships are provided by companies/organizations. i.e. displaying a company logo on project.

2. What is the difference between a **tax receipt** and a **business acknowledgement?**
   - A **tax receipt** is issued when an individual makes a donation. The tax receipt can be applied against an individual's income tax. The donation is usually monetary.

- A **business acknowledgement** is issued for donations provided by a business. Business donations can be monetary and/or gifts-in-kind.

3. What is UBC's **charitable number**?
   - 10816 1779 RR0001

4. Where can I find my team's **sponsorship button/link**?
   - https://support.ubc.ca/projects/student-team-sponsorships/
   - Please email team.sponsorship@apsc.ubc.ca for an image of the 'Sponsor' button

5. How many pages should my **sponsorship package** be?
   - **1- 4 pages** with text and images
   - TIPS:
     - One page should be dedicated to outlining the sponsor benefits. Please ensure your team is able to follow through with the proposed benefits and do not offer additional benefits not outlined in your sponsorship package.
     - Create a case statement that resonates and aligns with the goals of your prospect. Check their website's 'About Us' page.

6. Am I ready to solicit for **external gifts**?
   - If you answer **YES** to all of the questions below then you are on the right track to making the 'ask'.
     - o Do you have an approved sponsorship package?
     - o Do you have a list of prospects?
     - o Have you identified a sponsorship lead from your team?
     - o How much funding are you asking for?
     - o Have you contacted the Development Office?

7. **Who** should I reach out to solicit for **external gifts**?
   - Get in touch with the company's community relations team, human resources, or office manager.
   - **TIP:** Ask other teams to see who they spoke to previously, check company websites for bios, and LinkedIn to find an appropriate contact.
   - **TIP:** There are several companies not to be solicited by Student Teams. Please confirm with the Development Coordinator at team.sponsorship@apsc.ubc.ca.

8. I just received a **cheque** from a donor, what do I do?
   - **Option 1**: Provide the cheque and donation form (Appendix C1) to the *Development Office* (290-2360 East Mall, Chemical & Biological Engineering Building).

- **Option 2:** Submit cheque and donation form to the *Dean's Office Finance Dept.* or your *Department's Finance* and provide the *Development Office* with a copy of the cash receipt and donation form.
- **TIP:** Do you have a financial account set up? If not, please contact your *Department's Finance* office to create one. Funds received cannot be deposited into personal bank accounts.
- **TIP:** You can request the donor to mail the cheque directly to the Development Office. Please ensure the team name is mentioned on the memo/reference line.

9. A company offered to provide a **Gift in Kind**, what do I do?
   - Gift in Kind/in-kind donation is usually a non-monetary donation. i.e. equipment and software
   - With proper documentation, these donations may be eligible for a full or partial business acknowledgement.
   - Please contact the *Development Office* team.sponsorship@apsc.ubc.ca if a donor is interested in making an in-kind donation. Your Faculty Advisor should also be made aware of this potential gift.
   - **TIP:** Gifts of Services including assembly, advice, and time spent, cannot be acknowledged as per CRA regulations.

10. A sponsor wants me to sign a **contract or gift agreement**, what do I do?
    - Please **do not** sign any legal binding documents including contracts or gift agreements
    - Forward these inquiries to the *Development Office*, **team.sponsorship@apsc.ubc.ca**

11. Are there templates for invoices, donation forms, and sponsorship pledge forms?
    - Yes! Follow this link

12. What can the **Development Office** help with?
    - Processing donation/sponsorship cheques and issuing tax receipts/business acknowledgements
      o If you have questions regarding your financial account balance and reimbursements, please direct these inquiries to your *Department's Finance team*.
    - Inquiries on cheques received
    - Reviewing sponsorship packages
    - Sponsorship strategies
    - General inquiries related to external sponsorships and donations

News and Publicity

Are you wondering how you can get the word out about the cool new inventions you and your team are working on, or how you can promote your upcoming competition or member recruitment event? Find out the various channels through which you can best communicate and market your news and events in this News and Publicity guide compiled by Applied Science Communications and UBC Public Affairs.

Publicizing Your Team for New Members

There are several different mediums through which you can advertise for your team through UBC Engineering and the Engineering Undergraduate Society (EUS).

e-nEUS

e-nEUS is a weekly email newsletter that goes out to all current UBC Engineering undergraduate students.

The e-nEUS goes out on Sunday evenings, from September to April, and on a monthly basis in the summer. Articles are accepted up to **5pm the Wednesday before** the e-nEUS comes out!

The e-nEUS is a great way to get word out about:
- EUS events
- Engineering Student Services/Co-op/Faculty notices
- Industry Announcements

Before filling out the submission form (http://ubcengineers.ca/eneus/submission-form/), please familiarize yourself with the submission guidelines (http://ubcengineers.ca/eneus/submission-guidelines/).

To contact the e-nEUS Editor, e-mail eneus@ubcengineers.ca.

Digital Signage

If you would like to promote your event using the TV monitors throughout UBC and Engineering buildings, please follow the instructions below:
1. For the template and tips on how to create the slides for the digital system, please go UBC Digital Signage for design/content tips and sign templates.
2. Decide on your target audience:
   - For **campus-wide distribution**: please contact the UBC Digital Signage team – they require 2 weeks' notice

- For **Engineering-building distribution**: please contact advertising@apsc.ubc.ca – please allow for 2-4 business days to upload to the system
3. **During events**: if you wish to have your slides show exclusively on a monitor during an event, please contact the individual manager for each building/monitor:
    - Kaiser atrium, 2nd Floor Kaiser lounge & Macleod atrium: ece help desk (help@ece.ubc.ca)
    - Engineering Design Centre: Clara Soyris (clara.soyris@ubc.ca)
    - Chemical & Biological Engineering building: Magnolia Flores (mflores@chbe.ubc.ca)

Social Media – Applied Science and Engineering

- For UBC Engineering Facebook page (primary audiences: current students, alumni, general public): contact the APSC Communications Team at socialmedia@apsc.ubc.ca.
- For Twitter, @ubcappscience and @ubcengineering (primary audiences: general public, industry, current students, alumni, media): contact the APSC Communications Team at socialmedia@apsc.ubc.ca.
- For UBC Engineering Facebook groups (primary audience: current students): contact the APSC Communications Team at socialmedia@apsc.ubc.ca.

News – UBC Public Affairs and Applied Science

Applied Science Communications is the main channel of communications and marketing for the Faculty of Applied Science, and UBC Public Affairs is the university's conduit to the media. Both units support students and faculty by helping assess if a story has news value, identifying the best media outreach strategy, and writing and packaging stories.

Applied Science Communications promotes news through our APSC (www.apsc.ubc.ca) and Engineering (www.engineering.ubc.ca) websites, e-newsletters and social media (Twitter and Facebook).

UBC Public Affairs deliver news to the media through our UBC News website (www.news.ubc.ca) and several formats: media releases, Q and As, media advisories, expert advisories and social media (Twitter).

Student engineering teams work with UBC Public Affairs, Applied Science Communications and the news media when they are preparing for competition and planning a media event to showcase their work and innovation. UBC News may issue a media advisory to invite journalists to attend the event and provide some details on what they will see. Applied Science Communications amplifies Public Affairs efforts through our various channels.

Tips for working with UBC Public Affairs and the news media:

- Timing: Contact Public Affairs before you hit a major milestone or head to a competition. Journalists want to tell these stories when the news happens, not after. Make sure to give us enough time to work on the event and advisory together. When you contact PA, please let us know what sort of timing we're working with.
- All stories are worthy – not every story is newsworthy. Identify what makes this story newsworthy and any news hooks. What's particularly interesting or quirky about what you're doing?
- Identify what the implications of your work/findings are. Ask yourself, why should readers of the Globe and Mail, or the Vancouver Sun care?
- Use language that you would use for speaking to the general public – try to avoid the use of technical jargon.
- Multimedia: Journalists are more likely to cover stories if we can provide good photos and videos. Try to document your building process so you can provide video and photos of the entire process to journalists.
- Spokespeople: Identify a few people in your group who will do interviews.
- Key messages: Develop three key messages that you want to share with media. These can address the question: what are you doing? Why are you doing it/what are the implications of your work? What comes next in this field? Make sure the spokespeople know the key messages and practice saying them out loud before they do interviews. Use these key messages in interviews to help reporters tell your story.

A final word: the media provide a great opportunity to convey your story widely. Once you have prepared yourself for interviews and sent out your story, you need to be available and responsive to media, and sensitive to their deadlines.

For your news needs, contact the APSC Communications Team at socialmedia@apsc.ubc.ca.

Publicizing Your Event/Competition for Attendance

Social media—Applied Science and Engineering:

- For UBC Engineering Facebook page (primary audiences: current students, alumni, general public): contact the APSC Communications Team at socialmedia@apsc.ubc.ca.
- For Twitter, @ubcappscience and @ubcengineering (primary audiences: general public, industry, current students, alumni, media): contact the APSC Communications Team at socialmedia@apsc.ubc.ca.
- For UBC Engineering Facebook groups (primary audience: current students): contact the APSC Communications Team at socialmedia@apsc.ubc.ca.

UBC Events—Applied Science calendar:
Applied Science has its own UBC Events calendar in which events that pertain to the entire UBC community are advertised. If you wish to promote an event that has a UBC-wide appeal on this calendar, please contact the APSC Communications Team at socialmedia@apsc.ubc.ca.

Applied Science and Engineering events calendars:
APSC and Engineering event calendars are hosted on the APSC and Engineering websites: http://apsc.ubc.ca/news-events/calendar and http://engineering.ubc.ca/news-events/calendar. To request for an event to be posted, contact the APSC Communications Team at socialmedia@apsc.ubc.ca.

APSC This Month
APSC This Month is Applied Science's monthly e-newsletter for APSC faculty and staff. The recurring submission deadline is typically the last Friday of each month for the following month's edition. To submit news items, fill out the following form: http://apsc.ubc.ca/webform/apsc-month-submission-form. If you have any questions, contact the APSC Communications Team at socialmedia@apsc.ubc.ca.

e-nEUS
e-nEUS is a weekly email newsletter that goes out to all current UBC Engineering undergraduate students.

The e-nEUS goes out on Sunday evenings, from September to April, and on a monthly basis in the summer. Articles are accepted up to **5pm the Wednesday before** the e-nEUS comes out!

The e-nEUS is a great way to get word out about:
- EUS events
- Engineering Student Services/Co-op/Faculty notices
- Industry Announcements

Before filling out the submission form (http://ubcengineers.ca/eneus/submission-form/), please familiarize yourself with the submission guidelines (http://ubcengineers.ca/eneus/submission-guidelines/).

To contact the e-nEUS Editor, e-mail eneus@ubcengineers.ca.

Faculty Advisors

All Engineering Design Teams are **required** to have *at least one* faculty advisor from within APSC. The advisor will typically be a faculty member of the team's Host Department. In the case of dual-hosting, there will be an advisor from each Host Department.

Responsibilities of the Faculty Advisor

- Communication: The advisor is expected to meet with the team's captains at least two times per year. This would optimally be at the start of every term, after new members have been determined or team starts new projects. It is recommended that the faculty advisor meets and/or communicates with the team regularly, especially for new design teams that are starting from scratch.

- Access: The advisor is expected to be aware of space and resource issues and be available to relay requests to the department and/or APSC. This may relate to workspace, storage, transportation, fabrication, testing labs and external resources.

- Funding: If asked by the team, the Advisor is expected to advise the team on funding opportunities, such as PAF and TLEF, including reviewing proposals, and on sponsorship strategies. The Advisor will also be required to approve and sign the acceptance of gift-in-kind sponsorships received by team to ensure its value to both the team and the University.

- Finance: The advisor will need to sign off on any expense claims submitted by the team members. We have recommended to the teams to submit expense claims once a month.

- Design mentorship: If the team requests design reviews related to the team's prototype, or to competition preparations, the Advisor is expected to meet on an ad-hoc basis at the request of the team captain.

- Contact: The Advisor is expected to advise the team directly (via email, for example) for any opportunities or other reasons that the Advisor may find compelling, e.g., lectures coming to campus, upcoming conferences, new vendors of relevant technologies, new labs on campus.

Responsibilities of the Team

The captain of the Team is expected to be the primary contact to the Advisor.

- Communication: Requests to the Advisor should be given with ample lead time and be sensitive to the advisor's research and teaching schedules. Routine matters that can be handled at the administrative level should first be made through the EDTC or the APSC Faculty Coordinator. Teams must inform their Faculty Advisor when transitioning Captains or important executive members.

- Initiative: For all the categories listed in "Responsibilities of the Faculty Advisor", the team is expected to initiate contact. Contact with the Advisor should be restricted to high-level matters.

- Invitations: The team shall invite the Advisor to periodic meetings, competitions, field trips, tests, etc., that may improve the connection and awareness with the advisor. Even though the Advisor may not always be able to attend, it is important to provide an awareness of ongoing team activities.

How to Approach a Faculty Member

It may be daunting to approach a faculty member and ask them to be an Advisor to your team. It is important to ensure that you have a faculty advisor belonging to each of your hosting departments.

- Relevance: Consider a faculty member's area of research. They will likely be able to provide more support to your team if their expertise aligns with your design challenge.

- Make a plan: Approach the faculty member with a clear plan of your Team's objective and deliverables. Set up an appointment via email.

- Make them aware of their role: the preceding pages in this document are a good guideline for the role of a faculty advisor.

- Consider their time commitments and be respectful of them. Clarify expectations regarding support, communication and technical involvement at the start.

If you require additional help in contacting a faculty member to be your team's advisor, please contact the Engineering Teams Coordinator at team.engineering@ubc.ca.

Team Resources

Faculty support for Engineering Design Teams includes granting access to equipment, machinery, and workspaces. The following section outlines the procedure for gaining access to, and utilizing the various resources afforded to teams.

Team Trailers

The APSC Student Teams have access to two trailers to aid them in transporting projects. There is a Closed Box trailer and a Flat-Deck trailer. These trailers are housed in the UBC Gas Gun Enclosure across from Thunderbird Stadium. Access to the enclosure is mostly regulated by a combination lock on the gate. Trailer Keys will be stored in combination lock Key Safes on each trailer. Teams may access the space at any time to retrieve or return a trailer, provided they have first booked the trailer and spoken with the EDT Coordinator to request the use of a trailer. The combinations to each lock may be changed on a semi-annual basis to improve security, however the Engineering Teams Coordinator will alert you to any changes before the date of your request.

UBC's Formula SAE Team has a smaller box trailer which was donated to their team and is also stored in the Gas Gun Enclosure. This trailer is also available for student team use, however bookings will go through Formula, to ensure that they have priority for its use.

Parking

Each trailer has a designated location in order to ease future access and to avoid disrupting the research in the Gas Gun Enclosure. Parking may not block the driveway and must leave a clear path to the dumpsters located on the left side of the building. In the figure above, the two dumpsters are marked D1 and D2. The Student Teams Storage Container is marked C. The Trailers are marked as follows:

T1 – flat deck trailer
T2 – large box trailer
F – Formula UBC's box trailer
R – UBC Rocket's box trailer

Trailer Descriptions

Large Box Trailer:

Description:

- Enclosed trailer
- Inside dimensions: 246"L x 96.25"W x 79"H
- Rear door dimensions: 89"W x 76.5"H
- GVWR: 6273 kg (Gross Vehicle Weight Ratio – Total permissible weight of trailer and payload combined)
- Curb weight: 1740 kg (empty weight)
- Max. payload weight: 4533 kg
- Coupler: 2-5/16" ball
- Trailer is insured

Use Requirements:
- Requires vehicle with brake hookup.
- You must provide your own vehicle capable of towing this trailer and your payload.
- Driver must carry a valid driver's license.
- Towing large loads may require a specialized license. If in doubt, contact ICBC.

Flat Deck Trailer:

Description:

- Deck dimensions: approx. 5ft x 12ft
- GVWR: 1000 kg (Gross Vehicle Weight Ratio – Total permissible weight of trailer and payload combined)

- Curb weight: TBD
- Max. payload weight: TBD
- Coupler: TBD
- Requirements: TBD

Use Requirements:
- You must provide your own vehicle capable of towing this trailer and your payload.

Picking-Up and Returning a Trailer:

1. The trailers are to be picked up from the Gas Gun Enclosure (6301 Stadium Road UBC).

2. Be sure to ask Richard Colwell for the insurance papers of the trailer you'll be taking ample time before your trip.

3. Perform a safety check on your booked trailer 2 weeks before your booking and report on its condition. If any minor upgrades are necessary, get confirmation from Richard Colwell before purchasing and you will be reimbursed.

4. If the gate to the enclosure is locked, you can open it using the provided combination from the EDT Coordinator. Please note that the combination line on the gate lock is the *TOP LINE* of numbers, not the middle line of numbers as many people anticipate. Please re-lock the gate when you leave.

5. At the request of the Gas Gun Enclosure Researchers, if you are picking up a trailer while there are people working in the Gas Gun Enclosure, please walk inside the building and give them a quick idea of what you will be doing and how long it will take.

6. To unlock the trailer you will be using, you can find the trailer's keys inside a combination key-safe provided by the EDT Coordinator.

7. When you are done using the trailer, please return the keys to the key-safe and park in the same spot you picked the trailer from.

8. **IMPORTANT**: we are guests in the Gas Gun Enclosure. We must be sure that the trailers stay as out of the way as possible. Please leave the trailers parked in their designated location.

Notes:

- There is to be absolutely no food in the trailers! The Gas Gun Enclosure has a history of rat problems and we do not want this to affect our trailers.

- Please be aware of your noise level when you are in the enclosure. It is a working lab and we do not want to interrupt the research being done.

Storage Container

Any teams storing equipment in the storage container must clearly label each item/box with the design team name, email, and phone number. Contents will be audited frequently to ensure garbage does not accumulate in the container.

Welding Services

As welding is an extremely hazardous activity for anyone who is untrained, UBC forbids students who have not received the appropriate certifications from welding on campus. As many teams require welding in the fabrication of their projects, the Faculty of Applied Science has hired a certified student, Daniel Granger from Baja (danieljgranger@hotmail.com) to provide teams with welding services. When requesting a welding job, please note the following:

The Student teams should essentially be creating welding procedures, as part of their design process. This experience will serve them well later in their careers as engineers. The student teams should fully consider all stages of fabrication when designing their parts including:

Material, (can the metals be welded together)
Welding processing (what process is to be used to welt the pieces e.g. TIG, MIG)
Part geometry (can the welding torch fit into all tight corners)
Jigging (the part and all its components should be fully supported and held in position. Additionally, metals should be prepped - cleaned to bare shiny metal -ss before being assembled in the jig.)

The student teams should do the necessary research to determine the feasibility of the production of the part before it is given to the welder. Also note that there is a clear expectation that reasonable time-lines needed to complete any work must be observed and that it is up to the discretion of the team's welder with respect to his academic schedule.

Teams with home Department welding services available are welcome to continue using them and consider this service as an extra resource.

EDC 101A – Ledcor Group Composites Room

The EDC Team Space in room 101 is home to several student teams and the Ledcor Group Composites Room. The Composites Room is available for team use for activities including composites layup and sanding. The room maintains a negative pressure environment to prevent fumes from escaping to the Team Bays.

Rules:
- May be used for composites layup and sanding. NO spark-generating activities or sources of ignition allowed.

- The use of **spray paints is prohibited in this room**. Painting may be done in the Building Operations paint booth. You can contact the APSC Safety and Facilities Officer to arrange bookings.

- New users must first complete a Safety Orientation of the space. Email the EDT Coordinator a list of your availability to book an orientation.

- Appropriate PPE must still be worn when working in this space.

- The space must be clean and empty at the end of each use.

- Failure to follow these rules may lead to temporary or permanent loss of access privileges to the room.

- Teams must book the room before using the space, using this form http://goo.gl/forms/AvxArdVpct. Make sure to check the availability of the room on the teams website before proceeding http://teams.engineering.ubc.ca/student-resources/bookings/

The Ledcor Group Composites Room is also equipped with a flammables cabinet, for the storage of combustible and otherwise hazardous materials. Teams should use this cabinet to store hazardous fluids such as gasoline, resins, and paint thinners.

EDC 211 – Workshop

See: "To Obtain Access to EDC, CHBE, or LMRS"

The EDC 211 Workshop is comprised of two areas: A Design Space and a Fabrication Space. This workshop is a **shared** space between all the design teams and even graduate students, therefore it **must be kept clean** at all times. **Do your housecleaning** after you do your work in here – put tools away, vacuum/broom, clean spills, dispose of garbage, etc. **It is important to** note that **food and drinks are not allowed in this workshop**. Teams that do not follow these rules will be **banned** from the workshop, with no exceptions.

Design Space (EDC 211 table portion)
The design space is available for student use for design projects. The Design space includes workbenches, vices, and power outlets. This space also now features two 3D printers for prototyping purposes available to all the design teams. Below, the rules and policies for the two 3D printers can be found. It is important to note that these rules must be **strictly followed** by all design teams, failure to do so will result in teams being **banned** from using the printers.

ROKIT 3DISON H700 Professional 3D Printer ***Currently Broken***

The Engineering Design Team Council purchased a [ROKIT 3DISON H700 Professional 3D printer](). This printer is intended to be used as a high-quality prototyping tool and not as a learning or experimental tool like the MakerBot. Treat this printer as you would treat a CNC machine or a waterjet. The rules and policies are the following:

- Only team members that have completed the orientation session are able to operate the printer, including solving common issues. A maximum of 2 students per team is allowed to be trained by the EDT Coordinator.
- In case of a bigger printer malfunction, only the EDT Coordinator can attempt to fix the issue. Students shall **NOT** attempt to fix the printer without permission.
- There is an online booking service to book the printer, however, booking is not required. Teams that have booked the printer are given priority access. Please use your team name when booking.
- There is a booking time limit of 8 hours per team in a day during peak time periods. For longer booking times, please let other teams know via the EDT Slack.

Makerbot Replicator 2X 3D Printer

This printer is intended to be used as a prototyping tool with room for learning, but no experimentation. The rules and policies are the following:

- The Makerbot is open to every design team member that has completed an orientation.
- There is an online booking service to book the printer, however, booking is not required. Teams that have booked the printer are given priority access. Please use your team name when booking.
- There is a booking time limit of 5 hours per team in a day during peak time periods. For longer booking times, please let other teams know via the EDT Slack.

Access to both printers are controlled using Bluetooth locks. After the orientation session Provide the EDT Coordinator with your name, team, student number and email address to be granted access to the Bluetooth locks.

Fabrication Space (EDC 211 shop portion)
The fabrication space is equipped with a pipe bender, sand blaster, pan and box brake, foot shear, mill, and drill press. Students are permitted to use this equipment provided they have gained access have completed training for the *same* equipment elsewhere. Training will not be provided for this equipment. The Fabrication Space also features a CNC Router, available for wood or foam cutting. Teams may only use the CNC Router if they have been trained by the CNC Administrator (email the EDT Coordinator to determine who the current administrator is). Acceptable training for the fabrication space are:

- MECH shop course
- Eng Phys shop course
- ECE shop endorsements

- Training from BCIT or equivalent

EDC 213 – Electronics Workroom

See: "To Obtain Access to EDC, CHBE, or LMRS"

The EDC Electronics Workroom houses electrical equipment for student project use. Available equipment includes oscilloscopes, soldering irons, and multimeters. FOB access is required for the use of this space. It is important to note that no food and drinks is allowed in this room.

LMRS 160 - Fume Hood

A fumehood is available for use at UBC Rocket and Mars Colony's team space in the Lower Mall Research Station, room 160. To schedule usage of the fumehood, email UBC Rocket and Mars Colony (hello@ubcrocket.com and ubcmarscolony@gmail.com) and CC the EDT Coordinator and the APSC Safety Officer (team.engineering@ubc.ca and richard.colwell@ubc.ca).

Departmental Workshops

Several different departments at UBC have Workshops available for student use. The departments with student shops include: Mechanical Engineering, Electrical and Computer Engineering, Physics and Astronomy, Integrated Engineering, and the School of Architecture and Landscape Architecture. The departments which offer support machining services include: Mechanical Engineering, Electrical and Computer Engineering, Civil Engineering, Physics and Astronomy, Chemical and Biological Engineering, Materials Engineering, and Chemistry.

Please visit the sites of these individual departments for more information on usage, access, and equipment.

Information Technology Resources

If you have an IT request, fill out the form found on the Engineering Design Team website and email it to team.engineering@ubc.ca. If the EDT Advisory Committee approves the request, we will send it to IT.

The form can be found here: http://teams.engineering.ubc.ca/student-resources/edt-handbook/

ANSYS Suite

ANSYS Suite information can be found here: https://it.apsc.ubc.ca/ansys
ANSYS Advanced Training Manuals can be found here: https://ansys.license.apsc.ubc.ca/

To obtain access to ANSYS research licenses for team members personal computers:

1. Email the EDT Coordinator from your official design team email with the information below for each member requiring a license. The process for finding this information is available here: https://ansys.license.apsc.ubc.ca/
    1. PC Username
    2. PC Computer Name

SolidWorks Student Engineering Kit

To obtain access to SolidWorks, see: http://students.engineering.ubc.ca/success/software/

SolidWorks Product Data Management (PDM)

Information can be found here:
https://confluence.it.ubc.ca/display/APSCPDM/Applied+Science+Student+Teams+SolidWorks+PDM

Academic Concessions

If you will miss an exam due to travel for a design team competition or conference, please apply for an academic concession.   To do so, contact the Student Professional Development Officer, Minoli Navaratnam (minoli.navaratnam@ubc.ca).

FAQ

1. **I want to start a team. What do I do?**
   Refer to Starting a Design Team section of this Handbook.

2. **I have issues with my current team.**
   Depending on the nature of your concern, you may speak to your Team Captain, the Engineering Design Teams Coordinator (team.engineering@ubc.ca), the Student Professional Development Officer, (minoli.navaratnam@ubc.ca) the Safety and Facilities Officer (richard.colwell@ubc.ca) your Faculty Advisor, or the Engineering Student Teams Faculty Head (vdl1@mail.ubc.ca).

3. **I am a Team Captain and I'm not sure we'll meet our technical/financial goals this year. What should I do?**
   Set up an appointment as soon as possible with your Faculty Advisor first, and then the Engineering Design Teams Coordinator to discuss options.

   Teams are foremost an opportunity for students to develop personally and professionally, and learn from any potential failures. There is support available at all times.

4. **I am a team member and I see unsafe practices being conducted in or around my workspace. What should I do?**
   Contact your Safety Officer immediately. If you do not feel comfortable doing so, you may contact either of the following: The Engineering Design Teams Coordinator, the Student Professional Development Officer, your Faculty Advisor, the Safety and Facilities Manager, or the Engineering Student Teams Faculty Head.

5. **My team did very well at a competition. Who should I tell?**
   Congratulations. Please let the Engineering Design Teams Coordinator (team.engineering@ubc.ca) know, as well as the Applied Science Communications Manager, Wendy McHardy (Wendy.mchardy@ubc.ca), and the Applied Science Development Coordinator, (team.sponsorship@apsc.ubc.ca). All three may be able to promote your team's success at different levels within UBC and externally.

6. **My team is done with our project. What do we do with it now?**
   Many teams choose to hold on to their projects to show off at events. When this is less convenient (i.e. with larger projects), teams often salvage whatever parts and materials they can from the past projects, and dispose of the rest. Before destroying your project, please contact the Engineering Teams Coordinator to see if the Faculty of Applied Science would like to showcase your project.

7. **Why should I keep a personal log/portfolio of my student team activities?**
   Employers love seeing examples of actual technical work that has been completed by students. Example work gives a more complete picture of a student's capabilities and experience. It is never too early to start documenting your project experience. Good things to include in a student portfolio include 3D Models and Assemblies, Simulations, Computer Programs, Project Photos, and Project Results.

8. **I have spent money to buy supplies for the team, what should I do?**
   Keep all of your receipts, originals are required to be reimbursed. Please see the section Finance – Teams for more information.

If you have any remaining questions which were not answered in this handbook, please contact the current Engineering Teams Coordinator at team.engineering@ubc.ca.

Contact
team.engineering@ubc.ca