overSEAS
STUDY ABROAD
LETTER FROM THE DEAN

Engineering is increasingly a global profession with cross-disciplinary and cross-national collaborations and participation. As the world “shrinks,” it is important for your perspectives to expand. By gaining cultural fluency, you will enhance your competitive edge in a marketplace that values such international experiences.

Now more than ever, it is important for engineering and applied science students to experience diverse cultures and environments, and study abroad provides one of these opportunities. International study is a very significant enhancement to your Columbia Engineering education and offers you first-hand experience navigating the larger global community.

Students who study and work abroad discover insights into other cultures, develop new perspectives, and learn to reflect on how their own culture has shaped their understanding of the world. Stepping outside your comfort zone will broaden and improve your social and cultural awareness, making you a stronger and more valuable leader and player on any team.

We are committed to providing an increasing number of ways for our students to gain critical competencies in the global arena. Recognizing the rigorous nature of the engineering and applied science curriculum, we have provided several pathways for you to plan your academic program to include a global experience. The SEAS Office of the Assistant Dean for Student Affairs and Global Programs, in conjunction with the University Office of Global Programs, stand ready to assist you in thinking about and planning this next step in your Columbia Engineering education.

With best wishes for enhancing your global education,

Mary C. Boyce
Dean of Engineering
Morris A. and Alma Schapiro Professor
This brochure has been designed to let you know that SEAS students CAN go abroad! It takes some work, it takes some planning, but overall it WILL be worth it.
§What are the eligibility requirements?
You must have a 3.0 GPA and be making good progress toward finishing the Core foundation courses of the first two years.

§When is the best time to go abroad as a SEAS student?
Spring semester of sophomore year is generally the best time for SEAS students to study abroad, although a junior year semester abroad may be possible depending on your specific circumstances. After sophomore year, classes become very specific and must often be taken in a set sequence. Before sophomore year, most required classes are general, relatively easy to find equivalents for, and not contingent on specific prerequisites.

§When should I start planning my semester abroad?
As soon as possible! Students who start planning during their first year are most likely to be successful. By planning early you can make sure that you correctly sequence your Columbia classes and create space for more study abroad opportunities during your time here.

§Where have some SEAS students studied abroad?
For example:

- **Chemical engineering**: Ecole Centrale (Paris, France), UCL/Imperial College (London, England), Syracuse University in Madrid/Universidad Politécnica de Madrid (Madrid, Spain), CIEE Barcelona (Barcelona, Spain)
- **Computer engineering**: University of Sydney (Australia)
- **Biomedical engineering**: UNSW (Sydney, Australia), UCL (London, England)
- **IEOR**: University of Cape Town (South Africa)
- **Computer Science**: Wayne State (Munich, Germany)

And many others…
Where can I go abroad?

Anywhere you find the courses you need and that is approved by Columbia’s Office of Global Programs (OGP). There is a list of already approved universities and programs on the OGP website, but if you find another institution that isn’t already approved, work with the OGP to see if you can petition it.

 Larger universities are more likely to have required courses that SEAS students usually need. Columbia programs (Barcelona, Beijing, Berlin, Kyoto, and Paris) are also open to SEAS students.

 On the next page is a list of suggested universities to consider. This is, however, NOT an exhaustive list and if you find what you need somewhere else and you get all the requisite approvals, you can go! Talk to the OGP regional advisers to discuss what programs would be appropriate for you based on your goals for your semester abroad.
• King’s College, London, England  
• Queen Mary, University of London  
• Imperial College London, England  
• University College London (UCL), England  
• St. Catherine’s College, Oxford University, England  
• Bristol University, England  
• University of York, England  
• University College, Dublin  
• University of Glasgow, Scotland  
• University of Edinburgh, Scotland  
• University of St. Andrews, Scotland  
• Bogazici University, Turkey  
• Ecole Centrale, Paris, France  
• Ecole Polytechnique, Paris, France  
• Syracuse University in Madrid, Spain  
• Danish Institute of Study Abroad, Copenhagen, Denmark  
• University of Cape Town, South Africa  
• University of Melbourne, Australia  
• University of Sydney, Australia  
• University of New South Wales (UNSW), Australia  
• University of Canterbury, New Zealand  
• Korea University, Seoul  
• Hong Kong University of Science and Technology  
• Summer Language Program in Beijing, China
Do I need foreign-language proficiency to study abroad?

Engineers who want to study at a university in a non-English speaking country must take classes in that country’s language (unless the specific program is taught in English). If you do not have foreign-language proficiency, we encourage you to consider studying abroad in some of the excellent programs in English-speaking countries. There are also programs in foreign countries that are taught in English, and SEAS students do not need to fulfill any language requirement for these (unless, again, the specific program itself requires it). Speak to the Office of Global Programs for more information.
Can I get academic credit for major-specific classes while abroad?

Yes, if you get the required approval that the class you will be taking abroad is equivalent to the Columbia class you wish to replace. This approval must be secured before going abroad. You must contact Columbia professors whose classes you wish to get credit for and have them sign the Course Equivalence form found on your OGP study abroad profile.

Specific engineering classes are much harder to get approved than general science and math requirements, so plan accordingly!

It is also possible to get non-technical and technical elective credit while abroad. Speak with your Advising Dean at the Center for Student Advising (CSA) about the non-technical credits and with your department about the technical elective credits. Technical electives will need to be approved by Columbia professors using the Course Approval form, and non-technical electives are approved by your CSA adviser.

What kind of classes should I consider taking abroad?

General and basic requirements such as: calculus, statistics, differential equations, linear algebra, biology, chemistry, economics, computer science, mechanics, Global Core**, other technical and non-technical electives (see list below for more specific suggestions). Any major-specific class MUST be approved as equivalent by the Columbia professor teaching that class before going abroad. It is less likely that highly specific engineering courses will be approved, so plan to fulfill basic requirements while abroad.

You will have to petition to the Committee on the Global Core for a course to count towards the Global Core, and this can only be done upon your return. It will take up to a full semester after you return to receive a decision on your request. You will have to take this into account in your planning.

I haven’t decided on my major but I really want to study abroad. What do I DO?

Take Columbia-specific classes as soon as possible, and leave more general classes for sophomore year.
What classes might I find equivalents for at a foreign university?

Please note that this list is not exhaustive nor is it definite. It is to be used as a guide and you MUST consult with the department for all final approvals.

APMA E2101: Introduction to Applied Mathematics
CHEM C1403, CHEM C3443, BIOL W2001, or BIOL C2005
CHEM C3443: Organic Chemistry I (Note that if you are pre-med, you cannot take any of your premed requirements abroad)
COMS W1003/4/5: Introduction to Computer Science and Programming (Check the specifics with your department, including which language is required)
COMS W1007: Object-oriented programming
COMS W3134/3137: Data Structures and Algorithms (IEOR students must take this course at Columbia)
COMS W3203: Discrete math
COMS W3210: Scientific computation
COMS W3261: Computer science theory
COMS W4111: Introduction to databases
ECON W1105: Principles of economics
ELEN E3801: Signals and systems
ENME E3105: Mechanics
ENME E3113: Mechanics of solids
ENME E3161/MECE E3100: Fluid mechanics
IEOR E2261: Introduction to Accounting and Finance
MATH E1210: Ordinary Differential Equations
MATH V1202: Calculus IV
MATH V2010 or APMA E3101: Linear algebra
MECE E3301/CHEE E3010/MSAE E3111: Thermodynamics (Check with your department for the specific course and the important concepts that must be covered in an equivalent course)
SIEO W4150/3600: Introduction to Probability and Statistics
STAT W1211: Introduction to Statistics (with calculus)
STAT W4105: Probability
What classes are NOT allowed for Study Abroad?
Literature Humanities, Contemporary Civilization professional-level classes (http://bulletin.engineering.columbia.edu/professional-level-courses-first-and-second-year-students), The Art of Engineering, other Columbia-specific classes.
It is also more difficult to get engineering classes approved and/or to find equivalents for them abroad, so plan ahead, go abroad sophomore year, and look to take more general science or non-technical classes abroad.

What if I’m pre-med?
It’s possible to do a Study Abroad but a little trickier! You can’t take any of your pre-med courses abroad, so these will need to be fit in around the study abroad experience.
Speak to an adviser at the Office of Global Programs (http://ogp.columbia.edu/?go=Premed) and the Office of Pre-Professional Advising (http://www.studentaffairs.columbia.edu/preprofessional/health) for more information.
There are also a number of summer study abroad programs available. Speak with an adviser in the Office of Global Programs for more information.

Whom do I get approval from for the courses I take abroad?
Non-technical courses: You need to get approval from your CSA adviser.
Technical courses: All tech courses must be approved by the Columbia professor who teaches that course. Speak to the Columbia professor who teaches the course you wish to take abroad and have the Course Equivalence form signed for each of these classes. The form can be found on the Office of Global Programs (OGP) website once you have started your study abroad profile.
Liberal Arts Minor Courses: If you are pursuing a liberal arts minor, contact your CSA adviser. Note that only one course, including AP credit, may be taken outside of Columbia and count towards the minor.

What happens to grades received while abroad?
Grades received at any other institution or program will be reflected on the Columbia transcript as transfer credits and will not be included in your GPA. However, these grades do not disappear, as graduate schools, medical schools, and summer research program applications require transcripts from ALL universities you attended as an undergraduate!
FINANCIAL AID

§What happens to financial aid while abroad?

You pay Columbia’s tuition; Columbia will bill you only for your tuition. Columbia will then pay for all the academic fees of the program. Your financial aid will continue while you are abroad and your personal and parental contributions should not change drastically as a result of going abroad.

You are responsible for all other fees, such as room and board. Please visit http://ogp.columbia.edu/ and click on “Getting Started.” You should also speak to your financial aid adviser: http://www.studentaffairs.columbia.edu/finaid/

SEAS VS Columbia College abroad

Though it may at times seem harder for SEAS students to go abroad, some aspects of the process are actually easier.

- SEAS students do not have a two-year language requirement if the program will be taught in English (even if the program is in a non-English speaking country). However, some individual programs may have a language requirement.
- SEAS students do not have to take a regional course prior to going abroad, though it is recommended.
- SEAS students can more easily take non-tech requirements during the summer on programs in many languages, including English. CC students can only take foreign-language for credit during the summer.
- However, SEAS students MUST get approval for all classes they plan to take while abroad before leaving (especially those counting toward their major!).
Students may begin meeting with and speaking with any of the offices listed below at any point. The process does end with the Office of Global Programs, where ultimately all signed and completed forms must be turned in and reviewed.

Office of Global Programs (OGP)

Regional and program experts
- Inform students about different program options and geographic regions
- Discuss the overall purpose and value of studying abroad
- Give the final clearance for studying abroad
- Help students contact programs and universities abroad to obtain course listings

The advisers in the office of global programs are divided regionally. If you have general questions, Scott Carpenter and Sara Ede are your best first contacts for general inquiries.

For the UK/Ireland/Australia/New Zealand and non-Columbia summer programs:
- Scott Carpenter, sc2764@columbia.edu

For Sub-Saharan Africa, Iberia, Latin America:
- Sara Ede, see2119@columbia.edu

For Asia:
- Fay Ju, fj11@columbia.edu

For Europe (excluding Iberia/UK/Ireland), Middle East and North Africa:
- Lindsey Schram, ls2553@columbia.edu

Office of Global Programs, 606 Kent Hall
http://www.ogp.columbia.edu
Center for Student Advising (CSA)

§Advisers
- Work with students to develop four-year academic plans which allow for and take into account a study abroad semester
- Give the overall general clearance for studying abroad
- Approve non-technical elective credit and credit towards minors

CSA Advisers: Center for Student Advising, 403 Lerner Hall
http://www.studentaffairs.columbia.edu/csa/

SEAS Faculty and Departments

§Instructors and Departmental Advisers
- Sign-off on individual courses as equivalent to Columbia
- Faculty approve technical and major requirement credits
- Departments give final approval ensuring all courses taken abroad will count toward the major
• Assists students in reviewing their major requirements and progress towards the major
• Guides and advises students with regards to obtaining course equivalencies
• Where necessary, assists with obtaining course equivalencies, works with faculty where necessary to help with identifying programs and courses that will meet major requirements, and negotiates with faculty where a student wishes to travel abroad
• Advises students regarding SEAS-specific study abroad questions

Leora Brovman, Assistant Dean
Undergraduate Student Affairs and Global Programs
(SEAS-specific study abroad adviser)
254 Mudd
The Fu Foundation School of Engineering and Applied Science
500 West 120th Street, New York, NY 10027
phone: 212-851-9367
lb2258@columbia.edu
http://engineering.columbia.edu/study-abroad-0

Forms and Signatures
• Study Abroad clearance – completed and signed by Advising Dean (CSA) and OGP
• Non-technical elective approval – completed and signed by Advising Dean (CSA)
• Four-year academic plan – Advising Dean and student (optional but strongly recommended)
• Majors Course equivalence form – signed by Columbia instructor teaching similar class; signed by SEAS major department adviser
• Study Abroad registration – Office of Global Programs

All forms can be accessed through the Office of Global Programs website and must be submitted to the OGP.

overSEAS STUDY ABROAD 14
Other Useful Resources for Study Abroad

- Funding for Overseas Study or Research:
  http://engineering.columbia.edu/funding-overseas-study-or-research

- Intern Abroad:
  http://engineering.columbia.edu/intern-abroad