

Memorandum

To: General Education Board

From: Tom Jewell, Director of International Programs for Engineering and Computer Science (on behalf of the engineering programs and Dean Traver)

Subject: International Experience Requirement for Engineering Students

A note to put things in historical context. As more senior members of the Gen. Ed. Board probably remember, prior to 1995 the engineering programs were excused from the General Education Section 4 requirements, as it was felt that our curriculums did not provide sufficient flexibility for students to be away for a term. In 1995 we undertook a major curriculum review under the leadership of then Dean of Engineering Richard Kenyon. One of our major conclusions was that engineering was becoming more and more a global enterprise, so the engineering programs voted to voluntarily assume the Section 4 requirements.

Our motivation and goals for requiring some sort of international experience are as follows:

Why do we value an international experience for our engineering students?

- 1) *Engineering is increasingly a global profession. Organizations and companies that hire engineers increasingly have customers, suppliers, parts of their operation, or partners abroad.*
- 2) *Engineering graduates who understand and interact well with other cultures will be sought after by global companies and those companies developing global ties.*
- 3) *Engineers who have a global perspective are generally better able to provide leadership in the organizations they serve.*
- 4) *Engineers proficient in two or more languages can operate much more effectively in the international arena than those knowing only English.*

What should our students gain from their international experience?

- 1) *Understanding and appreciating cultures outside the US.*
- 2) *Learning a foreign language (if possible).*
- 3) *Being able to work effectively with people from cultures outside the US.*

How do engineering students satisfy the international experience requirement under the old General Education criteria?

Under the auspices of the AAC and the General Education Board, the following are the ways that the engineering students can meet the Section 4 requirements:

- Terms abroad or exchanges. (3 courses)
- International design projects. (formerly IVDS). (2 courses)
- International internships. (at least 8 weeks)

- Mini-term abroad + 1 cognate course. (or two cognate courses for mini-terms without pre-trip seminars)
- A language or culture sequence. (3 courses, or 2 language courses if starting at the 102 level or higher)
- International summer programs. (with approval from the Dean of Undergraduate Education – may or may not carry course credit)

Note that international internships and international summer programs are not tied to academic credit.

Tables 1 and 2 below show how engineering students have met the Section 4 requirements over the past several years.

TABLE 1: ENGINEERING STUDENTS' INTERNATIONAL EXPERIENCES (Percent of graduates participating in a particular experience)

Type of Experience	2007 (Tent.)	2006	2005	2004	Five Year Average (99-04)
Regular Term Abroad	28%	19%	15%	13%	19.7%
Exchange	28%	30%	31%	39%	31.1%
Mini-term	18%	23%	34%	28%	31.5%
(International Design Project (IVDS)				2%	4.2%
International Term in Industry					1.2%
Other (Not involving international travel)	See Below	See Below	20%	18%	12.3%
Cultural Diversity Track	12%	15%			
Language	14%	13%			

TABLE 2: COMPARISON OF ENGINEERING WITH THE COLLEGE AS A WHOLE (Percent of graduates participating in at least one international experience)

Year	Union as a whole	Engineering
2007		74% (Tent.)
2006	59%	72%
2005	62%	80%
2004	65%	82%

As you can see, the engineering programs have fared very well in comparison with the college as a whole. This is due mainly to an aggressive marketing of international experiences by the engineering advisors, and our stated policy in the *Academic Register*, which is copied below.

You will also note that although international design projects, international internships and summer programs are valid ways of meeting Section 4 requirements, we have not had any students go this

route in recent years. However, we are actively pursuing opportunities in these areas, and want to keep the authorization open.

Present Academic Register Copy: Engineering and Computer Science have become global professions. As a graduate you will likely find yourself working on an international team in a global company, working for an organization with international clients, or being dispatched to international locations to negotiate or oversee work. Thus it is critically important that you understand the nuances of other cultures, and the proper way to communicate. One of the best ways to accomplish this is through an international experience as a student. For engineering and computer science students possible experiences include: 1) regular terms abroad, 2) engineering exchanges, 3) international internships in industry, 4) mini-terms abroad, and 5) collaborative international design projects. For more information on these programs, please visit our website at engineering.union.edu/eta/, or email Professor Jewell, Director of International Programs for Engineering and Computer Science, at jewellt@union.edu.

How do these General Education Section 4 provisions map to the CCC “Linguistic and Cultural Competency” requirement?

Two (2) courses in Linguistic and Cultural Competency.

This category includes courses in any discipline covering:

1. Term Abroad courses that deal with a cultural tradition outside the US
2. Cross-cultural comparison and theories about cultural complexity
3. One or more cultural traditions outside of the US
4. One or more cultural traditions in the United States from historically unrepresented populations
5. A sequence of two courses in a foreign language at level 102 or higher.

The Linguistic and Cultural Competency requirement as published is tied to academic credit. The engineering programs would like to request that the L&CC requirements for engineering be modified to be parallel with what has been the practice in the past. In essence, our L&CC requirements should read:

The Linguistic and Cultural Competency requirements for engineering students are:

- *Terms abroad or exchanges. (3 courses)*
- *International design projects (formerly IVDS). (2 courses)*
- *International internships. (at least 8 weeks)*
- *Mini-term abroad. (1 additional cognate course is required for mini-terms without pre-trip seminars)*
- *International summer programs. (with approval from the Dean of Undergraduate Education – may or may not carry course credit)*
- *A sequence of two courses in a foreign language at level 102 or higher.*
- *Two courses in any of the following areas:*
 - ✓ *Cross-cultural comparison and theories about cultural complexity.*
 - ✓ *One or more cultural traditions outside of the US.*
 - ✓ *One or more cultural traditions in the United States from historically unrepresented populations.*

The catalog copy for the International Programs section under Engineering would be modified to read:

New Academic Register Copy: Engineering has become a global profession. As a graduate you will likely find yourself working on an international team in a global company, working for an organization with international clients, or being dispatched to international locations to negotiate or oversee work. Thus it is critically important that you understand the nuances of other cultures, and the proper way to communicate. One of the best ways to accomplish this is through an international experience as a student. Therefore, engineering students, except under extraordinary conditions (as approved by the student's academic advisor and department chair), are expected to meet the Linguistic and Cultural Competency requirements of the Core Components Curriculum by participating in some type of international experience. For engineering students, possible experiences include: 1) regular terms abroad, 2) engineering exchanges, 3) international internships in industry, 4) mini-terms abroad, 5) collaborative international design projects, and 6) summer international experiences. For more information on these programs, please visit our website at <http://engineering.union.edu/eta/>, or email Professor Jewell, Director of International Programs for Engineering and Computer Science, at jewellt@union.edu.

We hope you will be able to act on this request with some urgency, as we would like to have the revised catalog description included in the 2007-08 *Academic Register*.

SPRING 2008 REGISTRATION INSTRUCTIONS
FOR UP-TO-DATE information visit the web at
http://www.union.edu/CSCHED_PUBLIC/08.SP.html

Course selections must be made in consultation with faculty advisors. The 2007-08 Academic Register gives full descriptions of courses as well as information on prerequisites. Additional course descriptions may be found within this document.

COURSE NUMBERING SYSTEM: Courses numbered 0-49 carry no credit. Courses numbered 50-99 are designated for General Education or other courses that do not count for the major. Courses numbered 100-199 are all introductory level offerings. Courses numbered 200-299 are those at the sophomore/junior level that may also be taken by non-majors. Courses numbered 300-399 are upper-level which are primarily intended for majors, i.e. courses which represent the depth component of the major. Courses numbered 400-499 are all advanced level courses for seniors, including those used to fulfill the Senior Writing Experience (WS), seminars, research, thesis and independent studies.

COURSE LOAD: Written Permission from your advisor is required and must be submitted to the Office of the Registrar when taking less than the normal course load [three (3) courses] per term. See page 2 for information regarding fourth courses.

FOREIGN LANGUAGES: Before you sign up for your first language course at Union, you must check with the Modern Languages department so that the level at which you should be placed can be determined, even if you have studied the same language in high school. You will be given a placement recommendation form that must be brought to the Registrar either during prescheduling or add/drop. For information on prerequisites, please refer to the catalog. No student will be allowed to register for a language course unless they:

- 1) have taken the prerequisite course **here at Union** or
- 2) have a signed placement recommendation form.

DISCLOSURE OF DIRECTORY INFORMATION: Union College hereby designates the following student information as public or "Directory Information." Such information may be disclosed by the institution for any purpose, at its discretion:

Name, address (campus, home, e-mail), telephone numbers, date and place of birth, academic fields of study, dates of attendance, ID photographs, participation in recognized activities and sports, degrees and awards, weight and height of athletic team members, most previous educational agency or institution attended, or other similar information. The College may publicize or respond to requests for such information at its discretion. However the use of these records for commercial or political purposes is prohibited unless approved by the Vice President for Academic Affairs.

Union College assumes that failure on the part of any student to specifically request the withholding of "Directory Information" indicates individual approval for disclosure. Furthermore, pursuant to the terms of the Family Educational Rights & Privacy Act of 1974, as amended, Union College reserves the right to publish or release any or all of the above "Directory Information" for internal institutional use only, whether or not a student requests the withholding of such information by the means indicated above.

KEY TO ABBREVIATIONS

Y= Petition Course (written permission required of the instructor)

Key to GenEd and Core Components Curriculum abbreviations:

AMC	American Civ	EUCS	European Civ/Survey
AMCS	American Civ/Survey	EUHT	European History
AMHT	American History	EUL	European Lit
AML	American Lit	EULS	European Lit/Survey
AMLS	American Lit/Survey	*LCC	Linguistic & Cultural Competency
ANC	Ancient Civ	MATH	Mathematics
ANCS	Ancient Civ/Survey	*QMR	Quantitative & Math Reasoning
ANHT	Ancient History	SCIE	GenEd Science
ANL	Ancient Lit	SCLB	Science w/Lab
ANLS	Ancient Lit/Survey	SCMJ	Science for Majors
CDAA	Africana Studies	SCMT	Science w/Math
CDEA	East Asian Studies	SOCS	Social Science
CDLA	Latin American Studies	*ST	Science/Technology
EUC	European Civ		

* New Core Component Codes

Understanding the New General Education distribution requirements

First-Year Preceptorial and Sophomore Research Seminar:

- First-year students will be assigned to an FPR section during Fall or Winter term of their first year.
- Sophomores will be assigned to an SRS in one term during their sophomore year. Rising sophomores will be given an opportunity to express their preference for SRS topic and term in April, prior to the pre-registration period for Fall term.
- Note that neither FPR nor SRS will be credited toward any major or minor.

Social Sciences (1) - Any course listed in a Social Sciences department will satisfy the Social Sciences distribution requirement.

Humanities (2) one must be a literature course.

- Any course listed in a Humanities department will satisfy the Humanities distribution requirement.
- Any MLT course will satisfy the literature requirement.
- Any course previously assigned "L" (AML, AMLS, ANL, ANLS, EUL, EULS) will satisfy the Literature requirement under the Humanities distribution requirement.

Linguistic and Cultural Competency (2)

- Any sequence of two courses in one foreign language at level 101 or higher will satisfy the LCC requirement.
- Any course previously assigned CDAA, CDEA or CDLA, or any course carrying the new LCC designation will count toward the LCC requirement.
- Any full term abroad will satisfy both LCC requirement. A miniterm satisfies both LCC requirements only if it is associated with an on-campus pre- and/or post-term seminar.

Quantitative and Mathematical Reasoning (1)

- Any course previously carrying the MATH designation or carrying the QMR designation will satisfy the QMR requirement.

Science and Technology (2)

- Any course listed as SCLB (whether counted toward the major or not) will satisfy the Science with Lab requirement.
- Any course previously carrying the SCIE, SCLB, SCMJ or SCMT designations or listed by a department in Division 4, or carrying the new ST designation will satisfy the second Science/Technology requirement.

Clusters

- Any three courses in an approved cluster, from at least 2 different departments, satisfy the Cluster requirement. Information about clusters may be found at:
 - http://www.union.edu/Academics/id_studies/clusters/
- Any minor in a recognized Interdisciplinary Program or an Organizing Theme minor satisfies the Cluster requirement. A list of recognized ID programs and the OT program may be found at:
 - http://www.union.edu/Academics/id_studies/ID/

Key to WRITING ACROSS THE CURRICULUM:

WAC=one unit of writing credit
WS=Senior Writing

WAC/S = WAC or Senior Writing

NOTE: Writing courses are designated as either WAC or WS. All students will need five (5) WAC courses, including one outside the Division of the major, and one senior writing experience, (WS).

Location Codes:

BAIL	Bailey Hall	NWSE	North Wing, Sci & Engr Ctr
BEUT	Beuth House	OLIN	Olin Building
BLUE	Blue House	SORM	Sorum House
BREZ	Breazzano (Orange) house	SSCI	Social Science Bldg.
BUTR	Butterfield Hall	STZH	Steinmetz Hall
COLC	Reamer Campus Center Auditorium	SWSE	South Wing, Sci & Engr Ctr
ELAB	Engineering Lab	TMC	Taylor Music Center
GOLB	Golub House	VART	Visual Arts Building
GREN	Green House		DANS – Dance Studio
HUMN	Humanities Building		VAS – Visual Art Studio
LIBR	Library	YULM	Yulman Theatre
MEMC	Memorial Chapel	WOLD	Wold House

All,

The Gen Ed Board would like to make clear and complete information about what Gen Ed categories are satisfied by miniterms. We would also like to clarify with which department(s), interdisciplinary program(s), and cluster(s) each miniterm is associated.

In the early days of miniterms, several were developed with funding from the Keck Foundation and from the Christian Johnson Endeavor Foundation. These were designed to include significant pre-departure and/or post-return seminars and presentations, and while students earned only one course credit, they were given two distribution credits toward study of another culture (the old Gen Ed part IV, the new Gen Ed LCC). We would like to make it clear to students which of the miniterms do in fact carry two Gen Ed LCC credits.

Please answer the ten questions on the attached survey [next page]; it should just take a few minutes. I have also attached a spreadsheet with the miniterm list we are using. If you have any questions, just ask.

Thanks in advance,

Doug