

# **Report of Study Group on Globalization of Undergraduate Engineering Curriculum**

To

Core Curriculum and College Services Committee

Robert J. Gustafson, Chair

25 October 2012



Executive Summary and Recommended Actions

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## Executive Summary and Recommended Actions

A Study Group was established by the Core Curriculum and College Services Committee in Autumn of 2011 to address “the issue of what changes we might recommend to better prepare our undergraduate engineering students for the practice of engineering in a global environment.” The group met frequently through October of 2012. It reviewed previous reports and current literature as well as studied current programs at Ohio State and other leading institutions. A set of global competencies for engineering students was established. Alumni and advisory groups were surveyed to establish priorities for competencies and measures of alumni preparedness. The following recommendations grew out of the work of the Study Group.

*An overriding recommendation is that we pursue a college-wide approach to integrating global competency for undergraduate engineers. Models for college-wide integrated approach and progression of programs and such as those presented in Figures 1 and 2 of this report should be adapted for our use. The eight competencies identified by the Study Group can be used as desired outcomes in this area.*

The following specific actions are recommended:

1) Support interested faculty to develop and integrate curriculum elements within their current courses that address “Understanding of the international aspects of engineering topics such as supply chain management, intellectual property, liability and risk, market and product design considerations, and business practices.”

2) Develop a “Global Option” as envisioned by Office of International Affairs specifically for engineering students. Core curriculum and College Services Committee should establish a work group for this purpose.

3) Make specific curriculum changes:

- Change General Education requirement for diversity from U.S. diversity to World diversity and revamp ENGR 2367 (2<sup>nd</sup> Writing) to meet the international diversity requirement rather than U.S. diversity.
- Encourage our general education ethics course providers to include an element of international ethics within the approved courses.
- Determine ways in which General Education options that develop the global competencies can be further encouraged.
- Encourage inclusion of international aspects of engineering in the first-year course sequences.

4) Consistent with the College’s strategic plan, establish a College of Engineering Globalization Studies Office with specific responsibilities and funding for study abroad opportunities and coordination of curriculum globalization activities within the curriculum.

- Encourage discipline-focused study abroad, internships and coop opportunities.
- Develop a broad set of international experiences with enough variety to meet the needs in all the college’s programs.
- Support faculty development for international opportunities.

## 1. Charge to the Study Group and Membership

In Autumn of 2011 the Core Curriculum and College Services Committee authorized a Study Group to address “the issue of what changes we might recommend to better prepare our undergraduate engineering students for the practice of engineering in a global environment”. Membership of the group has been:

|  |   |
|--|---|
| Blaine Lilly, Integrated Systems Eng       | Daniel Mendelsohn, Mech and Aerospace Eng         |
| David Tomasko, Associate Dean, Engineering | Esther Gottlieb, Office of International Affairs  |
| Prathamesh Karandikar, Student CBE         | Laurie Maynell, U Ctr for Advancement of Teaching |
| Radoslaw Lewandowski, Student ME           | Richard Freuler, EEIC                             |
| Steven Bibyk, Electrical and Computer Eng  | Robert Gustafson (Chair) EEIC                     |

The initial charge to the committee included:

- 1) Identify and define important dimensions/competencies that could or should be addressed in our engineering curriculum in some way.
- 2) Identify current and potential curriculum and co-curriculum opportunities aligned to the important dimensions/competencies. Highlight opportunities:
  - a. across the full curriculum
  - b. for potential collaboration with other units
  - c. for co-curricular elements
- 3) Review best practices by other units, in particular engineering colleges in this area.
- 4) Develop a set of recommendations useful to the College and its programs for consideration by the Core Curriculum and College Services Committee.

## 2. Introduction to Report and Overview of Activities

This report can only highlight the information the committee reviewed and considered. The goal of the report is to give the reader adequate background to make decisions regarding the recommendations of the Study Group for impacting the undergraduate engineering student. It will also give references and append material for more in-depth study if so desired. The group met consistently throughout the year 2011-2012 but found it needed to continue into 2012-13 to complete a desired survey and develop a more robust report.

## 3. Results of a previous study group

In August 2008, Interim Dean Greg Washington charged the College of Engineering International Task Force with assessment of the status of international education in engineering and recommendations for strategic actions to be taken up by the College. His request included a focus on providing significant international experiences for both undergraduate and graduate students across the College. Their report was the result of one quarter’s efforts to inform the Dean and his leadership team about the College’s existing international studies programs, faculty interests, barriers and challenges, and opportunities in the context of national and local globalization objectives. A very brief summary is included as Appendix 1 of this report.

Among other things, the report recommended that the “College of Engineering continue the efforts of this committee to develop new opportunities and strengthen existing programs, including long-term and short-term abroad studies options, internships, and exchanges without delay.”

This Study Group report builds on the work of this earlier group.

#### **4. Study of Literature and Current Programs**

The area of globalization in engineering is an active and rapidly expanding domain. For example, fourteen paper and poster sessions were held at the 2012 ASEE meeting by the International Division alone. Therefore a comprehensive review of literature was not possible. However, a number of key articles that describe programs of interest at institutions similar to Ohio State and those that were studying the more fundamental aspects of globalization of the curriculum were reviewed by the committee. Representative references would include:

Downey, G. L., and K. Beddoes (Eds.) 2010. What is Global Engineering Education For? The Making of International Educators (Part 1, 264 p.) Morgan & Claypool, San Rafael, CA.

Gordon, J., A. Henry and J. Lohmann. 2011. “Instilling Global Competence: A Longitudinal Study of the Georgia Tech International Plan.” Office of Assessment, Georgia Institute of Technology, August 2011.

Parkinson, A. P. 2007. “Engineering Study Abroad Programs: Formats, Challenges, Best Practices”, Proceeding of the ASEE 114<sup>th</sup> Annual Conference and Exposition, Honolulu, Hawaii, June 24-27.

Warnick, G. M., S. P. Magleby, B. E. Nelson. 2012. “Developing a Pervasive College-wide Approach to Integrating Achievement of Global Competence into the Curriculum” . Paper AC 2012-4834, American Society for Engineering Education.

The previous study group had identified Georgia Tech and Purdue as leading institutions with programs in this area. The Study Group reviewed websites of the two institutions and did a video conference with Dr. Brent Jesiek, Purdue University, School of Engineering Education. He is Associate Director of Purdue’s Global Engineering Program and is publishing extensively in this area. Relevant websites for these two institutions are:

<http://www.internationalplan.gatech.edu/>

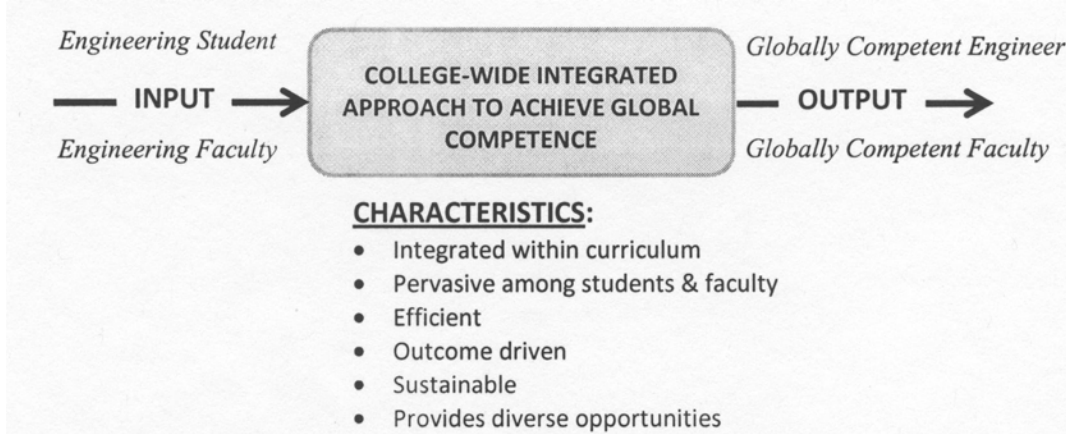
<https://engineering.purdue.edu/GEP>

Parkinson (2007) summarized ten different methods to provide international opportunities for students including: 1) dual degree – students obtain two degrees, with one from home university and the other at an abroad university; 2) exchange – students are exchanged between partner universities and take courses in the abroad language; 3) extended international field trip; 4) extension – university extension campus in an abroad country; 5) international design/capstone projects; 6) international internship or co-op; 7) mentored travel; 8) partner subcontract - home university contracts for courses to be taught at an abroad university; 9) international project/service based learning; and 10) international research.

Warnick, et al. (2012) described a system for achieving global competence within graduates that is integrated into their curriculum at Brigham Young University (BYU). Their two primary thrusts were 1) creation of a set of competencies including levels of the competencies, and 2) promotion of the growth

of technically-oriented international programs and experiences. Figure 1 highlights their model, including as inputs of both students and faculty and as outputs globally competent engineers and faculty.

Figure 1. College-Wide Integrated Approach to Achieve Global Competence (BYU)



They concluded a key component of creating a college-wide system was the development of a broad set of international experiences with enough variety to meet the needs of the students in all the college’s programs. Establishing successful programs initially requires the efforts of faculty passionate about some facet of global competence. They reasoned a bottom-up approach was the best way to proceed. The second consideration guiding the development process was a recognition that once individual programs had successfully demonstrated that they met a need and could be sustainable, there is a need to introduce standardization to “ensure that the programs supported educational outcomes, were well integrated into program requirements, had proper oversight, had sufficient ownership and buy-in at the departmental level, and were directed by a cadre of trained faculty on a rotating basis”. Figure 2 describes a model for integration based on key program dimensions.

Figure 2. Progression Model for Integrating International Programs into an Engineering Curriculum (BYU)

| Program Dimensions        | Engineering Curriculum Integration Level |  |   |
|---------------------------|--|--|---|
|                           | Low                                      | Medium   | High  |
| <b>Ownership</b>          | University                               | College  | Department/Program                                  |
| <b>Participation</b>      | Open to all students                     | Filtered by major and class standing           | Only students with program-specific pre-requisites  |
| <b>Curriculum Linkage</b> | No formal relationship                   | Valid elective credit for degree               | Fulfills one or more program requirements           |
| <b>Director Status</b>    | Passionate people pushing the system     | Passionate people that receive teaching credit | Qualified faculty rotated through director position |
| <b>Program Focus</b>      | Focus on location and student experience | Focus on student learning                      | Focus on achieving program outcomes                 |

## 5. Developing familiarity with recent activities at OSU

Representatives of the Office of International Affairs briefed the group on recent work with two specific units, Social Work and College of Public Health. A representative of the College of Social Work met with the Study Group and described their development of an international option within their degree program.

Office of International Affairs also presented a program proposed as the “Global Option: A Curricular Enhancement and its Plan for Implementation”. As described in their briefing sheet (Appendix 2), “The Global Option has been endorsed for implementation by the Provost’s Council (10-21-2011). It calls for the creation of a defined set of educational activities and experiences that together yield an enhanced learning opportunity for undergraduates interested in acquiring a documented focus on international issues related to their program and discipline. The Global Option plan presented here only defines the frame conditions. An academic program that elects to implement such a Global Option will need to define the specific courses, activities, and experiences that are relevant to the discipline.”

## 6. OSU COE global competencies for engineering students

In line with a continuous quality improvement (CQI), outcomes based approach of the college, the Study Group decided on a strategy of 1) defining desired global competencies (outcomes) for engineering graduates and 2) collecting data regarding the relative importance of each and our current performance against these competencies. It was hypothesized that, given a defined set of competencies and performance measures, recommended actions could be more reliably developed based on both importance and performance gap measures. Only a relatively small number of works have explicitly attempted to define global competencies for engineers. For this work the Study Group settled on three sources of competency statements. Two are explicitly for engineering. The third was developed for Ohio State students at large by the Office of International Affairs. These three sets and corresponding references are given Table 1.

Table 1. Global Competencies for Engineering – Three Sources

|   | International Affairs 5 Competencies <sup>1</sup>                              | Global Competence Means Engineering Graduates <sup>2</sup> ,                                    | To succeed in today’s global workforce, an engineer must <sup>3</sup>                                  |
|---|--|---|--|
| 1 | Ability to work effectively in international settings                          | Can appreciate other cultures.  | Show mastery of at least one foreign language for native English speakers.                             |
| 2 | Awareness of and adaptability to diverse cultures, perceptions and approaches  | Are able to communicate across cultures.  | Complete a study abroad experience (either summer or semester).  |
| 3 | Familiarity with the major currents of global change and the issues they raise | Are familiar with the histories, governments, and economic systems of several target countries. | Have profound understanding of global cultural diversities and their impacts on engineering decisions. |
| 4 | Capacity for effective communication across cultural and linguistic boundaries | Speak a second language at a conversational level.  | Have well developed oral, written, and visual communication skills.                                    |
| 5 | The ability to comprehend the international dimension of one’s field of study  | Speak a second language at a professional (i.e. technical) level.                               | Demonstrate an ability to work harmoniously and efficiently in diverse group settings.                 |
| 6 |  | Are proficient working in or directing a team of ethnic and cultural diversity.                 | Achieve professional licensure/registration.   |

|    |  |  |  |
|----|--|--|--|
| 7  |  | Can effectively deal with ethical issues arising from cultural or national differences.  |  |
| 8  |  | Have an understanding of the connectedness of the world and the workings of the global economy.  |  |
| 9  |  | Understand implications of cultural differences on how engineering tasks might be approached.  |  |
| 10 |  | Have some exposure to international aspects of topics such as supply chain management, intellectual property, liability and risk, and business practices.  |  |
| 11 |  | Have a chance to practice engineering in a global context, whether through an international internship, a service-learning opportunity, a virtual global engineering project or some other form of experience. |  |

<sup>1</sup>OSU Office of International Affairs, 2011 (Nov.) Draft Document on "OSU Global Strategies & International Affairs - Internationalizing Students' Learning Experience", Ohio State University, Columbus, OH.

<sup>2</sup>Klein-Gardner, S. S. and A. Walker. "Defining Global Competence for Engineering Students" *Proceedings of the 2011 ASEE Annual Conference and Exposition*, Vancouver BC, 2011.

<sup>3</sup>Waggenspack, W. N., W.R. Hull, D. Bowles, S. Liggett, and S. O. Sears. "Academic Preparation for the Global Engineer" *Proceedings of the 2011 ASEE Annual Conference and Exposition*, Vancouver BC, 2011.

The Study Group, by group consensus, consolidated the three lists into the following set of eight statements (Table 2). The group defined these eight global competencies by combining similar statements and eliminating some that were deemed to be an experience or not a competency.

Table 2. Global Competences for Engineers

|   |
|---|
| 1. Understanding of global cultural diversities and their impact on engineering decisions.  |
| 2. Ability to deal with ethical issues arising from cultural or national differences.   |
| 3. Proficiency in a second language.  |
| 4. Ability to communicate across cultural and linguistic boundaries.  |
| 5. Proficiency in working in an ethnically and culturally diverse team.   |
| 6. Understanding of the connectedness of the world and the workings of the global economy.  |
| 7. Understanding of the international aspects of engineering topics such as supply chain management, intellectual property, liability and risk, market and product design considerations, and business practices. |
| 8. Familiarity with the history, government, and economic system of several target countries.   |

In order to gain broad input regarding the importance of these competencies and performance of our graduates, a survey was developed to use in conjunction with the semi-annual college survey of 2<sup>nd</sup> and 3<sup>rd</sup> year alumni, done by the Outcomes Assessment Committee. A slightly modified version of the survey was also administered for two other groups representing more senior alumni (10<sup>th</sup> and 15<sup>th</sup> year) and employers of our graduates (College and Departmental Advisory committee members). The following is an abbreviated summary of the survey results. A more complete report can be obtained from [gustafson.4@osu.edu](mailto:gustafson.4@osu.edu). The following three figures summarize, for all three groups, the Importance Ratings (Figure 3), Preparation Ratings (Figure 4), and Gap/Difference between the Importance and

Preparation (Figure 5). This is followed by two tables that order the eight competencies, highest to lowest for 2 & 3 Yr alumni, first by importance (Table 4) and second by gap between Importance and Preparation (Table 5).

A brief summary of observations about the survey data include:

- Advisory Committee and 10 & 15 Yr Alumni members on average rated all Competencies more important than the 2 & 3 Yr Alumni, while average rating of level for preparation showed very little difference across the three groups (Figures 3 & 4). It is noted that average importance rating across all eight competencies correlates highly to reported rates for travel abroad for professional reasons (91% for Advisory, 63% for 10 & 15<sup>th</sup>, and 26% for 2 & 3 Yr).
- Gap between Importance and Preparation was consistently larger for Advisory Committee members (Mean 1.35) and 10 & 15 Yr Alumni (Mean 1.19) versus 2 & 3 Yr Alumni (Mean 0.53).
- Sequence of **importance** ratings (Table 3) shows some difference of opinion between groups, however
  - All three rated highly both:
    - Understanding of the international aspects of engineering topics such as supply chain management, intellectual property, liability and risk, market and product design considerations and business practices
    - Proficiency in working in an ethnically and culturally diverse team
  - Two of the three groups rated the following highly
    - Understanding of the connectedness of the world and the workings of the global economy
  - The lowest two for all three were:
    - Proficiency in a foreign language
    - Familiarity with the history, government, and economic system of several target countries
- Sequence for gap or **difference (Importance-Preparation)** ratings (Table 4) also shows some similarities and some differences,
  - All three groups showed the largest gap, by some margin, for:
    - Understanding of the international aspects of engineering topics such as supply chain management, intellectual property, liability and risk, market and product design considerations and business practices
  - Across groups the next largest gaps would be:
    - Understanding of the connectedness of the world and the workings of the global economy, and
    - Ability to communicate across cultural and linguistic boundaries.
  - The recent alumni noted less gap/difference versus the other two groups for “Ability to deal with ethical issues arising from cultural or national differences”. (Note: Although not proof of cause and effect, the 2 & 3 Yr Alumni group would be the first alumni group to have experienced the Ethics requirement in General Education.)



Figure 3. Rating of Importance of Global Competencies by Recent Graduates

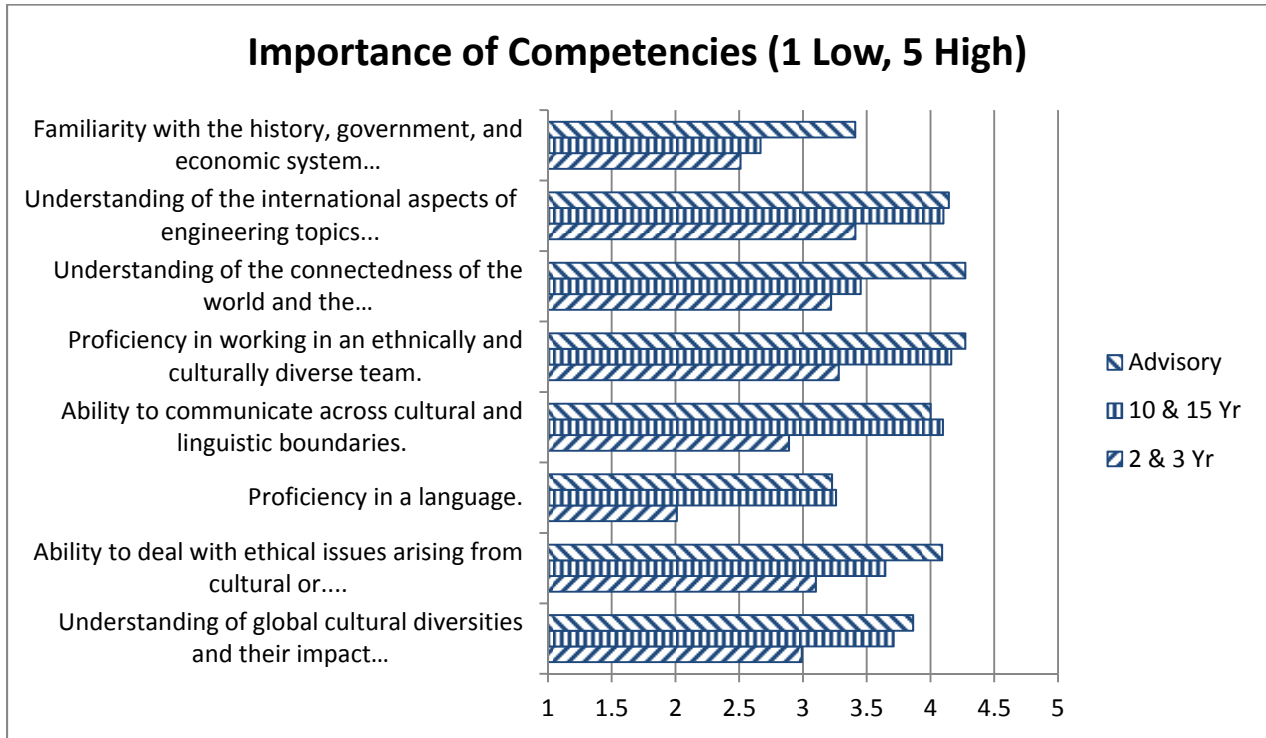


Figure 4. Ratings of Preparation of Recent Graduates for Global Competencies

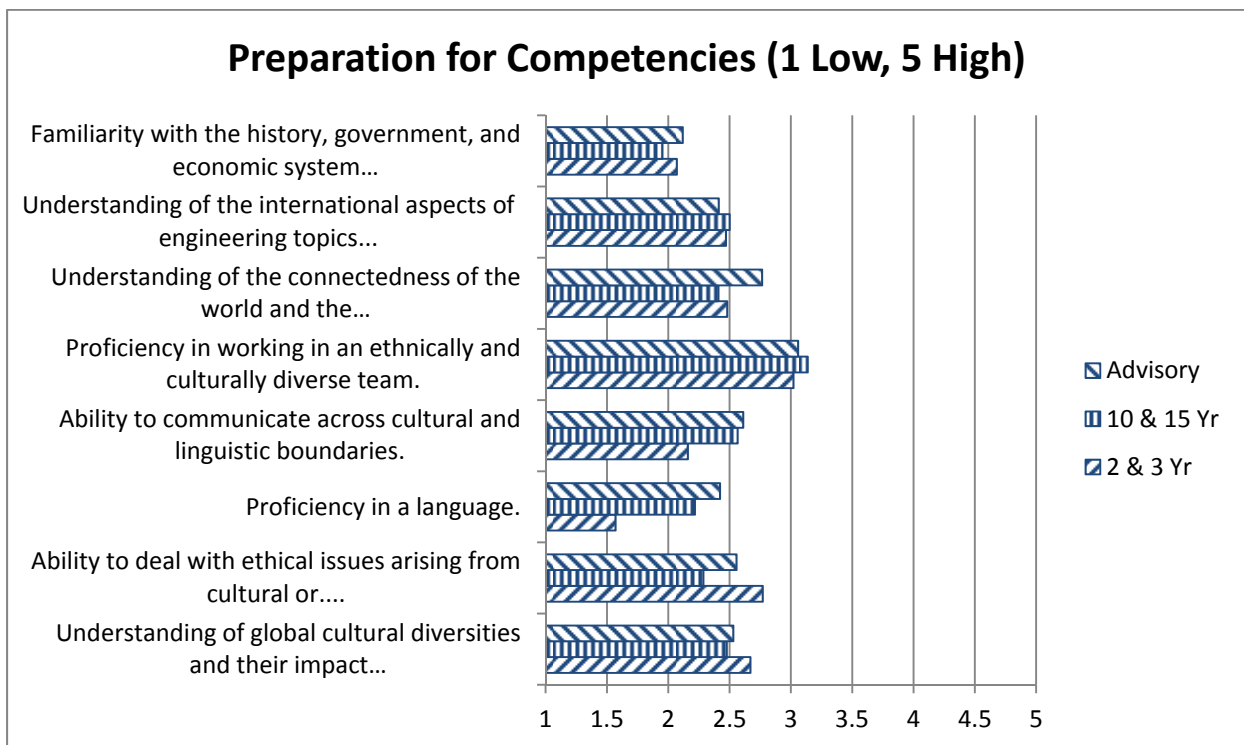
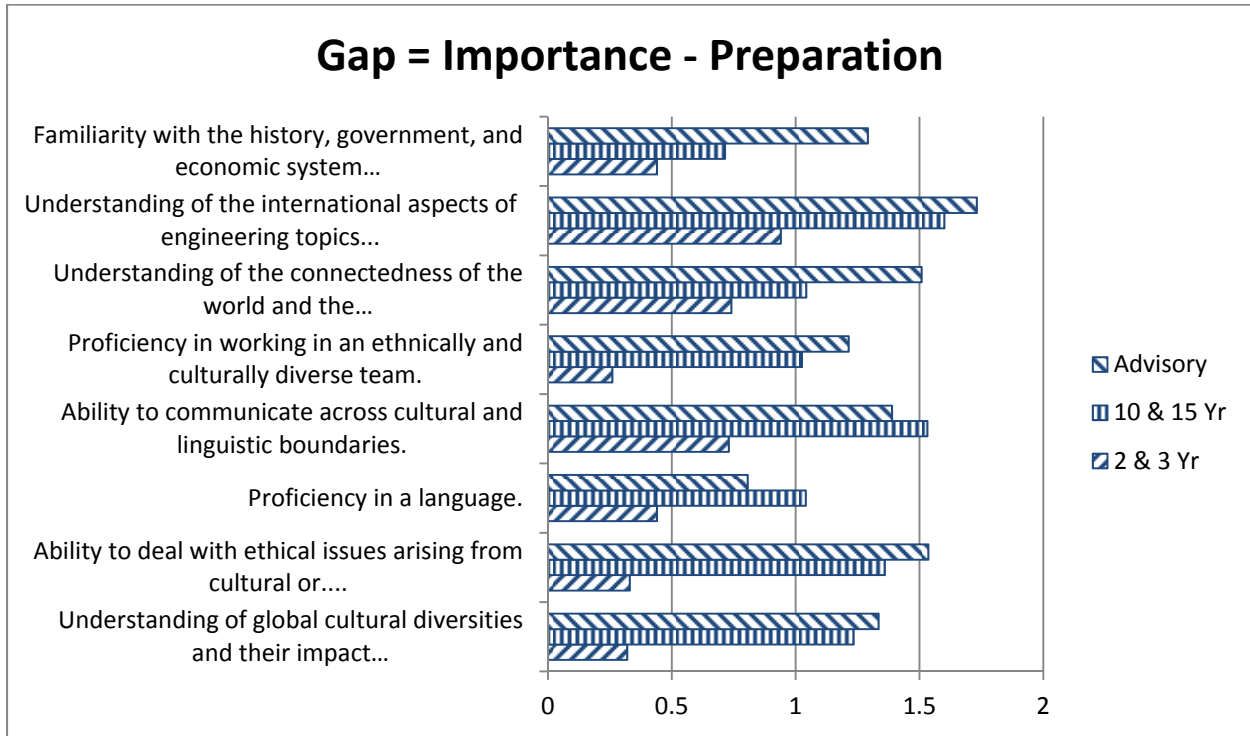


Figure 5. Difference or Gap between Importance and Preparation for Global Competencies



Tables 4 and 5 allow quick comparison of importance ranking across all three groups (Table 4) and the gap/ difference between importance and preparation for all three groups (Table 5). The Tables are in order by the highest to lowest Importance/Gap as determined by the 2 & 3<sup>rd</sup> year alumni group.

Table 4. Comparison of **Importance** Ranking Across Survey Groups

|  | 2 & 3 Yr Alumni | 10 & 15 Yr Alumni | Advisory Comm |
|--|-----------------|-------------------|---------------|
| Understanding of the international aspects of engineering topics such as supply chain management, intellectual property, liability and risk, market and product design considerations and business practices | 1               | 2                 | 3             |
| Proficiency in working in an ethnically and culturally diverse team  | 2               | 1                 | 2             |
| Understanding of the connectedness of the world and the workings of the global economy   | 3               | 6                 | 1             |
| Ability to deal with ethical issues arising from cultural or national differences  | 4               | 5                 | 4             |
| Understanding of global cultural diversities and their impact on engineering decisions   | 5               | 4                 | 6             |
| Ability to communicate across cultural and linguistic boundaries   | 6               | 3                 | 5             |
| Familiarity with the history, government, and economic system of several target countries  | 7               | 8                 | 7             |

|                                   |   |   |   |
|-----------------------------------|---|---|---|
| Proficiency in a foreign language | 8 | 7 | 8 |
|-----------------------------------|---|---|---|

Table 5. Comparison of **Gap/Difference** Ranking Across Survey Groups (1 = Largest Gap)

|  | 2 & 3 Yr Alumni | 10 & 15 Yr Alumni | Advisory Comm |
|--|-----------------|-------------------|---------------|
| Understanding of the international aspects of engineering topics such as supply chain management, intellectual property, liability and risk, market and product design considerations and business practices | 1               | 1                 | 1             |
| Understanding of the connectedness of the world and the workings of the global economy   | 2               | 5                 | 3             |
| Ability to communicate across cultural and linguistic boundaries   | 3               | 2                 | 4             |
| Familiarity with the history, government, and economic system of several target countries  | 4               | 8                 | 6             |
| Proficiency in a foreign language  | 5               | 6                 | 8             |
| Ability to deal with ethical issues arising from cultural or national differences  | 6               | 3                 | 2             |
| Understanding of global cultural diversities and their impact on engineering decisions   | 7               | 4                 | 5             |
| Proficiency in working in an ethnically and culturally diverse team  | 8               | 7                 | 7             |

Each survey had a series of individual questions to gather additional input and some demographic type information about employers and their programs. The following two sub-sections summarize the data collected in each survey. The summary statements are followed by sections that give a more detailed discussion of each of the questions.

Summary Statements 2 & 3 Yr Alumni:

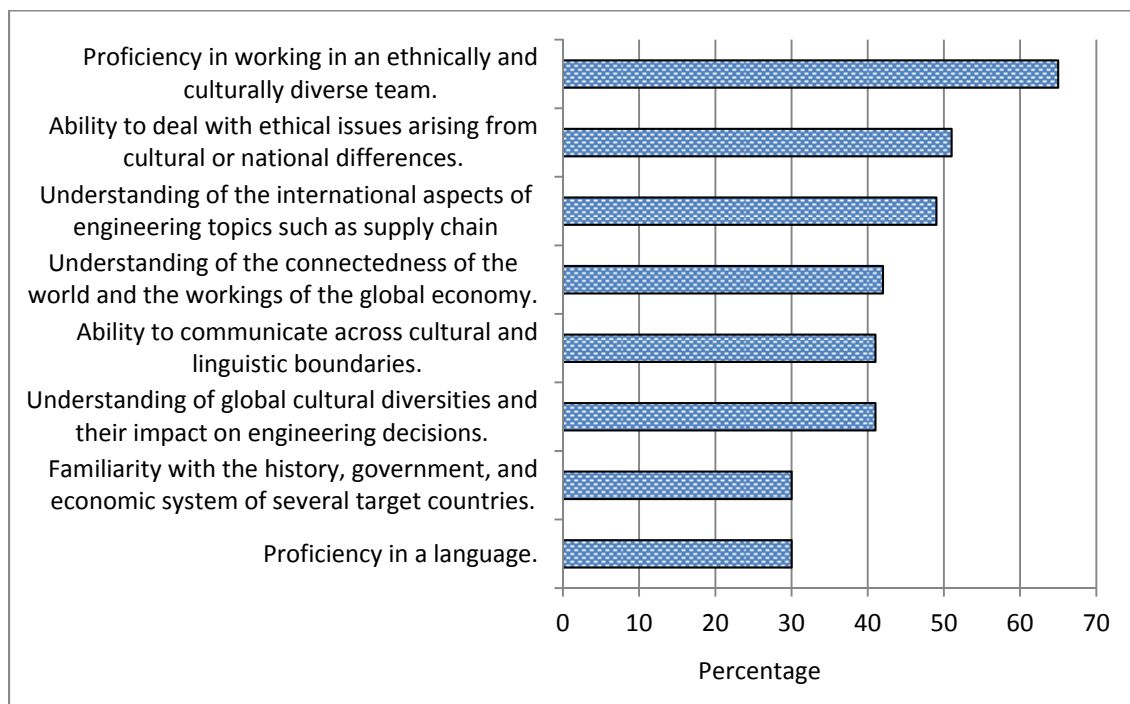
- Project teams (both within classes and from extra-curricular activities?) were by far the most frequently mentioned item as impacting global competency (27% of all responses).
- When combined with Design course responses, it is clear that the experiential learning components of the engineering curriculum play a major role in global competency.
- The formal curriculum, general education and specific major and minor courses, also plays a significant role in attainment of global competency.
- It is also worthy to note that student organizations and the diverse nature of our student body, faculty and staff were mentioned with significant frequency.
- Expanding study abroad and international internships was recommended by 27% of the respondents. Advantages in both educational experience and competitiveness for employment were noted along with the need to make engineering students more aware of the opportunities.
- Use of language courses were highlighted positively by 23% of respondents and negatively by 2.5%. Challenges in curriculum space and choice of language were noted, while benefits for cultural understanding were frequent.

- A much higher percentage of students traveled abroad for vacation (36.7%) than for study or work abroad (7.7%) or other academic reasons (5.3%).
- A high percentage of the employers of the graduates (77%) do business outside the US; 39% of graduates work on international projects, 26% have already traveled abroad for professional reasons and a higher percent expect to in the next five years.
- A higher percentage of women than men
  - a) participated in travel as a student,
  - b) travel for and expect to travel for professional reasons, and
  - c) perhaps as a correlation are more likely to work for firms doing work internationally and specifically assigned to international projects.
- Although minimal details were supplied, recent alumni showed a very high level of interest in a “global curriculum option” in the engineering curriculum. From the recent alumni group 39% indicated interest and 17% that they might be interested.

Combined Summary Statements for 10 & 15 Yr Alumni and Advisory Committee:

- Reported employer support programs for gaining competency varied for the various competencies (See Figure 6). It was most frequent for “Proficiency in working in an ethnically and culturally diverse team” and least frequent for “Proficiency in a second language”.

Figure 6. Employers with a program to assist with competencies (%) (Combined 10 & 15 Yr Alumni and Advisory Committees).



- Employers would value students having “completed an engineering study abroad” over “having fluency in another language”, “completing a non-technical study abroad”, or “having a cultural awareness course or experience”.

**Report Excerpts From  
College of Engineering  
International Task Force  
Final Report  
January 2009  
(Developed by R. J. Gustafson)**

In August 2008, Interim Dean Greg Washington charged the College of Engineering International Task Force with assessment of the status of international education in engineering and recommendations for strategic actions to be taken up by the College. His request included a focus on providing significant international experiences for both undergraduate and graduate students across the College. This report is the result of one quarter's efforts to inform the Dean and his leadership team about the College's existing international studies programs, faculty interests, barriers and challenges, and opportunities in the context of national and local globalization objectives.

p. 3 "A glance around the country reveals that top engineering programs as part of their globalization objectives are adapting their curricula to include studies abroad for credit along with sponsored co-ops and internships that address the call of National Academy of Engineers and other professional leaders."

Models – Georgia Tech, Purdue, others

p. 8 "The College of Engineering has arguably the University's most international faculty body, with research projects and academic interests stretching across the globe."

p. 9 "Barriers to international experiences for OSU CoE students are similar to those faced by other American engineering students and institutions. The Global Excellence in Engineering Study has provided a summary of familiar roadblocks to the education of global engineers:

- 1) Preparation for global practice has not been viewed as central to an engineer's education.
- 2) International mobility involves expensive travel, visas, cultural and language barriers, curriculum structures, and national funding restrictions.
- 3) Globalization and collaboration need to go hand-in hand calling for substantial partnerships and long-term commitments.
- 4) there is a lack of knowledge and proven theories about effective practices for instilling global competence that has hindered curriculum development."

p. 11 Table 2

"The opportunity to collaborate with multinational industrial partners currently working with the College of Engineering through sponsored programs or industry funding offers the greatest undeveloped potential for globalizing education in the College."

p. 12 "The College has the opportunity to provide incentives to faculty and departments that seek eminence with new initiatives and collaborations abroad. Successful programs must grow from within and will likely develop from existing foundations and the interests of faculty."

## Appendix 1

“Initiating and expanding robust studies abroad, exchanges, internships and co-operative employment programs, service-learning, collaborative research projects, dual degrees, language integration, and design capstones are addressed in Task Force recommendations.”

### p. 14 Recommendations

College of Engineering continue the efforts of this committee to develop new opportunities and strengthen existing programs, including long-term and short-term abroad studies options, internships, and exchanges without delay.

Surveying College of Engineering students to understand their international experiences, professional goals, and language proficiency.

The Performance Plan focus on teaching the characteristics of a global engineer should permeate the curriculum.

We recommend that steps be taken in the College to implement each of the four models and initiate or expand on several existing programs simultaneously.

1. *Long-Term Abroad Studies—*
2. *Internships and Co-ops--*
3. *Service-Learning Programs—*
4. *Short-Term Abroad Studies—*

The Task Force recommends that the College establish strategic initiatives to evaluate and reward faculty involvement in successful global studies educational programs.

The Task Force recommends strategic organization within the College to best facilitate the demands for services and communication that would result from introducing new study abroad opportunities.



## Global Option: A Curricular Enhancement and its Plan for Implementation

The Global Option has been endorsed for implementation by the Provost's Council (10-21-2011). It calls for the creation of a defined set of educational activities and experiences that together yield an enhanced learning opportunity for undergraduate students interested in acquiring a documented focus on international issues relating to their program and discipline. The Global Option plan presented here only defines the frame conditions. An academic program that elects to implement such a Global Option will need to define the specific courses, activities, and experiences that are relevant to the discipline. Both the frame conditions as well as any program-specific Global Option plans will follow a standard review process with ultimate CAA approval.

Ideally, the Global Option will be a notation on the student's diploma. If this is not feasible, it should be recorded on the transcript. It is essential that students will have a certified documentation that they completed this special effort.

The standards set for any component criteria in a Global Option packet will be significantly above the level of attainment of a major. E.g., the language skills of a foreign language major in the Global Option program will be set measurably higher than for a non-Global Option major. A major in the International Studies Program electing to complete a Global Option plan will take more courses with essential international focus than a non-Global Option major. No discipline offers an automatic advantage for Global Option and all Global Option graduates will have spent considerable extra effort on the international aspects, with the diploma notation guaranteeing an earned achievement.

The Global Option is structured on the model of the Honors curriculum, as a challenge and an enrichment of the standard curriculum, adapted in content to each major that elects to offer this option. Different from the Honors concept, selection for this option is based on commitment and completion of various learning and experiential modes, rather than on academic achievement alone. In contrast to the Honors curriculum, the cost to academic programs is minimal, since no special courses with limited enrollment are mandated.

The following description provides an overview of the framework.

|              |   |
|--------------|---|
| <b>Topic</b> | Establishing a curriculum enhancement program that permits students to acquire a documented international expertise integrated into any major.  |
| <b>Goal</b>  | Providing an enrichment program resulting in an institutional certificate for students who wish to acquire a meaningful international experience and global perspective as part of their major without adding time to graduation. |
| <b>Who</b>   | Students in participating curricula, committing as soon as they declare a major, and who are in continued good standing with a min. GPA of 2.5.   |

|                            |  |
|----------------------------|--|
| <b>How</b>                 | Committing by contract to a career-long challenge curriculum related to international themes and global dimensions (see “Components” for details).   |
| <b>Result</b>              | Satisfactory completion of the contract results in a certificate or diploma upon graduation. Non-completion of the contract carries no penalty and will still leave the student with the special experience and credit of the parts completed.   |
| <b>Components</b>          | <p>Courses, international experiences, language, and reflection in six areas constituting a special achievement beyond standard requirements for a major:</p> <p>A • 1 Freshmen/Sophomore year 4-week Early Immersion Education Abroad program (3 cr)      OR<br/>         • 1 discipline-related international experience (3+ cr)</p> <p>B • 2 courses with strong international focus, preferably within major (6 cr)</p> <p>C Advanced proficiency in one language other than English or native language, at level “intermediate high” (ACTFL scale). Foreign language majors will attain “advanced low” (both measures lower for LCTLs) (6+ cr)</p> <p>D • 1 capstone project in discipline on an international theme (research, internship, service learning) (3+ cr)</p> <p>E • Evaluation of global competencies on a standardized assessment (pre-evaluation when joining GO; post-evaluation before graduation)</p> <p>F • Comprehensive e-portfolio of international activities (documenting a student’s special efforts, accomplishments, attainments and reflections)</p> <p>Programs will set requirements by defining the departmental specifications for each group A to F that constitute special achievement for a given major.</p> |
| <b>Purpose</b>             | <ul style="list-style-type: none"> <li>• Combining major with strong international enhancement</li> <li>• Increasing educational attainment with international experience and global perspectives</li> <li>• Developing a set of global skills<sup>1</sup> to a higher performance level</li> <li>• Preparing for a work environment with transnational and global challenges</li> </ul>   |
| <b>Advising</b>            | <ul style="list-style-type: none"> <li>• Combining academic achievement with active experience and application</li> <li>• Part of UAFYE orientation (possibly also a recruiting tool)</li> <li>• General advising in conjunction with GEC</li> <li>• Colleges/departments provide curriculum guides and major advising</li> <li>• On-line advising, consultation, and advisor contact</li> <li>• Contract can be established up to beginning of Junior standing</li> <li>• Contract can always be abandoned without penalty</li> </ul>   |
| <b>Academic Unit Tasks</b> | <ul style="list-style-type: none"> <li>• Develops courses that satisfy the Global Option program by focusing on one or more of the observable and measurable competencies (courses are open to all students meeting course prerequisites)</li> <li>• Develops/identifies discipline-specific international experiences beyond standard expectations (internships, service learning, long-term study abroad programs, oversight of special international research projects, etc.)</li> </ul>  |
| <b>Office of</b>           | <ul style="list-style-type: none"> <li>• Develops Early Immersion Education Abroad Programs and assists academic</li> </ul>  |

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<sup>1</sup> The **five skills** to be developed are following:

- Ability to work effectively in international settings
- Awareness of and adaptability to diverse cultures, perceptions and approaches
- Familiarity with the major currents of global change and the issues they raise
- Capacity for effective communication across cultural and linguistic boundaries
- Ability to comprehend the international dimension of one’s field of study



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|------------------------------------|--|
| <b>International Affairs Tasks</b> | units in creating/identifying discipline-specific experiential opportunities <ul style="list-style-type: none"><li>• Provides global competencies assessment for student awareness and growth</li><li>• Provides language proficiency testing (in collaboration with FLC)</li></ul>  |
| <b>Metrics and Milestones</b>      | <ul style="list-style-type: none"><li>• Development of framework (2010-11) and institutional approval (2011-12)</li><li>• Of 160 programs, 5% with up to 5% students in GO by 2015 = 120 students (add 2-3 programs/year across the three college clusters)</li><li>• 10% of programs with 5% students by 2018 in GO each = 300 students (add 4 programs/year across the 3 college clusters)</li></ul>   |
| <b>Assess</b>                      | <ul style="list-style-type: none"><li>• Input: Numerical goals of participation (units, diversity, students; see above)</li><li>• Output: Number of certificates/diplomas (300/yr by 2018)</li><li>• Outcome and Impact: Increase in global competencies assessment scores compared to cohort (NSEE scores, Freshmen compared to Seniors)</li><li>• Broadened access (representative disciplines, student demographics)</li><li>• Career path of graduates including international work/travel/business (longitudinal measure, in collaboration with Alumni Association)</li></ul> |
| <b>Oversight</b>                   | <ul style="list-style-type: none"><li>• Establishing Global Option for a given curriculum follows standard program approval process from academic unit to college to CAA</li><li>* Delivery of Global Option programs requires oversight by a body operating under CAA charged with approval and monitoring of curriculum delivery</li></ul>   |
| <b>Cost Factors</b>                | <ul style="list-style-type: none"><li>• Pursued separately: developing Early Immersion Education Abroad 4-week programs</li><li>• Academic unit international experiences require advising staff for Education Abroad opportunities plus specific Global Option advising</li><li>• Academic units invest in capacity to teach international courses as needed</li><li>• IT based advising tools to be developed and maintained by shared budget between academic units and OIA.</li></ul>  |
| <b>Roll-out</b>                    | <ul style="list-style-type: none"><li>• Plan developed for test programs for AU13 by Social Work &amp; Public Health</li><li>• Produce UAFYE and OIA promotional materials (mainly IT based)</li><li>• Position alongside Honors &amp; Scholars, but more hands-on, direct experience than purely academic achievement, and less costly for academic units</li></ul>   |
| <b>Next Steps</b>                  | <ul style="list-style-type: none"><li>• Presentation and information sessions by OIA for interested departments</li><li>• June 2012 CAA to review framework and approval and certificate/diploma option</li></ul>  |