College of Engineering Committee on Academic Affairs
Meeting Minutes 8 December 2014

Attendance:
Aero – Carl Hartsfield
AVN – Not present (Seth Young)
BME – Mark Ruegsegger - Chair
CHE – Not present (Jeff Chalmers)
CIV – Frank Croft
CSE – Paul Sivilotti (for Ken Supowit)
ECE – George Valco
ENG PHY – Robert Perry
ENV – Not present (John Lenhart)
FAB – Ann Christy
ISE – Carolyn Sommerich (ASAP Rep)
MSE – Sheikh Akbar
ME – Rob Siston
WLD – Dave Farson
Graduate Student – Not present (Beenish Saba, Ankita Majumder)
Undergraduate Student – Kareem Rasul & Amber Harriger

Non Voting:
Associate Dean for Undergraduate Education – Dave Tomasko
KSA – Not present (Maria Conroy)
Committee Secretary – Ed McCaul
Advisor – Not present (Nikki Strader)

Guests – None

1. The minutes from the 10 November 2014 meeting were approved as corrected.

2. George Valco made a motion that the Surveying and Mapping Minor be approved. Frank Croft seconded the motion. The floor was opened for discussion. (Proposal is attached.)
   2.1. The committee was informed that Subcommittee A reviewed the Surveying and Mapping Minor and sent it back to the department for revision. The requested revisions have been made and the subcommittee is recommending that it be approved.
   2.2. The proposal is requesting an exception to the university’s policy of an 18 hour credit limit for minors as students will need to complete 19 hours to receive the Surveying and Mapping Minor. The reason for the 19 hours is that completion of the minor allows a student to pursue registration as a surveyor.
   2.3. The comment was made that in order to be a county engineer in Ohio an individual must be both a PE and PS.
   2.4. The question was asked as to who will be able to take the minor. The response was that although, in theory, anyone could take this minor in reality the vast majority will be Civil Engineering students. The comment was made that some Agricultural Engineering students will also want to take the minor.
2.5. There being no further discussion a vote was taken: 12 approved, 0 opposed, and 0 abstentions. The motion passed.

3. George Valco informed the committee that Subcommittee A had received the Nuclear Engineering Minor and has sent it back for revision.

4. The chair asked what the status was on the other minors.
   4.1. Ann Christy stated that the Engineering Sciences Minor is ready to be submitted, but that a decision has not yet been made on whether EEIC should submit for review the Technological Studies Minor. Currently the Technological Studies Minor is not being offered as it was not converted to semesters.
   4.2. The status of the Aviation, CIS, and Computational Science Minors is unknown.
   4.3. The committee secretary stated that the Environmental Engineering Minor had been sent to Subcommittee A.
   4.4. George Valco and the committee secretary both stated that they would remind Aviation and CSE that their minors need to be submitted to CCAA.

5. George Valco informed the committee that Subcommittee A had reviewed the draft EEIC department proposal and had given Ann Christy some feedback on it.
   5.1. Ann Christy stated that the plan is to have the proposal submitted to CCAA by the end of the calendar year.
   5.2. The question was asked as to what role the Core Committee will have in the proposal’s approval process. The response was that currently the Core Committee has an ad-hoc role and is just working in an advisory mode.

6. The Course Proposal Subcommittee presented its recommendations to the committee.
   6.1. Carolyn Sommerich made a motion that the new course requests for ENGR 4692.02S, ENGR 5797.17S, ENGR 6892.01, and ME 8603 be approved. Frank Croft seconded the motion. The floor was opened for discussion.
   6.1.1. The committee was informed that ENGR 4692.02S, Engineering Service Learning Ghana Preparation, and ENGR 5797.17S, Engineering Service Learning Ghana In Country, are related service learning courses for a service learning project in Ghana. 4692.02S is the preparation course and 5797.17S is the in country portion.
   6.1.2. The committee was informed that ENGR 6892.01, Studies in Engineering for In-Service Teachers, is a course for teachers who wish to learn more about engineering and learn about projects that can be incorporated into their classes.
   6.1.2.1. The question was asked as to whether our graduate students could take this course. The response was yes if they get permission of the instructor, but if they do there is no guarantee that their program will count it.
   6.1.3. The committee was informed that ME 8603, Irreversible Thermodynamics and Transport of Charge, Heat, and Spin, is a high level graduate course that will mainly be taken by ME graduate students.
   6.1.4. There being no further discussion a vote was taken: 12 approved, 0 opposed, and 0 abstentions. The motion passed.
6.2. Carolyn Sommerich made a motion that the course change requests for ENGR 5901.01, ENGR 5902.01, and ECE 3080 be approved. Frank Croft seconded the motion. The floor was opened for discussion.

6.2.1. The committee was informed that ENGR 5901.01, Multidisciplinary Engineering Capstone Design Project I, and ENGR 5902.01, Multidisciplinary Engineering Capstone Design Project II, are becoming a two semester, six credit hour sequence and are going from 4000 level courses to 5000 level courses. The reason for the increase in level is so that graduate students who need capstone experience can easily take the courses.

6.2.1.1. The comment was made that, although they did not have any issue with the increase in credit hours or 5901.01 going from a seven week course to a 14 week course, they had issues with the increase in level. ME decreased the level of their capstone courses so that graduate students could not count the courses toward their degree and BS/MS students could not double count the courses.

6.2.1.2. The comment was made that graduate students can take 4000 level courses, but that they cannot count a 4000 level course toward a graduate degree.

6.2.1.3. The comment was made that perhaps the level change was made so that MBA students would be more likely to take the courses and provide knowledge on the business portion of the project.

6.2.1.4. A friendly amendment was made that 5901.01 and 5902.01 be withdrawn from the motion until more information could be obtained on the reason for the increase in the level of the course. This amendment was accepted.

6.2.2. The committee was informed that the only change to ECE 3080, Ethics and Professionalism was the addition of the words “social justice” to the course description. Social justice is already one of the topics of the course.

6.2.3. There being no further discussion a vote was taken: 12 approved, 0 opposed, and 0 abstentions. The amended motion passed.

7. Dave Farson made a motion that the changes to the CCAA Handbook be approved. Robert Perry seconded the motion. The floor was opened for discussion.

7.1. The committee was informed that the handbook has been updated to reflect policies changes in addition to some minor editorial changes.

7.2. The comment was made that there was a typographical error in the university’s minor policy under “Overlap with the GE”. The correction of this error was accepted as a friendly amendment.

7.3. The question was asked as to whether it was necessary for us to include university policies in the handbook. The response was that it is nice for selected ones to be included so that we can be sure we are following them.

7.4. There being no further discussion a vote was taken: 12 approved, 0 opposed, and 0 abstentions. The motion with the amendment passed.

8. Dave Farson made a motion that the Grand Challenges Proposal be approved. Robert Perry seconded the motion. The floor was opened for discussion. (The proposal without all of the appendices is attached.) The floor was opened for discussion.
8.1. The committee was informed that is in response to a National Academy of Engineering effort and was initiated by three of our students. Any student who completes the program will get “NAE Grand Challenge Scholar” on their transcript. The proposal has been revised based on input from Subcommittee B to include listing the prerequisites for all of the courses in the program. One course BUSFIN 4215 will be deleted from the list as the string of prerequisites for the course is too long.

8.2. The comment was made that ECE 3020 also has a long string of prerequisites, but was not dropped from the list of courses. The response was that the idea is to include courses in various Engineering majors that students will needed to take for their major and allow them to double count those courses.

8.3. The question was asked as to what courses students will be required to take to complete this program. The response was that there are no required courses as such, but students must participate in each of the five components and have in-depth immersion in another two, medium level engagement in two others and minimum engagement in the fifth.

8.4. The question was asked as to who will be overseeing the program. The response was that it may be the Honors Committee, but it would be better if each department had a contact specifically for this program.

8.5. The committee was informed that the program does not meet the requirements to be an honors program and is thus open to more students.

8.6. The question was asked as to who will certify a student has completed the program. The response was that the college will.

8.7. The comment was made that the third sentence in part IV.1) is missing a verb. The committee was informed that this would be corrected.

8.8. The question was asked as to how the list of courses will be maintained. The response was that the student leadership team will review the course list every few years and submit a revised list for approval.

8.9. George Valco commented that ECE 3020 should really be ECE 3040 and that the prerequisites listed for it are incorrect. The committee was informed that this would be corrected.

8.10. The question was asked as to whether the spreadsheet showing all of the courses is part of the proposal. The response was that it would be included in the proposal.

8.11. Dave Tomasko stated that the proposal will need a letter of support from Business before it is sent to CAA.

8.12. Ann Christy asked if it was too late to add courses to the list as there are some FABE courses which would fit some of the categories. The response was that those courses would be welcomed as well as corrections or additions from any other department.

8.13. The question was asked as to how far the prerequisite chain should go as some of the ECE courses that are listed have ENGR 1181 and Math 1151 as prerequisites. The response was that courses that are required of all engineering students should will not be included in the spreadsheet as only engineering students will be in the program.

8.14. The question was asked as to why all of the appendices were not included today. The response was that the appendices make the proposal about 40 pages long and that most of them are letters of support.
8.15. Dave Tomasko stated that the proposal would be submitted to the national steering committee for its approval before it goes to CAA.

8.16. There being no further discussion a vote was taken: 12 approved, 0 opposed, and 0 abstentions. The motion, with the contingency that all of the errors noted in the discussion be corrected prior to the proposal being sent to CAA, passed.

9. Dave Farson made a motion that the proposed changes to the MGEL Program be approved. Carl Hartsfield seconded the motion. The floor was opened for discussion.

9.1. The committee was informed that currently the track a student takes is shown on their transcript. Consequently, if the program wants to add a new track it must get approval from this committee and the graduate school. No other graduate program in the college has this requirement as the track their student takes does not show up on their transcript. The proposal would eliminate tracks being shown on transcripts and, thus, allow the program to more easily create new tracks. (Proposal is attached.)

9.2. There being no further discussion a vote was taken: 12 approved, 0 opposed, and 0 abstentions. The motion passed.

10. Dave Tomasko updated the committee on various academic issues.

10.1. All members present were given a handout asking each department to respond to questions concerning what new academic programs, if any, the college should initiate. Members were asked to get answers to the questions from their department and send them to Ed McCaul. (Handout is attached.)

10.2. The committee was informed that there will be an E-Learning session from 12:00-1:30 this Friday in Scott 100. Everyone was invited to attend the session. The committee was also informed that a report on the college’s E-Learning plans will be submitted to the provost the following week.

11. The meeting was adjourned at 2:35.
Date: November 24, 2014
To: CCAA
Re: Surveying and Mapping Minor

The Department of Civil, Environmental, and Geodetic Engineering currently offers the Surveying and Mapping Minor, which is designed for students interested in pursuing a career in professional land surveying. Completion of the Surveying & Mapping Minor, in combination with the BS-Civil Engineering degree, will enable students to sit for the Fundamentals of Survey exam in the State of Ohio and pursue licensure as a professional surveyor. This minor and its requirements has been reviewed and approved by the State Board of Registration for Professional Engineers and Surveyors.

Given the nature and purpose of the minor, and its oversight by the State Board, the Department of Civil, Environmental, and Geodetic Engineering would like to request that the following exception be granted for the Surveying and Mapping Minor:

1. **The Surveying and Mapping minor shall require nineteen (19) credit hours.** As this minor is reviewed and approved by the State Board, removal of any of the courses listed on the minor would fall short of either the categorical requirements of the State Board, or the minimum sixteen (16) credit hours required by the State Board.

For the reasons stated above, we respectfully request that this exception be made, in order to allow our students to continue to complete this minor, and to sit for the Fundamentals of Survey exam in the State of Ohio and pursue licensure as a professional surveyors. Feel free to contact me if there is any additional information required. Thank you for your time and consideration in this matter.

Sincerely,

[Signature]

Dorota A. Grejnor-Brzosinska
Professor and Chair
College of Engineering Department of Civil, Environmental and Geodetic Engineering
Surveying & Mapping Minor (Semester Requirements)

Students interested in pursuing a career in professional land surveying should consider completing the Surveying & Mapping Minor through the Department of Civil, Environmental, and Geodetic Engineering. Completion of the Surveying & Mapping Minor, in combination with the BS-Civil Engineering degree, will enable students to sit for the Fundamentals of Survey exam in the State of Ohio and pursue licensure as a professional surveyor.

The following guidelines are intended to assist students who will begin the Surveying & Mapping minor courses Autumn 2014 or later.

A. Prerequisites for Survey & Mapping Minor *Must be completed prior to beginning the minor program:  
CivilEn 2410 Intro to Geomatics Eng

B. Requirements of Minor:

1. Credit hour minimum requirement  
   Semester = 19 credit hours

2. Required courses:
   (Semester Course)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Term(s) Offered</th>
</tr>
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<tbody>
<tr>
<td>CivilEn 2090</td>
<td>Professional Aspects of Civil and Environmental Engineering</td>
<td>AU, SP</td>
</tr>
<tr>
<td>CivilEn 5410</td>
<td>Engineering Surveying</td>
<td>AU</td>
</tr>
<tr>
<td>CivilEn 5411</td>
<td>Legal Aspects of Surveying</td>
<td>AU</td>
</tr>
<tr>
<td>CivilEn 5412</td>
<td>Land Boundary and Development Principles³</td>
<td>SP</td>
</tr>
<tr>
<td>CivilEn 5441</td>
<td>Intro to GPS: Theory and Application</td>
<td>SP</td>
</tr>
<tr>
<td>CivilEn 5461</td>
<td>Geospatial Numerical Analysis</td>
<td>AU</td>
</tr>
</tbody>
</table>

Survey & Mapping Minor Recommended Sequence of Classes

**AUTUMN SEMESTER**      **SPRING SEMESTER**
CivilEn 2410             CivilEn 2090

**AUTUMN SEMESTER**      **SPRING SEMESTER**
CivilEn 5410             CivilEn 5412
CivilEn 5411

**AUTUMN SEMESTER**      **SPRING SEMESTER**
CivilEn 5461             CivilEn 5441

NOTES:
1. CivilEn 2410 must be completed prior to beginning the minor program.
2. Civil Engineering students may count CivilEn 5410 (3 hr) and CivilEn 5441(3hr) toward BOTH the Surveying and Mapping Minor and Civil Engineering Technical Electives.
3. CivilEn 5412 has a prerequisite of CivilEn 5411.
Surveying and Mapping Minor Form

Undergraduate Minor Program Policy
COLLEGE OF ENGINEERING
Approved by CCAA on 10 November 1999
Revised for semester calendar 10 March 2010
Revised 31 May 2012
Revised 15 November 2012
Revised 14 April 2014

MINOR PROGRAMS AT THE OHIO STATE UNIVERSITY

An undergraduate minor consists of a coherent curricular program designed to allow students to pursue academic interests that go beyond their major. Students pursue minors to complement their major's area of specialization, to better define themselves academically and to employers, to gain credit for classes previously taken that do not count towards a major degree, or merely to pursue other interests. In addition, some academic units require their students to obtain a minor. Students may take any minor in any college provided that they follow the curricular guidelines set by the college or unit that administers the minor.

ACTIONS REQUIRED OF STUDENTS

Minors pursued by students with Majors in the College of Engineering are administered as follows:

1. Approval of many minors is managed entirely through the Degree Audit Reporting System (DARS)
2. Minor Program Forms will only be required if a student's DARS does not certify the courses for the minor as prescribed by the college or unit that administers the minor
   a. Minor Program Forms must be signed by an advisor in the college or unit that administers the minor and by the student's advisor in their Major Program prior to the student being accepted into the Minor program. Copies of this form will be retained by the college or unit that administers the minor and the Major Program.
   b. Students typically file Minor Program Forms with the College of Engineering when they file applications to graduate. Students are advised to check with the college or unit that administers the minor in advance of the deadline for filing applications to graduate
   c. To change a Minor after submitting a Minor Program Form, a student must re-file a new Minor Program Form with all the appropriate signatures.

RULES GOVERNING THE SURVEYING AND MAPPING MINOR

The following rules, per the College of Engineering Minor Policy, apply specifically to this minor:

- Minimum C- for a course to be listed on the minor
- Minimum 2.00 cumulative point-hour ratio required in the minor course work
- Course work graded Pass/Non-Pass cannot count on the minor
- No more than 3 credit hours of course work graded Satisfactory/Unsatisfactory may count toward the minor
THE COLLEGE OF ENGINEERING
Undergraduate Minor Program Form (to be filed as soon as you begin taking minor classes)

Student Name: ____________________________________________________________
Major: ________________________________________________________________
E-Mail Address: __________________________________________________________
Name of Undergraduate Minor: Surveying and Mapping Minor

Surveying and Mapping Undergraduate Minor Program of Study

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Title</th>
<th>Credits</th>
<th>Grade if completed</th>
<th>Term &amp; Year</th>
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<td>4</td>
<td></td>
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</tr>
</tbody>
</table>

Student Signature: ____________________________ Date: ____________________________

Advisor Name (printed): ____________________________ Major Program: CIVILEN

Advisor SIGNATURE: ____________________________ Date: ____________________________

*To change a Minor program after of this form, the student must re-file a new Minor Program Form with all the appropriate signatures*
To: College Committee on Academic Affairs  
From: David Tomasko, Associate Dean  
Date: 9 September, 2014  
Re: Proposal for NAE Grand Challenge Scholars Program in Engineering

The attached proposal is a student-led effort in response to a National Academy of Engineering effort to expose more undergraduate engineering students to the NAE Grand Challenges. The program developed by NAE is called the “Grand Challenge Scholars Program”. See www.grandchallengescholars.org for details (the home page and steering committee list are attached as appendices to this proposal). This is different than the residential co-curricular Scholars Programs at The Ohio State University but we believe that through appropriate communications and referring to this proposal by the acronym GCSP that we can minimize confusion among the two.

A program structure has been proposed by a national steering committee which allows individual institutions to develop educational programs for their students that address five impactful experiences that when completed will better prepare graduating engineers to tackle societal challenges. The proposed approach at Ohio State to fulfill the goals of the Grand Challenges Scholars Program will be to package programs that are already offered together in a synergistic way for students to receive the “NAE Grand Challenge Scholar” designation on their transcript. These components include interdisciplinary coursework, undergraduate research, business/entrepreneurship activities, global studies and service learning. There is significant overlap with the Honors contract in the engineering such that honors students pursuing the contract would have a relatively small set of extra requirements to achieve both Honors in Engineering and NAE Grand Challenge Scholar designations.

The effort to create this program has been completely initiated and led by undergraduate honors students Deep Shah, Seth Ringel, and Adam Neu. These young men approached me in spring of 2013 and asked if the College of Engineering was planning to participate in the program. The reply was “we will if you write the proposal!” With minimal assistance on administrative processes from Dr. McCaul and myself, the students developed a program structure and brought it to the administration for feedback. With small adjustments presented the program to the Honors Committee in the College of Engineering and gained their approval on 22 April 2014. Simultaneously, the students presented OSU’s proposal to the national steering committee for their evaluation. The students have handled all the communication with that committee answering their questions and addressing their comments in revising the proposal. The proposal as presented has been approved by the national steering committee (email attached). Although approved at the national level, it is still open to feedback and revision by OSU committees. The students and I will communicate changes back to the steering committee as needed. I hereby submit the attached proposal for your review and approval and a recommendation to forward it to the Council on Academic Affairs for review.
Proposal for
NAE Grand Challenge Scholars® Program in Engineering

The Ohio State University

College of Engineering
2070 Neil Avenue
Columbus, OH 43210

David B. Williams, Dean
David Tomasko, Associate Dean, Undergraduate Education and Student Services
I. VISION

The National Academy of Engineering (NAE) released, in 2008, a list of fourteen “Grand Challenges” for engineering in the 21st century in order to achieve a sustainable, economically robust, and politically stable future for generations to come. These challenges range from the most basic of human needs to the extraordinary [http://www.engineeringchallenges.org/]. The fourteen Grand Challenges are listed thematically below:

Energy & Environment
- Make solar energy economical
- Provide energy from fusion
- Develop methods for carbon sequestration
- Manage the nitrogen cycle
- Provide access to clean water

Health
- Advance health informatics
- Engineer better medicines

Security
- Prevent nuclear terror
- Secure cyberspace
- Restore urban infrastructure

Learning & Computation
- Reverse engineer the brain
- Enhance virtual reality
- Advance personalized learning
- Engineer the tools of scientific discovery

The goal of the NAE Grand Challenge Scholars Program is to prepare young engineers to confront these challenges with a multidisciplinary, socially aware, and entrepreneurial background. The Grand Challenge Scholars Program (GCSP) will increase the awareness of the next generation of engineers in the issues facing the world today through a broadened curriculum and diverse extracurricular components. Students successfully completing the program will be recognized by the National Academy of Engineering as Grand Challenge Scholars and we are requesting that they receive the transcript designation “NAE Grand Challenge Scholar”.

II. Administrative Structure

Responsibilities of the GCSP Steering Committee will be incorporated into the existing Engineering Honors Committee. The Committee is comprised of faculty members from each engineering department along with the Associate Dean for Undergraduate Education and Student Services, who will also act as the GCSP Director. The committee meets monthly and members of the Committee will be reappointed each year. For the GCSP program, the responsibilities of the committee include the selection of students, the tracking of their progress with the GC Mentors, approving GC portfolios, and compiling and conveying the accomplishments of GC Scholars to the Director.

GC Mentors will be appointed through each department that comprises the Honors and GCSP Steering Committee. Students may choose to use these appointed officials as their mentors, or they have the choice of finding their own from the university faculty.

The GCSP Director at the Ohio State University will be responsible for communication between the national and institutional levels of the GCSP. This includes relaying information regarding GCSP graduates to the National Steering Committee and maintaining contact with the GCSP electronic community. The Director must also prepare the annual report of the programmatic GCSP accomplishments.

Students may appeal to the GCSP Steering Committee for the acceptance of certain coursework and extracurricular activities to fulfill their GC requirements.

III. Selection of Students

i. Student Marketing
The GCS Program will be promoted at Ohio State in various ways. Incoming freshman are required to take an engineering seminar class to help familiarize them with the university, thus incoming freshmen will be made aware of the GCSP. To further increase awareness and interest in the program, current GC Scholars will advocate for the program in freshman engineering classes as the program progresses.

ii. Academic Requirements
Grand Challenge Scholars must meet the following academic requirements in order to be considered for acceptance into the GCSP.
   a. Be an engineering major at the sophomore or junior level
   b. Have a cumulative GPA of at least a 3.4. Higher consideration will be given to students who also have a major GPA above a 3.4.
   c. Students must maintain the 3.4 cumulative GPA for the duration of the program.
Students already accepted to the program will have one semester to regain their cumulative GPA should it fall below a 3.4.

We note that the academic requirements are the same as those to maintain honors status in the College. However, this program does not meet (and is not intended to meet) the university honors program requirement of at least 6 honors level courses. This requirement may be reconsidered in the future.

iii. Program Acceptance
Prospective GC Scholars will have to complete a GCSP Plan of Study and have it approved by both the GCSP Steering Committee at OSU and the student’s GC Mentor. The Plan of Study will include a description of how the student intends to complete the five components of program, which are listed below. Additionally, students must express connectivity amongst the five program pillars in their Plan of Study that thematically addresses GC themes. The program expects to allow thirty students to join per rank per year. Students will apply by either the end of their sophomore or junior year. If unsuccessful in their first application, students will be given constructive feedback by the GCSP Steering committee and their GC mentor in regards to their original Plan of Study. They will have the opportunity to reapply if they still meet the eligibility requirements.

IV. Detailed Program Requirements

The Grand Challenge Scholars program has five components that students must pursue in order to tackle a Grand Challenge. Students must participate in each of the five pillars, however, their involvement in each component can vary. It is required for students to have in-depth, immersive engagement in at least two of the five components, and medium level engagement in at least two of the five components. The last component may be pursued at a minimum depth. Levels of immersion will be described individually for each component. Overlap amongst the components is valid and recommended to get the most out of the program.

1) Project or research activity engaging a GC theme or challenge: Students must select a project or research activity that addresses one of the fourteen Grand Challenges. OSU has multiple undergraduate research opportunities in which students can participate. Independent study projects that more engineering design related may also be approved for this component but a student may not double count the same project for credit in a required course (such as capstone design) and this program. Departments through the College of Engineering offer credit to students involved in faculty research or independent study. Financial support is also available to students through the College of Engineering, the Undergraduate Research Office, and through some independent faculty research groups. Those who choose to pursue research distinction at OSU have the opportunity to apply for grants from the College of Engineering to fund their work. The College is willing to appropriate some of that money to be geared solely towards students seeking distinction in GCSP. The exact amount will be varied based on how many students pursue the program and if the university is able to privately fund the program through its external resources.
The research component is required to be an in-depth engagement. The student may fulfill this requirement by completing at least six credit semester hours of research relevant to a student’s proposed Grand Challenge (equivalent to 270 hours of research work) with a satisfactory (if taken as a pass/fail course) rating or a grade of C or above. Students can also partake in a full time research based internship/co-op for eight weeks, or a full time eight week REU that addresses one of the fourteen Grand Challenges. Students at Ohio State can graduate with research distinction or honors research distinction which will also fulfill this component.

2) Interdisciplinary curriculum: A multifaceted educational curriculum will allow students to confront the Grand Challenges with a wider breadth of knowledge, helping them to foster novel advancements. An in-depth immersion in interdisciplinary curricula can be accomplished by taking three approved courses. A medium-level immersion can be accomplished by taking two. GC Scholars are required to fulfill at least the medium-depth immersion for this requirement. The chosen courses can fall under any of the GC themes. To allow for maximum scheduling flexibility, there is no requirement for students to concentrate their interdisciplinary coursework on one specific GC theme. Each of the following example courses relates to a theme of the fourteen GCs. Other courses may be counted toward this requirement with the approval of the GCSP Steering Committee.

**Energy & Environment**
- EARTH SCI 2155 - Energy and Environment
- EARTH SCI 2203 - Environmental Geoscience
- EARTH SCI 2204 - Exploring Water Issues
- EARTH SCI 2210 - Energy, Mineral Resources, and Society
- EARTH SCI 2220H - Contemporary Topics in Earth Sciences
- EARTH SCI 3411 - Water Security for the 21st Century
- EARTH SCI 4425 - Energy Resources and Sustainability
- ECE 3020 - Sustainable Energy & Power Systems
- ENR 2155 - Energy and Environment
- ENR 2300 - Society and Natural Resources
- ENR 2500 - Introduction to Environment, Economy, Development, and Sustainability
- PHILOS 2342 - Environmental Ethics

**Health**
- BMI 5710 - Introduction to Biomedical Informatics
- BMI 5720 - Introduction to Imaging Informatics
- BMI 5730 - Introduction to Bioinformatics
- BMI 5740 - Introduction to Research Informatics
- BMI 5750 - Methods in Biomedical Informatics
- BMI 5760 - Public Health Informatics
- FDSCTE 4536 - Food Safety and Public Health
- FABENG 3481 - Introduction to Food Engineering
- FABENG 3510 - Introduction to Biological Engineering
- HTHRH 3400 - Health Promotion and Disease Prevention
- NEUROSC 4100 - Basic and Clinical Foundations of Neurological Disease
3) **Entrepreneurship:** GC Scholars must be able to meld entrepreneurship and innovation to promote technological development in our society. For the case of unspecified immersion experiences, the mentor must review the student’s proposed experience and submit it to the GCSP Steering Committee for final approval. An in-depth immersion in entrepreneurship can be accomplished by any of the following:

- Placing in a business plan competition
- Involvement in the Customer Aligned Startup Training (C.A.S.T.) program - in which students take an existing technology at OSU and drive it through the entire commercialization process with limited guidance from the Technology Commercialization and Knowledge Transfer Office
- Earning a minor in business, marketing, economics, or entrepreneurship
● An immersion experience or research activity spanning at least eight weeks
● Taking at least three semester-long business classes. Examples included below

A medium-depth immersion in entrepreneurship can be accomplished by any of the following:
● Participating in a business plan competition
● Participating in the BOSS Program through the TCO - a competition in which students pitch to a panel of judges, revise their ideas according to judge feedback, and return to pitch again over a period of six weeks
● Significant involvement in one of the many business/entrepreneurship organizations on campus, including, but not limited to: Students Consulting for Nonprofit Organizations (SCNO) and Business Builders Club (BBC) - documentation and approval from the OSU GCSP mentor and director needed
● An immersion experience or research activity lasting less than eight weeks
● Taking two semester-long business classes. Examples included below

A minimum-depth immersion can be accomplished by one of the following options:
● Taking one semester-long business class from the approved list below

The following courses are approved to count toward the entrepreneurship requirement:

**BUSFIN 3290** - Foundations of Entrepreneurial Finance  
**BUSFIN 4215** - Entrepreneurial Finance  
**BUSMHR 2500** - Entrepreneurship  
**BUSMHR 3510.01** - New Venture Creation  
**BUSMHR 3510.02** - Creating the Social Venture  
**BUSMHR 3541** - Global Innovation and Entrepreneurial Leadership  
**BUSMHR 3542** - The Accelerator: Planning the Entrepreneurial Venture  
**BUSMHR 3660** - Innovation Practice  
**BUSMHR 5530** - Topics in Social Entrepreneurship  
**BUSML 3241** - Introduction to Entrepreneurial Marketing  
**BUSML 4240** - New Product Management  
**BUSML 4241** - Entrepreneurial Marketing

Additional courses and activities may be approved by the GCSP Steering Committee.

**4) Global Dimension:** The GCSP incorporates a global learning component to instill an awareness of the international economy and worldwide growth and development. Scholars may pursue this requirement at varying depth through the following options. An in-depth immersion can be fulfilled by any one of the following:
● An international internship or study abroad experience relating to a GC of at least eight weeks
● An internship with significant international focus of at least eight weeks
● A minor in International Studies
Successfully complete OSU Engineering’s Global Option in Engineering Program - the program requires student involvement in study abroad programs, courses that contain international elements, and obtaining proficiency in a foreign culture/language

A medium-depth immersion can be accomplished by any one of the following:
- An international internship or study abroad experience relating to a GC of less than eight weeks
- An internship with significant international focus of less than eight weeks
- Domestic involvement with an internationally focused project and at least one of the approved courses
- International travel with an internationally focused project

A minimum-depth immersion can be accomplished by any one of the following:
- Domestic involvement with an international project
- Shadowing and giving a report on a professional who works internationally focusing on a GC theme
- Participation in the London Honors Study Abroad Program as a 1st-year student
- Taking an approved course, examples are included below

The following is a list of approved courses. Additional courses may be approved by the GCSP Steering Committee.

**COMPSTD 1100(H)** - Intro to the Humanities: Cross-Cultural Perspectives
**COMPSTD 2340** - Introduction to Cultures of Science and Technology
**COMPSTD 3645(H)** - Cultures of Medicine
**COMPSTD 3646** - Cultures, Natures, Technologies
**COMPSTD 4597.01** - Global Studies of Science and Technology
**INTSTDS 2580** - Feast or Famine: The Global Business of Food
**INTSTDS 3850** - Introduction to Globalization
**INTSTDS 4320** - Energy, the Environment, and the Economy
**INTSTDS 4532** - Food Security and Globalization
**INTSTDS 4540** - International Commerce and the World Economy
**INTSTDS 4560(H)** - Cooperation and Conflict in the Global Economy
**INTSTDS 4597.01(H)** - Problems and Policies in the World Population, Food, and Environment

5) **Service Learning**: Grand Challenge Scholars are required to add a service element to their studies. This helps to familiarize scholars with different groups of people, exposing them to new perspectives. The service learning component must relate to at least one of the 14 Grand Challenges. This does not necessarily have to mirror the scholar’s chosen Grand Challenge. There are multiple service learning opportunities through OSU. In-depth immersion would be accomplished by completing any one of the following:
- Two or more years of significant involvement in service oriented groups, such as: Engineers for a Sustainable World, Engineers Without Borders, Engineers for
Community Service, Solar Education and Outreach and other service oriented organizations. Documentation is needed for approval

- Service oriented study-abroad trip or project (three weeks or longer)
- Completion of a two-semester University service learning trip and pre-course
- Completion of a two-semester service learning-based Capstone Design Project

Medium level immersion can be accomplished by one of the following options:

- Two or more service trips through Buck-I-SERV - a program that offers service trips in place of university breaks - or the college as a whole
- Involvement for one semester in a K-12 youth outreach program for the benefit of Columbus area schools, through organizations such as College Mentors, ASEE, and other outlets
- Completion of a one-semester University service learning trip and pre-course

Minimum level immersion can be accomplished by any one of the following:

- One service trip through Buck-I-SERV
- At least 30 hours of volunteer community service

Additional activities may be approved by the GCSP Steering Committee

V. Assessment and Tracking of Scholars

GC Scholars will work with their mentor to devise a Plan of Study to be cleared by the steering committee. Each semester, every GC Scholar must meet with their mentor at least once to give an update of their progress. The student’s Plan of Study will be a dynamic document to account for unforeseen adjustments in the curriculum. The Plan will be finalized in the second to last semester before the student’s graduation. At that point, the document will outline the fulfillment of all the criteria set forth by the GCS Program and a GC Portfolio will be created by the student to thematically combine the components. The Portfolio will include a document relating their activities to a GC theme (or multiple themes), documentation of how the student completed the components, and the student’s Plan of Study.

In order to keep students connected to other GCS alumni, OSU GC Scholars will be recommended to attend the annual NAE Grand Challenges Summit in order to network with their peers, industry leaders, and members of academia. Direct financial assistance for attendance is not available through the university, however, the College of Engineering helps support those with unmet financial need.

Students graduating with GCS distinction will be given a Grand Challenge Scholars Certificate from the National Academy of Engineering and will receive a transcript designation of “NAE Grand Challenge Scholar” upon graduation.
Appendices:
1) Bingo Sheet for Advisors
2) Bingo Sheet for Students
3) Home page from website description of NAE Grand Challenge Scholars Program
4) GCSP National Steering Committee
5) Email from Dr. Jenna Carpenter indicating steering committee approval
6) Grand Challenge MOU sent to President Obama
7) Sample CBE and ECE curricula showing overlap between ENGR Honors Contract and GCSP
## Bingo Sheet for Advisors

<table>
<thead>
<tr>
<th>Depth of Engagement</th>
<th>Research</th>
<th>Interdisciplinary Curriculum</th>
<th>Entrepreneurship</th>
<th>Global Component</th>
<th>Service Learning</th>
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</table>
| **In-Depth Research Component** (2) | - Senior Capstone  
- Equivalent 270 Hours of Research Work  
- Complete ≥ 8 Week GC Focused Research Internship/Co-op  
- Complete ≥ 8 Week GC Focused REU | - Complete ≥ 3 Approved Courses | - Placing in a Business Plan Competition  
- Involvement in the C.A.S.T. Program  
- Complete Minor in Marketing, Economics, or Entrepreneurship  
- Complete ≥ 3 Approved Courses  
- Complete ≥ 8 Week Immersion Experience in Business | - International Internship  
- Internship w/ Int'l Focus  
- Minor in Int'l Studies  
- Complete OSU's GO ENG Program | - 2 Years Involvement in Service Oriented Groups  
- Service-Oriented Study Abroad or Project (> 3 Weeks) |
| **Medium-Depth Components** (2) | | - Complete ≥ 2 Approved Courses | - Participating in a Business Plan Competition  
- Participating in the B.O.S.S. Program  
- Significant Involvement in a Business/Entrepreneurship Organization  
- Complete 2 Approved Courses  
- Complete < 8 Week Immersion Experience in Business | - Short International Internship  
- Short Internship w/ Int'l Focus  
- Int'l Service Project | - 2 or More Buck-I-SERV Trips  
- 1 Semester Involvement in Youth Outreach Program |
| **Minimum-Depth Component** (1) | | | - Complete 1 Approved Course | - Involvement in an Int'l Project  
- Taking an approved course  
- Career Professional Report | - 1 Buck-I-SERV Trip  
- 30 Hours of Volunteer Community Service |
# Bingo Sheet for Students

**Student Name:**

**Engineering Major:**

**GC Focus:**

**GC Faculty Advisor:**

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<th>Research</th>
<th>Interdisciplinary Curriculum</th>
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<th>Global Component</th>
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- AEDEcon 2001 or Econ 2001 or Instructor Permission
- AEDEcon 2001 or Econ 2001 or Instructor Permission
- Econ 2001 or 2002 or equivalent
- Junior or Senior Standing

**Security**

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- CSE 1232,1233, or 2221
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Executive Summary

October 27, 2014

The Master of Global Engineering Leadership Graduate Studies Committee (MGELGSC) decided unanimously to submit a program change eliminating the requirement that the program identify each student’s technical track on their transcript. The committee would like to make this change for the following reasons. This practice is not consistent with other programs in the College of Engineering and from experience in other graduate engineering programs it has not shown to increase the marketability of students and their degree. The MGEL program has found that this requires an extensive and lengthy approval process for adding new technical tracks, which will greatly obstruct program growth and success, as well as the ability to react quickly to market needs. And finally, prospective MGEL students are supposed to be able to create an individualized technical track with approval of the MGELGSC, but this option is not practical with the current approval process.

For questions contact either:

Bob Mick
Director of Professional Programs
Mick.15@osu.edu
614-292-0393

Dr. Avraham Benatar
MGEL Faculty Director
Benatar.1@osu.edu
614-292-1390

Master Global Engineering Leadership Graduate Studies Committee Members

Dr. Avraham Benatar                  Materials Joining Track Coordinator
Dr. Trevor Brown                    John Glenn School of Public Affairs
Dr. Yann Guezenneec                 Automotive Systems Engineering Track Coordinator
Bob Mick                             College of Engineering
Dr. Rajiv Ramnath                   Enterprise Services & Architecture Track Coordinator
Dr. Beth-Anne Schuelke-Leech        John Glenn School of Public Affairs
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   b) MGEL revised proposal page 7, Section II-B Technical Tracks
   c) MGEL proposal, pages 32-33, Appendix C Processes, Section 5c, Individualized Tracks
Proposal

The Master of Global Engineering Leadership Graduate Studies Committee (MGELGSC) decided unanimously to submit a program change eliminating the requirement that the program identify each student’s technical track on their transcript. The committee would like to make this change for the following reasons. This practice is not consistent with other programs in the College of Engineering and from experience in other graduate engineering programs it has not shown to increase the marketability of students and their degree. The MGEL program has found that this requires an extensive and lengthy approval process for adding new technical tracks, which will greatly obstruct program growth and success, as well as the ability to react quickly to market needs. And finally, prospective MGEL students are supposed to be able to create an individualized technical track with approval of the MGELGSC, but this option is not practical with the current approval process.

Background and Rationale

The College of Engineering Master of Global Engineering Leadership (MGEL) degree was approved by the Ohio State Board of Trustees on April 4, 2014. The original proposal includes one sentence in Section II-B: Proposed Curriculum, Technical Tracks stating: “These technical tracks will be identified on the student’s transcript to make them more marketable within their industry or public sector” (see Appendix A). There is no other reference to this in the entire proposal. The MGEL program would like to remove this sentence as shown in Appendix B.

The MGEL program has found this practice is not consistent with other graduate programs in the College of Engineering because specializations are not noted on student transcripts. Experience from other graduate programs in the college has found that this practice is not effective in increasing the marketability of graduates. MGEL students can indicate their specialization on their resume and include the course names and descriptions if desired, which is all that current or potential employers will view. If the employer were to require proof of the technical track, the courses listed on the student’s transcript will clearly and easily identify the technical specialization taken for the degree.

Identifying the technical track on each student’s transcript requires that new technical tracks must be approved by the MGEL Graduate Studies Committee and additionally the College of Engineering Committee on Academic Affairs, Graduate School Curriculum Committee, the Graduate Council, and Council on Academic Affairs. This extensive approval process for new technical tracks is prohibitive to the program growth and success as well as the ability to react quickly to market needs. Any potential new technical track could require an estimated twelve months to receive final approval for offering. While this is occurring, no students can be enrolled in the new track.
The MGEL is a new degree and marketability is very important to the success and growth of the program. A broad range of technical track options is essential to make the degree appealing to the largest amount of prospective engineering students. This is why the MGEL program is already working on adding additional tracks including one in Radar Systems. The courses for this new track could have been ready so that students could have enrolled in them in SP’15 semester. But due to the lengthy approval process currently required for the new track, they will be delayed until at least AU’15. Additional new technical tracks will be delayed and constricted as well.

Prospective MGEL students are supposed to be able to create an individualized technical track with approval of the MGELGSC (see Appendices A and C). In reality this is not possible due to the current required approval process. If a prospective student wishes to create an individualized track, they must receive approval from the MGELGSC and additionally the College of Engineering, Graduate School, and Office of Academic Affairs. The approval process is the same as adding a new technical track which could take many months to complete. This presents a large obstacle for prospective students because it delays their ability to make a decision about enrolling in the degree. Students in this situation will likely give up and decide not to pursue the MGEL. Evidence of this is explained next.

During the first four months of program marketing, the MGEL administration received many inquiries about the degree from prospective engineers. From this group, twenty-four engineers inquired about creating an individualized technical track. They wanted to do this because we either currently do not offer a technical track of interest to them or because an individualized track would better meet their needs. But unfortunately, due to the time involved in receiving approval with the current process, the students have decided not to pursue the MGEL degree.

**Programmatic Changes**

The change will not cause any programmatic changes to the MGEL degree. The first semester students could enroll in the MGEL degree was Autumn 2014. The program enrolled three students and their expected graduation is Spring 2016 semester. They are not aware that technical track identification could be included on their transcript because this information has not been made public, is not available on the program website, or any other place for prospective students. The paperwork and any procedures to make a designation on MGEL student transcripts has not been initiated or submitted with the University Registrar. The MGEL would like to make this change before any students have graduated from the degree program.
APPENDIX A

Current Proposal

All of the technical tracks include global issues such as international materials joining standards, automotive fuel efficiency and governmental requirements, and software development for specific markets. The optional internship also offers opportunity for global experiences. ENGR 6210 Leadership and Team Effectiveness for Engineers addresses the challenges and dynamics of leading multinational teams. ENGR 6230 Technology Strategy & Innovation Management includes analysis of global geographical markets, allocating multinational resources, and forming international collaborative strategies. ENGR 7200 Engineering Ethics and Professionalism has an entire section (Section 13) devoted to global issues.

*Technical Tracks (11-13 hours):* In addition to the required core, each student will choose a technical track to guide his or her choice of in-depth technical elective courses. These technical tracks will be identified on the student’s transcript to make them more marketable within their industry or public sector. Each student will have an advisor within the track who will act as the student’s faculty mentor. Most tracks will be interdisciplinary and will include emerging areas such as automotive systems, energy and sustainability, information systems, advanced materials and systems engineering/project management. Three technical tracks have been approved for the first year of the program (see Figure 1); however, additional tracks will be added in future years. The tracks are made up of technical and multi-disciplinary courses. The technical courses utilize advanced principles and the newest developments together with the skills provided in the core to take trained engineers to a new level of understanding and practice of their profession. Together with the integrative project, the track courses prepare professionals for life-long learning in a changing technological world. (Currently approved tracks are detailed in Appendix B. The process for adding new tracks, evaluating existing tracks and removing existing tracks is given in Appendix C. It will also be possible for students to create individualized tracks under the guidance of their faculty advisors and with the approval of the MGEL Graduate Studies Committee, as discussed in Appendix C.)

![Figure 1: Masters of Global Engineering Leadership: Core and Technical Tracks](image)

A complete list of faculty involved in the teaching of all the above courses can be found in Appendix I. This list includes department, rank as well as email information.
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Figure 1: Masters of Global Engineering Leadership: Core and Technical Tracks

A complete list of faculty involved in the teaching of all the above courses can be found in Appendix I. This list includes department, rank as well as email information.
The proposal comes to the MGEL-GSC it must include letters of support from affected program GSCs as well as from the Department Chair(s) of affected department(s).

The MGEL-GSC will be particularly concerned with the fit of the proposed technical track with the goals of the MGEL degree. It will also pay close attention to integration of the MGEL core curriculum into the track courses and the quality of the integrative project. The MGEL-GSC is also responsible for making sure that all proposed courses in the track will be available via distance (or at least that there are realistic plans and a relatively short time line for making them available by distance). The MGEL GSC will consider proposals for other means of offering classes that take into account the convenience of working professionals, but it is not obliged to approve them. The MGEL GSC will consider the proposal, request clarification if necessary and make a decision as expeditiously as possible.

The proposal should contain, at a minimum, the following information:

- **Rationale.** What is the rationale and value of the proposed new track? What is the market demand for this track (evidence will be required)?
- **Admission Requirements.** Any admission requirements, above and beyond those of the MGEL program and Graduate School should be clearly defined.
- **Structure and Curriculum.** The name and structure of the track should be described, as well as the educational goals and objectives. The content should meet the criteria for the program and fit in the overall context of the program core and track requirements. The content should be interdisciplinary. Content developed with industry input and/or professional collaboration and with demonstrated value to industry is preferred.
- **Delivery.** A discussion of the delivery formats (distance, types of interactions etc.) should be provided.
- **Program Administration and Support.** Describe the administrative support for the program and how the program staff will interact with college MGEL personnel. Also, describe any expected financial requirements and sources of funds.
- **Commitment and Letters of Support.** The willingness to teach and support the classes for a specific period should be indicated, as well as a demonstrated interest in sustained improvement of the content (e.g. area of research or past activity), interest in on-going coordination of content. In addition to letters of support from affected GSC Chairs and Department Chairpersons, letters of support from industry are encouraged.

### c) Individualized Tracks

Students may propose individualized tracks of study in special circumstances. These tracks must be developed in consultation with a faculty advisor and must be focused on technical courses. They should cover the same issues as a proposal for a new track and should have the support of the Graduate Studies Committees of the appropriate
disciplines. The MGEL-GSC will consider the proposal and provide feedback to the student. The MGEL-GSC must approve any individualized track.

6) **MGEL Certificates of Specialization**

Certificates of Specialization may be proposed for completion of certain sequences of courses. Any certificate to be offered in connection with the MGEL degree must be proposed to the MGEL-GSC by the track coordinator. This proposal must include justification for the idea of a certificate for this topic, the courses included in the sequence and the amount of work involved to obtain this certification. If there are any nationally or internationally recognized certifications involved these must be clearly delineated and the way in which this certification program matches the requirements of the national or international bodies explained. Permission from those bodies must also be obtained and included in the proposal. University guidelines should be carefully followed.

7) **Credit for previous course work**

Students may obtain up to three semester hours of credit for class work outside of the MGEL curriculum. An application for such credit must be developed in consultation with the student’s advisor and may substitute course work (core or technical tracks). Careful documentation will be essential. The decision to grant credit or not and the amount of credit granted will be made by the MGEL-GSC upon application of the student.

8) **Course and Track Evaluation**

All courses and tracks must be evaluated on a regular basis. In the early years of the program, Track Coordinators will be responsible for evaluating each class in their track using student evaluations, peer evaluations and interviews with employers and industry representatives. For the first three years of a track’s existence, the Track Coordinator will prepare an annual report describing these efforts, any problems identified, and actions taken to rectify the problems. This report will be delivered to the MGEL Faculty Director.

In addition to the student evaluations (conducted every time the course is offered), each course will be peer reviewed (faculty participating in MGEL program) at least every third year and the Track Coordinator will also conduct an evaluation of the course with employers whose employees have taken it. Track Coordinators will provide reports annually to the MGEL Faculty Director.

The GSC will evaluate every track on a regular schedule starting at the end of the third year of the program’s existence and continuing on a rotating basis. Tracks may be discontinued if evaluations are poor or if student numbers are low. Such discontinuation requires a 2/3 vote
TO: Department chairs

FROM: College Committee on Academic Affairs

RE: Response to New Degree Task Force report and developing education pathways with regional campuses

In the 2013-14 academic year, a small task force studied the potential for our college to offer additional degrees beyond those already offered. That report is attached and we seek departmental feedback.

Further, in recent years the College has been building stronger connections with the OSU regional campuses, and student interest is growing in these programs. To better serve these students, and help us prepare for future growth, CCAA is asking that each department have a discussion on how you are currently involved, and how you would like to be involved in more formal educational pathways with the regional campuses.

Please forward this to the appropriate committee and/or faculty within your department. Several questions are listed below to help guide a discussion with your faculty. At this time, we do not need a detailed response, but rather a general feel of where your department is on the issue.

Thank you for your attention to this matter.

1. What new minors should be created that could lead to new degree programs on the Columbus campus?

2. Which of our current degrees could be offered at one of the regional campuses?

3. How much of your program’s degree could be offered at one of the regional campuses? And, if so, is one of the regional campuses better prepared to do so?

4. What is your department’s position on offering your courses at regional campuses? Do you support the hiring of clinical faculty at the regional campuses to deliver those courses?

5. Would your department be willing to consider appointing a tenure-track faculty member at a regional campus (assuming regional campus assumes all costs)? What are the major challenges to doing so?

6. Which of the three options in the report, if any, for new types of engineering degrees seems most plausible and desirable from the perspective of your department?
TO:  David Tomasko, Associate Dean for Undergraduate Education and Student Services  
FR:  Robert J. Gustafson, Director, Engineering Education Innovation Center  
RE:  Report of Task Group on New Degree Options  

This report will try to summarize some of the information gathered and recommendations for consideration made by the Task Group you assigned in January or 2013 to “Review and recommend new curricular efforts in the area of General Engineering and/or Engineering Technology”. The task group was made up of:

Frank Croft, Associate Chair Civil, Environmental and Geodetic Engineering  
Robert Gustafson, Director, EEIC (Chair)  
Ed McCaul, Assistant Dean, Engineering  
Amy Thaci, Program Director, Engineering Career Services  
David Tomasko, Associate Dean UESS, Engineering  
David Tovey, Associate Dean, Mansfield Campus  

The task group reviewed programs of other universities in the area of general engineering and similar programs, discussed needs and potential options of the regional campus, discussed accreditation issues, and discussed a number of options for actions of the College. I will try to summarize some of the outcomes of this work.

It was a consensus of the group that:

1) The College needs to be more flexible and forward looking in response to developing degree program needs. Meeting these needs can be through a combination of changes in existing degree programs, adding degree options, and in some cases adding minors.
2) The College needs to be responsive to the desire of the regional campuses to be more involved in engineering programs. Departments may increasingly need to collaborate with the regional campuses regarding faculty TIU appointments and course offerings. However, it would not be recommended to have degree program options exclusively for regional campuses.
3) Use of distance education should be considered specifically for courses that may be offered at multiple campuses. Courses may be facilitated from either Columbus or a regional campus in the future, thereby maximizing use of faculty resources.
4) The College should not consider development of engineering technology degrees. Engineering technology education represents a different focus than our engineering degrees. Diversion of resources to such programs would not be prudent.

Furthermore the group would recommend the college further explore development of a new degree option(s) at the college level which could serve the following three functions:

1) Other Professions Track - Facilitate degree completion of individuals who want an engineering education but do not have the intent to become practicing engineers. Examples would be Pre-Medicine,
Pre-Veterinary Medicine, Pre-Dentistry, Pre-Law. This could be done more flexibly than it is within current degree programs.

2) Emerging Areas Track – Facilitate degree completion for cohorts who want to focus on a new or emerging area not within one of our current degree programs. Possible examples would be forensic engineering, engineering education, humanitarian engineering.

3) Multi-disciplinary Track – Facilitate collaboration which makes use of current strengths of the College’s existing programs in new or different combinations of ways not possible within a current single degree program. Possible examples would be manufacturing engineering, energy engineering, acoustical engineering, product design.

Three Engineering Schools with programs that represent these types of programs are:

Purdue University (under School of Engineering Education)
Interdisciplinary Engineering Studies Program
(https://engineering.purdue.edu/ENE/Academics/Undergrad/IDE) - The Interdisciplinary Engineering Program (IDE) is for the student whose interests and abilities lie at the interface between engineering disciplines, or between engineering and other disciplines, and who is unable to accommodate his/her total range of interests and abilities satisfactorily in one of the traditional engineering disciplines.

Multidisciplinary Engineering Program
(https://engineering.purdue.edu/ENE/HomepageFeatures/Academics/Undergrad/MDE) - Provide a nurturing environment, tailored engineering programs, and unique interdisciplinary experiences for undergraduate students attracted to study at the interfaces of traditional disciplines and to prepare graduates to become leaders in a rapidly changing and increasingly multidisciplinary engineering profession.

University of Illinois
General Engineering (under Industrial and Enterprise Systems Engineering) –
(http://provost.illinois.edu/programsofstudy/2012/fall/programs/undergrad/engin/gen_eng in.html) - General Engineers understand how to apply business fundamentals to promote utilization of new technology, engage in entrepreneurship, and succeed in engineering and nonengineering careers. The curriculum emphasizes the integration of engineering and business principles, preparing students to apply both functions to bring a product from invention to market.

Missouri Science and Technology (under Department of Interdisciplinary Engineering)
Interdisciplinary Engineering
(http://enrollment.mst.edu/media/enrollmentmanagement/enrollment/documents/IDE.pdf) – incorporates a broad engineering education with the ability to study in-depth in either two engineering fields, or one engineering and one science field. IDE allows the campus to experiment with new types of technical specialty programs within an already established framework.