



College of Engineering

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Date: 9 December 2014

To: M. Scott Herness
Associate Dean, Graduate School

From: Ed McCaul 
Secretary, College of Engineering Committee on Academy Affairs (CCAA)

Subject: Proposed Change to the Master of Global Engineering Leadership Program

CCAA reviewed and approved the attached proposal to revise the Master of Global Engineering Leadership Program on the 8th of December 2014. I am forwarding it to you so that it can be approved by the Graduate School and then, if needed, passed on to the Council on Academic Affairs. If you have any questions concerning this proposal please let me know.

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.

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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 Guezennec	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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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.

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.)

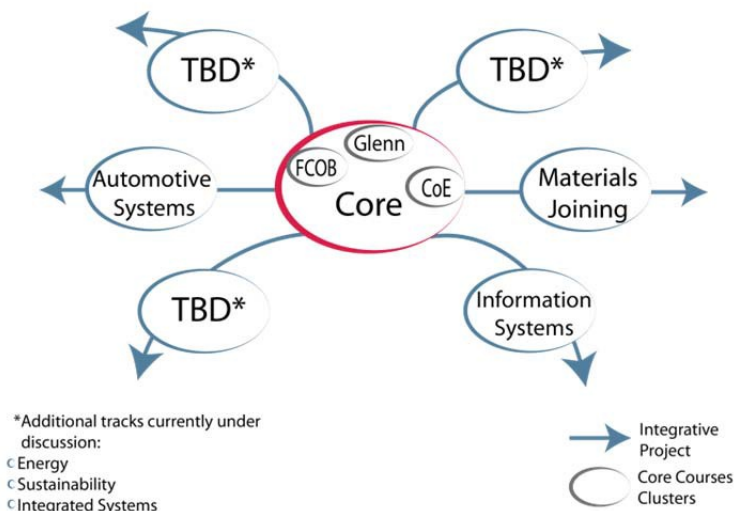


Figure 1: Masters of Global Engineering Leadership: Core and Technical Tracks

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.

APPENDIX B

New Proposal

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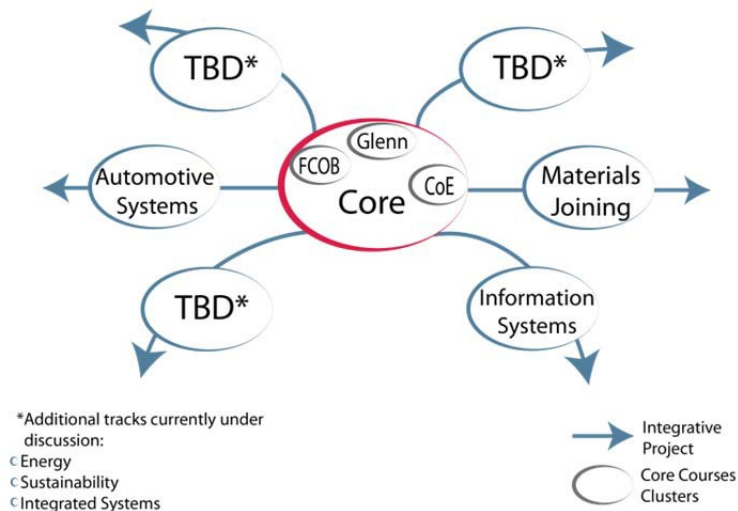


Figure 1: Masters of Global Engineering Leadership: Core and Technical Tracks

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APPENDIX C

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