

P12-190




THE FACULTY SENATE

December 18, 2006

MEMORANDUM

TO: President Robert M. Gates

FROM: R. Douglas Slack, Speaker 

SUBJECT: Approval of University Curriculum Committee Item (FS.24.68)

At its regular meeting on December 11, 2006 the Faculty Senate approved the following curriculum item from the University Curriculum Committee and submits it for your approval. Attached is a copy of the material sent to our Senators.

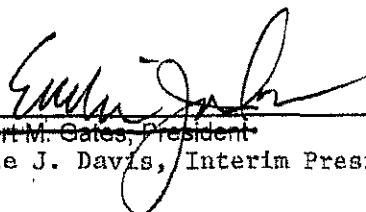
Change in Curriculum
 Dwight Look College of Engineering
 International Certificate Program for Engineering Students

Thank you for your time and consideration. Please inform me of your action on this matter.

Attachment

cc: David Prior
 Karan Watson
 Paul Meyer
 Linda Lacey
 Kemble Bennett

Approved:



 Robert M. Gates, President
 Eddie J. Davis, Interim President

11/10/07

 Date

✓ CT
 ✓ proposal
 ✓ Bib
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COLLEGE OF
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TEXAS A&M
UNIVERSITY

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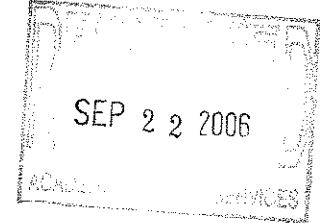
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ENGINEERING PROGRAM • THE TEXAS A&M UNIVERSITY SYSTEM

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September 22, 2006



MEMORANDUM

TO: Linda Lacey

FROM: Jo W. Howze 

SUBJECT: Proposed 2007-2008 International Certificate Program for Engineering Students

The Dwight Look College of Engineering is proposing an International Certificate Program for Engineering Students. The proposed certificate has been developed by Drs. Cesar Malave and Jorge Leon. This package includes:

- Proposed International Certificate Program for Engineering Students
- New Course Request for ENGR 410 Global Engineering

The intention is to have the new courses approved and listed in Catalog 130 for Fall 2007 and to initiate offering the certificate program at the same time.

INTERNATIONAL CERTIFICATE PROGRAM FOR ENGINEERING STUDENTS

DWIGHT LOOK COLLEGE OF ENGINEERING

Reason for being

Today's economy is global. Advances in communications and transportation technologies coupled with a historical trend of nations moving towards market economies have made it possible for companies to function using the best locations and resources no matter where in the world. The resources available are of a wide variety including money, state-of-the-art technologies, know-how and scientific discoveries, raw materials, components, and human resources. Companies without globally competent employees will not succeed in today's and future global business environments.

The job of an engineer has been deeply affected by this global transformation of companies. Engineers working in research and development, design, production, service and other areas can be located anywhere in the world as required by the business. This includes national engineers located abroad or foreign engineers working for the company from their country of origin. Globalization has accelerated and broadened the outsourcing of business functions to include international producers, suppliers and services. The exacerbation of business specialization and outsourcing requires a change in how engineers approach, model and formulate problems. Modern engineers must view companies as organizations that are scattered globally with materials, information, and people routinely moving across organizational and national boundaries. To complicate the business scene, some of the participating organizations do not belong to the same company, can be competitors, and most likely will be located in a foreign country.

A well rounded and effective engineer in this global environment is one that complements his/her core technical knowledge with excellent cross-cultural competence and international exposure. Global competence encompasses four areas of competence about a broad range of issues: knowledge (facts, concepts, and ideas), skills (behaviors and practices when knowledge is applied), attitudes (beliefs or opinions about the knowledge and skills), and context (why, when, and where to apply and how to interpret knowledge, skills, and attitudes in different situations). A globally competent person attains mastery in all four areas, most importantly context. The Global Engineering Certificate program is one program through which the College of Engineering will facilitate student development of this mastery.

The objectives of the proposed International Certificate are to provide engineers with

- (1) a framework that they can use in global projects,
- (2) basic language skills,

- (3) understanding of cultures with a focus on international matters and topics of contemporary relevance, and
- (4) international experience through internships, research, and study programs abroad.

What and who is the program designed for

The International Certificate is designed to address industry's interest in engineers who will be efficient in the global business environment. The certificate is also designed to provide A&M engineering graduates with indispensable skills to make them competitive in the global job market.

The proposed certificate will be aimed at undergraduate engineering students. However, the certificate will also be beneficial for graduate students.

The certificate is designed to allow the majority of engineering or science disciplines to obtain the certificate with minimal additional requirements above their major program.

Benefits

Students and industry will directly benefit from the proposed certificate. The International Certificate will add value to the students by providing them with skills highly desired by industry. Students from the program will be prepared to be immediately productive in international endeavors.

The certificate will also put TAMU's College of Engineering at the vanguard of engineering education by adopting programs that are offered in the most prestigious universities or only being formulated in other institutions.

Description

The proposed International Certificate Program will consist of six (6) three-hour courses for a total of eighteen (18) credit hours. The courses are intended to provide the student four knowledge components: I-Language component, II-Internationalization component, III-Global engineering component, and IV-International experience component:

- I – Language Component: Six (6) credits of at least 200 level courses in a single language (excluding English). Students could place out of these courses with AP credit or by showing proficiency by exam. These courses can be taken in or outside the US. However, immersion language to gain this basic level of language learning will not count for the international experience.
- II- Internationalization Component: Six (6) credits from the International and Cultural Diversity courses in the university core curriculum as per catalog (all engineering students should automatically have these core curriculum credits). At least one of them must have significant focus on international diversity.

III – Global Engineering Design Component: Three (3) credits from

- ENGR 410 Global Engineering
- Design course in an engineering department with significant international component

IV-International Experience Component: Three (3) credits. The international experience component is individualized and must be approved by the College of Engineering. It may be satisfied by an approved study abroad program, an international internship, a directed study or research experience, or another approved course or field experience. The minimum time period to be abroad will be one summer term. Students will be encouraged to go abroad in programs that are appropriate to their academic and career objectives. Students may fulfill this requirement through one of the following:

- Study Abroad course
- Course taken abroad as an exchange student
- 485 or 489 course abroad
- ENGR 484 International Engineering Internship
- Research abroad (minimum stay abroad equivalent to a summer course)

Courses included

One new course will be developed as part of this certificate:

ENGR 410 - Global Engineering (3-0)

Expected number of students

This program will be open to all Texas A&M students. We expect to have about 40 students enrolled in the certificate program.

Resources

No additional resources are requested. Initially, Dr. Leon and Dr. Malave will be teaching the course as an overload. It is expected that industry sponsorship will support this program in the long term.

List of faculty

- Dr. Jorge Leon (ETID & ISEN), ENGR 410, ENGR 484
- Dr. Cesar Malave (ISEN), ENGR 410, ENGR 484
- Faculty in engineering study abroad programs

Statement whether the certificate is dependent upon conferral of degree

The proposed International Certificate Program will be conferred upon completion of the BS degree in engineering, engineering technology, industrial distribution, or science, and award of the diploma.

Statement of grade requirement

A grade of C or better or S is required in all courses used towards this certificate program.

New course request and Course syllabi

(See attached)

For further information please contact:

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