THE FACULTY SENATE

July 27, 1999

MEMORANDUM

TO: President Ray M. Bowen

SUBJECT: Approval of Non-Substantive Degree Program Change for the College of Engineering

At its regular meeting on July 12, 1999 the Faculty Senate approved the attached degree program change for the College of Engineering from the Graduate Council and submits it for your approval. Enclosed is a copy of the materials sent to senators on this item.

Thank you for your consideration of this item. I would appreciate your informing me of your action on this recommendation.

[Signature]

Thomas E. Wehrly
Speaker, 1999-2000

Enclosures

cc: Dr. Ronald G. Douglas, Executive Vice President & Provost
Dr. J. Rick Giardino, Chair, Graduate Council
Ms. Linda F. Lacey, Director of Academic Support Services

Approved:

[Signature]
Ray M. Bowen, President

Date 9/10/99
REPORT OF THE GRADUATE COUNCIL MEETING
June 10, 1999

The Graduate Council at the June 10 meeting approved a non-substantive degree program change for the College of Engineering – Master of Engineering and Master of Computer Science.
March 23, 1999

To Whom It May Concern:

Dear Sir or Madam:

We, the undersigned, are the department heads and program directors for the Master of Engineering Programs and Master of Computer Science Program in the Dwight Look College of Engineering. By signing this letter, we are endorsing the request to change these programs from 36-hour programs to 30-hour programs. These changes do not necessarily mean that all programs, nor all committees, will require the minimum number of hours for the degree. However, all of the departments in the College agreed that this opportunity for a 30-hour master degree program should be available for the programs to exercise as appropriate.

Sincerely,

Terry Alfriend, Department Head
Aerospace Engineering

Ray Anthony, Department Head
Chemical Engineering

John Niedzwiecki, Department Head
Civil Engineering (incl. Ocean Eng.)

Wei Zhao, Department Head
Computer Science

Chanan Singh, Department Head
Electrical Engineering

Way Kuo, Department Head
Industrial Engineering (incl. BioM Eng.)

Suheda Jayasurya, Department Head
Mechanical Engineering

Alan Walter, Department Head
Nuclear Engineering

Charles Bowman, Department Head
Petroleum Engineering

James Gilley, Department Head
Agricultural Engineering

G. Peterson, Program Administrator
Computer Engineering

Karan Watson, Program Administrator
Engineering

C. Roland Haden, Vice Chancellor
Texas A&M Engineering Program
Dean, Dwight Look College of Engineering
Director, Texas Engineering Experiment Station
Nonsubstantive Degree Program Change Proposal

NAME OF INSTITUTION: Texas A&M University

NAME OF PROPOSED PROGRAMS (No Change in Names):
Master of Engineering in Aerospace Engineering
Master of Engineering in Agricultural Engineering
Master of Engineering in Biomedical Engineering
Master of Engineering in Civil Engineering
Master of Engineering in Electrical Engineering
Master of Engineering in Mechanical Engineering
Master of Engineering in Ocean Engineering
Master of Engineering in Petroleum Engineering
Master of Engineering in Chemical Engineering
Master of Engineering in Computer Engineering
Master of Engineering in Industrial Engineering
Master of Engineering in Nuclear Engineering
Master of Engineering in Petroleum Engineering
Master of Engineering in Computer Science

Programs as on Coordinating Board Inventory: (No Change to Existing Names or CIP Inventory)
Dwight Look College of Engineering

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College of Agriculture and Life Sciences

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HOW DO NAMES OF PROGRAMS APPEAR ON STUDENT DIPLOMAS: as in names above
HOW DO NAMES OF PROGRAMS APPEAR ON STUDENT TRANSCRIPTS: as in names above
ADMINISTRATIVE UNITS RESPONSIBLE FOR PROGRAMS: as in inventory list above
PROPOSED DATE FOR IMPLEMENTATION OF CHANGE: September 1, 1999
PERSON TO CONTACT FOR FURTHER INFORMATION ABOUT PROPOSED CHANGES:
Name: Karan Watson
Title: Associate Dean of Engineering
Phone: (409) 862-4367
Fax: (409) 847-8654

SIGNATURES:

C. Roland Hadén, Vice Chancellor of Engineering Programs
Dean of the Dwight Look College of Engineering

Ray M. Bowen, President of Texas A&M University

Barry B. Thompson, Chancellor of Texas A&M University System

GOVERNING BOARD APPROVAL DATE: 4/5/99
NONSUBSTANTIVE DEGREE PROGRAM CHANGE REQUEST

The Master of Engineering and Master of Computer Science degrees are available at Texas A&M University only to students in the Dwight Look College of Engineering. These programs are offered as non-thesis based degrees for students who are in, or intend to pursue, careers in the non-research focused areas of business and industry. After analysis of these programs, with respect to the needs of the profession, the College requests that the hours required for these degrees be lowered from 36 hours to 30 hours.

I. REASON FOR THE REQUEST

A. Rationale

The rapidly changing professions of engineering and computer science have come under substantial pressure to assure that the professionals in the fields participate in numerous continuing education opportunities beyond the B.S. degree. In response to this demand, many courses and programs are being created to satisfy this professional demand. The professionals have made it clear to academic institutions that an important option for their needs would be the one-year and/or distance-education-available master level degree option. Meanwhile, most of our Master of Computer Science or Master of Engineering programs have migrated toward a 1.5 to 2 year completion time. To help us serve the educational needs of the profession better, we believe that well focused 30-hour programs can be offered to aid in fulfilling the needs of the professionals in the fields.

B. Historical and Other Documentation of the Request

The Master of Engineering Programs at Texas A&M University first appeared in the University Catalog in 1948. Currently, students accepted to the Master level programs decide if they wish to pursue a Master of Science or a Master of Engineering degree when they file their degree plans. We sampled some programs at other institutions offering master degrees in engineering and computer science. While we found that a 36-hour non-thesis master program was common in Texas, it is not necessarily the norm nation-wide. Examples of other programs that require less than 36 hours for the master degree are found below. These programs are given as examples because they are considered to be some of the leading programs in the particular area they represent. These examples do not imply comprehensive comparative study was done for the hour requirements for master degree requirement throughout the country. They are simply examples.

Biomedical Engineering

UC San Diego claims a one-year non-thesis MS option for full-time students
U Penn offers the “Professional MS” which is 10 courses
U Utah offers an ME degree requiring 30 hours

Chemical Engineering

Cornell offers a 30-hours ME which can be completed in 2 semesters
Northwestern offers a 36-quarter-hours (24 semester-hours equivalent) MS non-thesis
Rensselaer has a 30 credit hour ME
Stanford has an non-thesis MS with 15-quarter courses (equivalent to 10 semester courses)
UC Berkeley has a 20 semester units for the master degree
U Minnesota has a 28 quarter-hours credit plus work related to a project

Civil Engineering

Rice U has a 30 semester-hours ME program
Stanford has a 45 quarter-hours (equivalent to 30 semester-hours) MS degree

Electrical Engineering

Georgia Tech has a 32 semester-hour equivalent Master degree
Carnegie Mellon has a non-thesis master program that is less than 30 hours
UC Berkeley has a 24 hours non-thesis Master degree
Industrial Engineering
Georgia Tech has a 32 semester-hour equivalent Master degree
Purdue has a 30-hour Master degree program
UC Berkeley has a 30-hour Master degree program
U Mich. has a 24-hour Master degree program

Mechanical Engineering
Carnegie Mellon has a non-thesis master program that is less than 30 hours
Virginia Tech has a non-thesis master program that is less than 30 hours

The appendix to this request contains a letter signed by the administrators for these programs concurring to this request for a change in hours. Also, letters from industrial representatives endorsing the requested change are included in the Appendix.

II. PROGRAM DESCRIPTION
The only change to the existing program description is shown below. All of the educational objectives and degree requirements, other than the lowering of required hours from 36 to 30 hours, remain unchanged. Specifically, the change requested would be reflected by the following catalogue changes (strike-throughs are items to delete and underlines are items to add):

Under the section entitled The Degree of Master of Computer Science (pgs 38 & 39 of 98/99 cat.)

Last sentence 1st paragraph:
The degree requires the completion of a minimum of 36 30 hours of course work and a satisfactory comprehensive final examination.
First sentence of third paragraph:
A maximum of 8 6 credit hours each of 684 (Professional Internship), or 685 (Directed Studies), 3 credit hours each of 690 (Theory of Research), or 695 (Frontiers in Research) may be used toward the degree of Master of Computer Science.

Under the section entitled The Degree of Master of Engineering (pg. 40 of 98/99 cat.)

Last sentence 1st paragraph:
Approximately one-third of the required 36 30 credit hours of course work will be taken in fields outside of the major field.
First sentence of fourth paragraph:
A maximum of 8 6 credit hours of 684 (Professional Internship), 8 6 credit hours of 685 (Directed Studies), up to 3 credit hours each of 690 (Theory of Research), or 695 (Frontiers in Research) may be used toward the degree of Master of Engineering.

III. RELATIONSHIP TO EXISTING AUTHORIZED PROGRAMS
A. Relationship to existing programs
This request reflects a change to existing programs, not new programs.
B. Affect on existing programs
The change in hours for the Master of Engineering Programs and the Master of Computer Science Program may cause some students to shift from the Master of Science Programs offered in these fields to the option with fewer hours. However, the students normally determine which of the options for a master level degree they prefer based upon their desire to do a thesis or not. Therefore, we expect only a minor number of students to shift degree preference based upon the requested change in hours. We do expect a growth in enrollment in the Master of Engineering Programs at the Master of Computer Science Program because of the change to 30-hour programs. This growth will be restricted so that no new faculty or library resources are required due to this request for a
next three years. The increase in section sizes for courses currently offered in the existing programs will cause no significant educational disadvantages.

IV. EXPECTED ENROLLMENT AT THE MASTER DEGREE LEVEL (Includes MS and MEng)

A. Estimate of cumulative enrollment and new student enrollment for 5 years:

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B. Explanation of assumptions for estimates of enrollment

We expect the most significant growth in enrollment at the Masters level due to the change in hours for the Master of Engineering Programs and the Master of Computer Science Program to occur in the 2000/2001 academic year. We believe this will occur because we will begin advertising the programs' changes as soon as they are approved. This will have minor effects on the enrollments in 1999/2000 because many of the deadlines for fall enrollment will pass before approval is obtained, and interested applicants could not prepare for the pursuit of the degrees in such a short time. However, we expect rapid growth based on this demand. Some of the students will want to pursue the new programs on a part-time basis rather than a full-time basis, thus we expect the headcount to continue to grow while the FTEs should stabilize fairly quickly. We expect that the part-time students will be encouraged by more courses being offered via electronic media in the future. Currently, this is not a proposal for any of these programs to be offered strictly via distance education; simply that some course work will be pursued via distance education media.

V. RESOURCES

A. Provide a description of courses that have been implemented and new courses needed.

1. List and describe courses implemented within the last three years that would be included in the changed program curriculum. No new courses have been implemented because of the requested changes in hours to the programs. All new courses created for graduate students, particularly in the colleges of Engineering and Science, would be eligible for the degrees, whether the hours for the degrees are changed or not.

2. List and describe new courses not yet implemented for the program. No new courses are planned due to this request.

B. Describe faculty resources and faculty requirements if any.

1. Faculty members

   All current graduate faculty members in the Dwight Look College of Engineering.

2. Teaching Assignments

   The faculty members should experience no change in the number of courses they are assigned to teach. The graduate courses could experience up to a 20% growth. There
may be a few courses that would need an additional section per year because of the growth; however, the vast majority can be absorbed in the current courses.

3. **New Positions**
   - No new faculty positions are planned due to this request.

C. **Describe status of equipment with regard to these programs.**
   - No new equipment is planned due to this request.

D. **Describe status of facilities with regard to this request.**
   - No new facilities are planned due to this request.

E. **Library resources necessary for this request.**
   - No new library resources are required due to this request.