



Pg 291

THE FACULTY SENATE

August 22, 2006

MEMORANDUM

TO: President Robert M. Gates
SUBJECT: Approval of Graduate Council Item (FS.22.49) *(should be 22.48?)*

At its regular meeting on November 8, 2004, the Faculty Senate approved the following curriculum item from the Graduate Council and submits it for your approval. Attached is a copy of the material sent to our Senators.

**College of Geosciences
Department of Oceanography
Nonsubstantive Degree Program Proposal
Master of Geosciences
Certificate in Ocean Observing Systems**

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

R. Douglas Slack
Speaker

Attachment

cc: David Prior
Karan Watson
Paul Meyer
Linda Lacey
Bjorn Kjerfve

Approved:

Robert M. Gates, President

9/1/06

Date

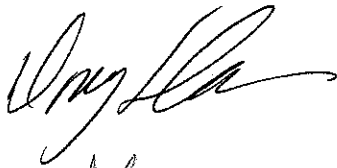



TEXAS A&M UNIVERSITY
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John R. Giardino, Ph.D.
Dean

August 2, 2006

MEMORANDUM

TO: Speaker Dr. Doug Slack 
Faculty Senate
1225 TAMU

FROM: John R. Giardino 

SUBJECT: Certificate in Ocean Observing Systems

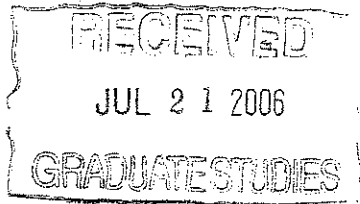
Following our telephone discussion this morning I offer the following information on the Certificate in Ocean Observing Systems. Again, as I said this morning I am contacting Faculty Senate assuming that the first paragraph of the John Morse memo would help clarify this situation.

In fall 2004, an optional track for the Master of Geoscience degree was approved by Graduate Council and Faculty Senate. The department requested the creation of an optional track thinking this was the way to offer a certificate. Unfortunately, the THECB does not equate a track to a certificate. Thus, the original intent of the department was to offer a certificate program. I have approved the new certificate based on prior approval given by Graduate Council. Oceanography is currently preparing a final letter through Dr. Paul Meyer to the Texas Higher Education Coordinating Board. Thanks for your consideration and help resolving this matter.

I have talked with Paul Meyer, and he said THECB would not have a problem with approval.

cc: Dr. Paul Meyer

TEXAS A&M UNIVERSITY
DEPARTMENT OF OCEANOGRAPHY
COLLEGE STATION, TEXAS 77843-3146



John Morse E-Mail jmorse@ocean.tamu.edu
Professor and Interim Department Head

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July 12, 2006

Memorandum

TO: John R. Giardino
Dean of Graduate Studies
Texas A&M University

*Approved
7-28-06*

THROUGH: Björn Kjerfve
Dean, College of Geosciences
Texas A&M University

FROM: John Morse
Interim Department Head, Oceanography
Texas A&M University

The Department of Oceanography is pleased to announce a new certificate program in Ocean Observing Systems. This program was originally submitted for approval as an optional track for the Master of Geoscience degree. The proposal was approved by the College of Geosciences Graduate Instruction and Curriculum Committee, the University Graduate Council, and Faculty Senate in 2004. It was then forwarded to the President's office for approval. Prior to the President's approval, it was decided that this program would be better suited as a certificate program.

Ocean Observing Systems are an important new direction in oceanographic research for assessment of environmental health and climate change. Texas A&M University's commitment to Ocean Observing Systems is demonstrated, as it is one of three Signature Program Areas targeted by the College of Geosciences and identified as a major thrust area of the Department of Oceanography. Further, two Faculty Reinvestment hires in the Department of Oceanography were specifically identified with Ocean Observing Systems. It is envisioned that the U.S. Integrated Ocean Observing System, IOOS, will be akin to the National Weather Service and will be designed to provide real-time oceanographic data, services, and products (<http://www.ocean.us>). It is significant that the President's Commission on Ocean Policy has recommended the immediate implementation of IOOS. Successful implementation of this system will require specially trained individuals in ocean data collection, data management, and production and distribution of needed products and services. Other major oceanographic institutions, such

as Rutgers University, have already established a Master's Degree in Operational Oceanography (<http://marine.rutgers.edu/cool/moo/index.html>). Current operators of ocean observing systems have indicated a willingness to consider for employment individuals with Ocean Observing training (see supporting documents).

A new Certificate in Ocean Observing Systems will help meet the demand for such individuals. The College of Geosciences is unique in the range subject matter in which training is available, such as in situ ocean observations, remote sensing technologies (RS), data analysis and display, including geographic information systems (GIS), analytical techniques and modeling, and an existing ocean observing system element, the Texas Automated Buoy System. The certificate in Ocean Observing Systems is designed to meet the growing demands for trained persons with this range of skills and will take advantage of the complementary resources in the College of Geosciences, namely the TAMU certificate programs in GIS and RS. The Ocean Observing Systems program targets graduate students who would like to add an Ocean Observing credential to their portfolio as a means of enhancing their professional prospects.

The Certificate in Ocean Observing Systems

**Department of Oceanography
College of Geosciences
Texas A&M University
College Station, Texas**

#004

May 2006

Purpose

Ocean Observing Systems are an important new direction in oceanographic research for assessment of environmental health and climate change. Texas A&M University's commitment to Ocean Observing Systems is demonstrated by current strategic plans: Ocean Observing Systems is one of three Signature Program Areas targeted by the College of Geosciences and is identified as a major thrust area of the Department of Oceanography. Further, two Faculty Reinvestment hires in the Department of Oceanography were specifically identified with Ocean Observing Systems. It is envisioned that the U.S. Integrated Ocean Observing System, IOOS, will be akin to the National Weather Service and will be designed to provide real-time oceanographic data, services, and products (<http://www.ocean.us>). It is significant that the President's Commission on Ocean Policy has recommended the immediate implementation of IOOS. Successful implementation of this system will require specially trained individuals in ocean data collection, data management, and production and distribution of needed products and services. Other major oceanographic institutions, such as Rutgers University, have already established a Master's Degree in Operational Oceanography (<http://marine.rutgers.edu/cool/moo/index.html>). Current operators of ocean observing systems have indicated a willingness to consider for employment individuals with Ocean Observing training (see supporting documents).

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A new Certificate in Ocean Observing Systems is proposed to meet the demand for such individuals. The College of Geosciences is unique in the range subject matter in which training is available, such as in situ ocean observations, remote sensing technologies (RS), data analysis and display, including geographic information systems (GIS), analytical techniques and modeling, and an existing ocean observing system element, the Texas Automated Buoy System. The proposed TAMU graduate program in Ocean Observing Systems is designed to meet the growing demands for trained persons with this range of skills and will take advantage of the complementary resources in the College of Geosciences, namely the TAMU certificate programs in GIS and RS. The Ocean Observing Systems program targets current non-thesis graduate students in the Master of Geoscience program, and other programs, who would like to add an Ocean Observing credential to their portfolio as a means of enhancing their professional prospects.

Educational Objectives and Curriculum Requirement

The educational objective of this program is to train a new generation of oceanographic professionals with the skills necessary to operate multi-disciplinary ocean observing system elements for monitoring the oceans and to use such observations to create and disseminate reliable assessments and predictions of the state of the oceans.

The Ocean Observing Systems Certificate program will provide a fundamental understanding of oceanography and the technical training required for expertise in data analysis. The 24 semester hour credit program will consist of five foundation courses and three elective courses. Transcripts designating an Ocean Observing Systems Certificate will be awarded to students who complete a schedule of course work (see Table 1).

Table 1. Requirements for the Ocean Observing Systems Certificate

Foundations of Ocean Observing (required):

- OCNG 604 - Ocean Observing Systems (3)
- OCNG 657 - Data Methods and Graphical Representation in Oceanography (3)
- GEOG 651 - Remote Sensing for Geographical Analysis (3)
- ATMO 629 - Climate Change (3)
- FRSC 651 - Geographic Information Systems (3)

Fundamentals of Ocean Science (1 to 3 of the following):

- OCNG 608 - Physical Oceanography (3)
- OCNG 620 - Biological Oceanography (3)
- OCNG 640 - Chemical Oceanography (3)

Advanced Specialized Topics (0 to 2 selected from the following):

- OCNG 610 - Mathematical Modeling of Marine Ecosystems (3)
- OCNG 649 - Estuarine Biogeochemistry (3)
- OCNG 689 - Global Ocean Observing Platforms (new course) (3)
- ATMO 459/656 - Tropical Meteorology (3)
- GEOG 660 - GIS-Based Spatial Analysis and Modeling (3)
- GEOG 661 - Digital Image Processing and Analysis (3)
- FRSC 652 - Advanced Topics in Geographic Information Systems (3)
- FRSC 661 - Photo Interpretation (3)
- MATH 601 - Methods of Applied Mathematics (3)
- STAT 601 - Statistical Analysis (3)
- STAT 626 - Methods in Time Series Analysis (3)

Admission Criteria

A student applicant to the program must be currently enrolled in a masters or doctoral degree program at Texas A&M University to be eligible for admission into the Ocean Observing Systems certificate program

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In order to be awarded the Ocean Observing Systems certificate, students must satisfy the following criteria:

- Application accepted and admitted into the program;
- Complete a minimum of twenty-four (24) semester credit hours of prescribed certificate related course work. The course work may be part of the requirements necessary to complete a masters or doctoral degree program at Texas A&M University; and
- Attain a 3.0 or higher grade point average on the course work required for the certificate.

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Relationship with Existing Programs

The coursework required for the certificate is structured so that the program will meet requirements of the existing Master of Geoscience degree. In addition, students seeking other advanced degrees at Texas A&M University may elect to pursue the certificate during the completion of their degree.

Summary of Steps Required to Attain the Certificate

Step One: Submission of an Admission Application to the Ocean Observing Systems Program

A student must be accepted into or currently enrolled in a graduate program or be enrolled as a G6 student at Texas A&M University. An application to the Ocean Observing Systems Advisory Council will include the following information:

- Applicant's name
- Date of application
- Student contact information
- Past academic degree(s): type, location, and year
- Current degree program: department and degree
- Student's signature and date
- Approval of the Ocean Observing Systems Certificate Program

Step Two: Review of the Application

The Ocean Observing Systems Advisory Council will review each student's application.

Step Three: Registration for Appropriate Coursework

Students must register for and complete all coursework required for the certificate with a minimum grade point average of 3.00.

Step Four: Record Review

Each student who is near the completion of the required course work for the Ocean Observing Systems certificate must notify the Ocean Observing Systems Advisory Council of his or her intent to complete the certificate. The Advisory Council will then review the student's record to ensure all requirements have been met.

Step Five: Issuance of the Certificate

The Ocean Observing Systems Advisory Council will convey the name of each candidate for the certificate to the Head of the Department of Oceanography, who will recommend in turn to the Dean of the College of Geosciences the certificate award. The Dean of Geosciences will submit a request in writing to the Registrar for the certificate to be noted on the transcript.

Student Record Maintenance

Official Ocean Observing Systems program records will consist of the following: an application; record of the completion of approved courses; copies of any official correspondence between the student and the program; and a recommendation by Ocean Observing Systems

Advisory Council to the Dean of the College of Geosciences through the Head of the Department of Oceanography, to award (or not award) the certificate.

The coordinator of the Ocean Observing Systems program will keep these materials, and will provide copies to the dean's office and Registrar as needed. The Registrar will maintain a permanent record of the award of an Ocean Observing Systems certificate and will make the appropriate notation on the student's transcript.

Personal data acquired on each student during the application process and participation in the Ocean Observing Systems program will not be released, except in accordance with state law and University guidelines. The guidelines stated for the Family Educational Rights and Privacy Act of 1974 and the Graduate Appeal process in the Graduate Catalog will be enforced.