



# THE FACULTY SENATE

November 10, 2002

## MEMORANDUM

TO: President Robert M. Gates

SUBJECT: Graduate Certificate Program in Remote Sensing (RS) and In Geographic Information Science (GIS) (FS.20.61)

At its regular meeting on November 11, 2002, the Faculty Senate approved the following item from the Graduate Council and submits it for your approval. Attached is a copy of the material sent to our Senators.

### Graduate Certificate Program in Remote Sensing (RS) and in Geographic Information Science (GIS)

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

Robert H. Strawser  
Speaker, 2002-2003

#### Attachment

- cc: Dr. David Prior
- Dr. Karan Watson
- Dr. Rick Giardino
- Dr. Edward Hiller

Approved:

  
Robert M. Gates, President

1-7-03  
Date



Education • Research • Extension

**TEXAS A&M UNIVERSITY**  
College of Agriculture and Life Sciences

*Department of  
Horticultural Sciences*

October 1, 2002

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Pres. App JAN 07 2003  
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OCT 04 2002

GRADUATE STUDIES

**MEMORANDUM**

TO: Dr. Rick Giardino, Dean  
Office of Graduate Studies  
Campus M.S. - 1113

THROUGH: Dr. C.R. Creger  
COALS Executive Associate Dean  
Campus M.S. - 2142

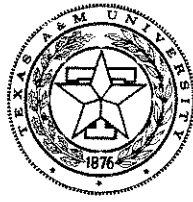
FROM: Dr. David Wm. Reed  
Professor and Interim Head  
Department of Horticultural Sciences

SUBJECT: TAMU Graduate Certificate Proposals - Revised

The COALS Graduate Program Council discussed the requests for a TAMU Graduate Certificate Program in Remote Sensing (RS) and in Geographic Information Science (GIS) (see the attached memo). The COALS Graduate Program Council unanimously recommends approval.

DWR:on

Attachment



**TEXAS A&M UNIVERSITY**  
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Department of Forest Science

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<http://forestry.tamu.edu>  
E-Mail: [forest@forestry.tamu.edu](mailto:forest@forestry.tamu.edu)

27 September 2002

MEMORANDUM

To: Dr. Rick Giardino  
Through: Dr. David Reed *DWR*  
From: Dr. C. T. Smith *CS*  
Subject: Graduate Certificate Proposals - Revised

Copies of the revised proposal for a TAMU Graduate Certificate Program in Remote Sensing (RS) and the revised proposal for a TAMU Graduate Certificate in Geographic Information Science (GIS) are enclosed for your approval for the COALS Graduate Program Council and submission to the University Graduate Council.

On the GIS proposal, FRSC 652 and GEOG 665 were removed from the upper level to eliminate duplication with the middle level. This change does not result in a reduction of the requirements for the certificate.

The RS proposal change entails the removal of OCNG 618 due to the death of the professor that taught that course. This removal does not change the overall requirements.

If you have any questions, please let us know.

Cc: Dr. Doug Sherman

7-8737

**TEXAS A&M UNIVERSITY  
COLLEGE OF GEOSCIENCES**  
College Station, Texas 77843-3148

Office of the Dean  
Room 204, O & M Building

PH 979-845-3651  
FAX 979-845-0056

October 8, 2002

**MEMORANDUM**

**TO:** Graduate Council

**THROUGH:** Dr. Vatche P. Tchakerian *Vatche P. Tchakerian*  
Acting Associate Dean for Academic Affairs

**FROM:** Dr. Douglas Sherman *Douglas Sherman*  
Head, Dept. of Geography

**SUBJECT:** Proposal for Graduate Certificate in Geographic Information Science (GIS)

Attached is a proposal for a graduate certificate in Geographic Information Sciences (GIS) proposed by the Department of Geography.

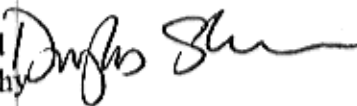
**TEXAS A&M UNIVERSITY**

College of Geosciences  
Department of Geography  
3147 TAMU  
College Station, Texas 77843-3147  
telephone: (979) 845-7141  
FAX (979) 862-4487

**MEMORANDUM**

**TO:** Vatche Tchakerian, Acting Associate Dean  
College of Geosciences

**CC:** Robert Bednarz  
Jonathan Smith

**FROM:** Douglas Sherman, Head  
Department of Geography 

**DATE:** September 30, 2002

**SUBJECT:** Proposal for Graduate Certificates in GIS and Remote Sensing

Forest Science and Geography have worked over the last year to develop a pair of collaborative Graduate Certificate Programs that will enhance to professional potential of our students. One is in Geographic Information Sciences and the other is in Remote Sensing. I am requesting your assistance in expediting the consideration of these proposals by the College of Geosciences in anticipation of the next graduate curriculum meeting of the Office of Graduate Studies, October 10, 2002. The GIS proposal includes GEOG 660, for which we are requesting a change of title and catalogue copy changes. The Remote Sensing certificate includes a new Geography course. Neither of these items has been reviewed by the College committee, and we would like them to be included for consideration with the certificate proposals. The following items are attached:

1. Copies of the two proposals.
2. A copy of the GEOG 660 title change proposal
3. A copy of the new course proposal for GEOG 651
4. Copies of email correspondence with Department Heads in the College of Geosciences and in other interested Colleges.
5. An email announcement that the College of Agriculture and Life Sciences has approved the parallel request that was processed by Forest Science.

Please note that the Bush School has designated a number for their course in the Remote Sensing proposal, pending OGS approval, although that number is not included in the proposal. A copy of a message to that effect is also attached.

Because COALS has approved the certificate proposals, they are on the agenda for the 10/10 OGS meeting. I hope that we are able to put a College of Geosciences approval on the table at that same time. Please contact me if you have any questions or concerns with this request.

**Doug Sherman**

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**From:** <jpestovic@integrity.tamu.edu>  
**To:** <sherman@geog.tamu.edu>  
**Sent:** Thursday, September 19, 2002 4:38 PM  
**Subject:** Bush graduate course in remote sensing

Doug:

I'm replying to the request for information that you submitted to Arnie Vedlitz about the Bush School course. The course: Bush 653 Technical Collections for International Security has never been taught. It is scheduled to be taught for the first time during fall semester 2003. At that time it will likely have a BUSH 689 course number. Bush 653 is the proposed number but has not yet been finalized (the paperwork has yet to go through the appropriate channels at the university). However, the course will likely be taught and has been approved by the Texas Higher Education Coordinating Board. We have no objections to it being included as a specialty course in your certificate.

Please email if you have further questions,

Jennifer Pestovic

Arnie,

Geography and Forest Science are proposing a joint, graduate-certificate program in remote sensing. I have attached a copy of the proposal. We have included your course BUSH 6XX (under development) as one of the advanced options. Do you know if that course will get a "real" number in the near term, and do you have any objections/concerns with our including it as an advanced specialty course?

Cheers, Doug

Jennifer Pestovic  
Administrative Assistant  
The Bush School of Government & Public Service  
Texas A&M University  
College Station, TX 77843-4220  
Phone: (979) 862-3469  
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E-Mail: [jpestovic@bushschool.tamu.edu](mailto:jpestovic@bushschool.tamu.edu)

**TEXAS A&M UNIVERSITY**

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September 18, 2002

Professor David Reed, Head  
Horticultural Sciences  
Texas A&M University  
College Station, Texas


Dear Professor Reed:

The Departments of Forest Science and Geography have been collaborating to develop two new Graduate Certificate Programs. Both are designed to enhance the technical skills of our graduate students and provide them a credential that will improve their prospects in a highly competitive job market. Both are designed to foster interdisciplinary studies, and to exploit the theoretical and technical resources of our respective Departments.

I am including 18 copies of each proposal for the use of your Graduate Curriculum Committee. A similar set of materials is being sent to the College of Geosciences Graduate Curriculum Committee. Professor Smith is out of the country at present, but he is expected to return September 23, and he should be able to address any specific questions that you might have at that time.

Thank you for assisting us in this rather unconventional manner.

Best regards,

  
Douglas J. Sherman  
Professor and Head

DJS/mc

enc

pc: T. Smith  
V. Tchakerian



# **PROPOSAL FOR A TAMU GRADUATE CERTIFICATE PROGRAM IN Geographic Information Science (GIS)**

**Submitted to the College of Agriculture and Life Sciences by the Department of  
Forest Science**

**Submitted to the College of Geosciences by the Department of Geography**

## **1) Rationale**

With the increasing applications of GIS technology in wide-ranging fields with interests in spatially distributed information, such as transportation, environmental/resource management, marketing, facility management, health care delivery, agriculture, and planning, for example, the demand for senior GIS analysts and project managers is growing rapidly. The proposed TAMU graduate certificate program in GIS is designed to meet this demand. The certificate program is targeting primarily our current graduate students who would like to add a GIS-specific credential to their portfolio while learning state-of-the-art knowledge in GIScience and GISystems and deepening their knowledge of the theoretical underpinnings and advanced applications of GIS technology.

## **2) Curriculum Design**

The certificate program will focus on training GIS analysts and project managers for advanced applications and spatial problem-solving. It aims to maintain a balance between technical training (GIS skills) and domain-specific expertise. There will be 4 courses in total (a minimum of 12 credit hrs): 3 required GIS courses (see below), and 1 elective course. Because the certificate program is interdisciplinary, no student may take four courses from the same department. The student could expect to complete the program within three semesters, although there is no specific time requirement.

### **Introductory level (1 of 2 is required)**

FRSC 651 Geographic Information Systems

GEOG 660 Applications for Geographic Information Science (new Title)

### **Intermediate Level (both are required)**

FRSC 652 Advanced Topics in Geographic Information Systems

GEOG 665 GIS-based Spatial Analysis and Modeling

### **Specialized GIS Courses (1 of the following is required)**

ENTO 625 – Landscape Ecology

PLAN 625 – Introductory GIS in Landscape Architecture and Urban Planning

RLEM 635 – Landscape Analysis



# **PROPOSAL FOR A TAMU GRADUATE CERTIFICATE PROGRAM IN Remote Sensing (RS)**

**Submitted to the College of Agriculture and Life Sciences by the Department of Forest Science**

**Submitted to the College of Geosciences by the Department of Geography**

## **1) Rationale**

Increasingly, Remote Sensing (RS) technologies are applied to wide-ranging fields such as environmental/resource management, marketing, facility management, agriculture, planning, homeland security and intelligence gathering. In addition, the synergistic linkages between RS technologies and Geographic Information Systems (GIS) are rapidly increasing. The demand for individuals with a solid grounding in remote sensing is growing. The proposed TAMU graduate certificate program in Remote Sensing is designed to meet these growing demands and complement a parallel, proposed TAMU certificate program in GIS. The RS certificate program targets current graduate students who would like to add a Remote Sensing specific credential to their portfolio as a means of enhancing their professional prospects.

## **2) Curriculum Design**

The certificate program will focus on training Remote Sensing Specialists for advanced applications and spatial problem solving. It strikes a balance between technical training and domain-specific expertise. The program will consist of four courses for a minimum of 12 credit hours and will be composed of two foundation courses and two elective courses. The program is designed to be completed in a year, although no time constraints are imposed.

### **Introductory Level (both are required)**

GEOG6XX - Remote Sensing for Geographical Analysis

FRSC608 Remote Sensing for Natural Resource Management

### **Intermediate Level (1 of 2 is required)**

GEOG661 - Digital Image Processing

FRSC661 - Photo Interpretation

### **Specialized Remote Sensing Courses (1 of the following is required)**

BUSH6XX - Technical Collection Systems in International Security

GEOG696 - Geomorphology and Remote Sensing

METR655 - Satellite Data in Meteorology

ELEN634 – Morphological Methods in Image and Signal Processing

ELEN642 – Digital Image Processing

ELEN649 – Pattern Recognition