April 14, 2016

MEMORANDUM

To: Dr. Leonard Bright  
Chair, Graduate Council

Through: Dr. Kate C. Miller  
       Dean  
       College of Geosciences

From: Dr. Eric M. Riggs  
       Associate Dean for Graduate Affairs and Diversity  
       College of Geosciences

SUBJECT: Distance Education Master of Science in Geology and Geophysics and Master of Geoscience

The College of Geosciences is partnering with Pearson Embanet, one of the world’s leading companies in helping non-profit universities take professionally-focused, technical-fields graduate programs online with the highest possible quality. We are finalizing over two years of negotiations and collaborative work to convert and launch three existing, on-campus MS degrees into viable online versions at scale. Pending approvals we are hoping to enroll our first full-online students in the Spring of 2017.

We have worked with the faculties of the Departments of Geology & Geophysics and Geography to craft and approve defined curricular plans based in almost entirely existing courses and based on the currently approved and active Petroleum Certificate that is available within the current on-campus degrees to shape this online program. We have also crafted and had approved by the Board of Regents a special program fee for these programs that will enable high-quality online instruction and necessary infrastructure to run this program at scale. While the program is intended to serve fully online students, we have been able to provide for a defined, limited number of on-campus students to be able to take these courses as well as they become available in this modality. The proposed course list, curriculum and rollout models and the program fee request that was approved are all attached to this packet for your background information. I would also be happy to present this material to the Council if that would be helpful. The attached approval and online delivery proposal forms also contain much more detail about our plans and rationale. This represents only a small subset of the available documentation supporting and describing the development of this program, so if there is anything else you need, please let me know.

Please contact me if you have any questions at emriggs@tamu.edu or 979-845-3651
<table>
<thead>
<tr>
<th>Course</th>
<th>Petroleum Geology/Geophysics</th>
<th>GIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GEOL 619: Intro to Petroleum Geology</td>
<td>GEOG 650: Applications in GIS</td>
</tr>
<tr>
<td>3</td>
<td>GEOL 622: Stratigraphy</td>
<td>GEOG 676: GIS Programming</td>
</tr>
<tr>
<td>4</td>
<td>GEOP 629: Seismic Interpretation</td>
<td>GEOG 659: GeoDatabases</td>
</tr>
<tr>
<td>5</td>
<td>GEOL 612: Structural Geology</td>
<td>GEOG 678: Web GIS</td>
</tr>
<tr>
<td>6</td>
<td>GEOL/GEOG 6XX Petroleum Industry</td>
<td>GEOG 662: GIS in Land Management</td>
</tr>
<tr>
<td>7</td>
<td>GEOP 628: Basin Analysis</td>
<td>GEO 651: Remote Sensing for Geographical Analysis</td>
</tr>
<tr>
<td>8</td>
<td>GEOP 629: Sub-Surface Mapping</td>
<td>GEOL/GEOG 6XX: Petroleum Industry</td>
</tr>
<tr>
<td>9</td>
<td>GEOL 624: Carbonate Reservoirs</td>
<td>GEOL/GEOG 6XX: Capstone - Integrated Petroleum Exploration Project</td>
</tr>
<tr>
<td>10</td>
<td>GEOL 6XX: Unconventional Reservoirs</td>
<td>GEOL/GEOG 6XX: GIS in the Petroleum Industry</td>
</tr>
<tr>
<td>11</td>
<td>GEOL/GEOG 6XX: Petroleum Exploration Project</td>
<td>GEOG 6XX: GIS in the Petroleum Industry</td>
</tr>
</tbody>
</table>
Course Carousel Model

This illustrates the model structure only! Next slide has the current iteration of thinking on specific courses.
Rollout is meant to be gradual as the program and local expertise builds. The course scheme is more important than course numbers — note that courses are built in a just-in-time manner as we move forward.

<table>
<thead>
<tr>
<th>Course Rollout schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
</tr>
<tr>
<td>SU 16A</td>
</tr>
<tr>
<td>SU 16C</td>
</tr>
<tr>
<td>FA 16B</td>
</tr>
<tr>
<td>FA 16C</td>
</tr>
<tr>
<td>SP 17A</td>
</tr>
<tr>
<td>SP 17B</td>
</tr>
<tr>
<td>SU 17A</td>
</tr>
<tr>
<td>SU 17B</td>
</tr>
<tr>
<td>FA 17A</td>
</tr>
<tr>
<td>FA 17B</td>
</tr>
<tr>
<td>FA 18A</td>
</tr>
<tr>
<td>FA 18B</td>
</tr>
<tr>
<td>SP 18A</td>
</tr>
<tr>
<td>SP 18B</td>
</tr>
</tbody>
</table>
I. Programmatic justification and proposed use of the new fee

The College of Geosciences currently has professionally oriented, technical non-thesis MS degree options available for on-campus students with a focus on Petroleum Geoscience. These span the departments of Geology & Geophysics and Geography, and are based in the current Master of Geology or Geophysics – options with a shared core curriculum – and the Master of Geoscience with an emphasis on petroleum-related Geographic Information Science and Technology (GIST). In order to address overwhelming demand from industry and clear student interest, as well as reach new groups of students and working professionals domestically and internationally, we are taking three allied programs online together as a group, and are seeking approval of a program fee that will support the online versions of these programs only. These programs will be run as a coordinated set and we are seeking approval for a program fee that enables the expanded teaching operations in an online format and related course improvements, and new program features including a capstone course that will include a short term on-campus residency. The proposed fee will not apply to the wholly on-campus versions of these programs. Other expenses covered partially by this proposed fee include expanded technical software which will be served at scale for these online programs and which requires site licenses and server use at a scale unique to this environment. The fee also partially pays for expanded services in student recruitment and retention, marketing, ongoing work in custom instructional design and media development for the online programs.

Texas A&M will benefit from tuition and fees revenue from all of these programs combined of an estimated $7 million by year three after launch. The program fee will ensure Texas A&M University's petroleum geosciences online programs are high quality and leading-edge. This is critical as key employers are looking for us to innovate in the delivery mode and pedagogical approaches to set a new level of rigor for technical professional programs in this area. The MS in Geology or Geophysics (different options of the same core curriculum) will be a first-in-class offering in these fields as a primarily online degree. Launch of these programs will establish TAMU Geosciences as a world-wide leader in this area. As a result, costs associated with excellence in instructional design and technology will be substantial, but the benefits will be also be significant. The GIST program, with many online competitors in the general topic area, will be the only one in the nation to focus specifically on the energy industry and be explicitly linked through curriculum to petroleum geology and geophysics.

We have also designed all online programs to share a unique, on-campus residency that will allow for direct faculty and student cohort interactions, and will allow for faculty-led, work-based capstone projects that simulate the cross-functional team dynamics common in the petroleum industry. These experiences will distinguish our programs from those offered by competitors. The program fee will allow maintenance of leading technology in the field, pay graduate stipends, and support teaching faculty in support of the online programs. As can be seen from the table below, the programs are a good value, consistent with our strategy of providing high return on investment by offering a program of equal or better quality than our competitors, with a reasonable cost and the flexibility of an online and part-time program for working professionals at a level of rigor equivalent to our on-campus programs.
Comparison of similar, professionally-oriented, petroleum geoscience programs:

**MS in Geology or Geophysics**

<table>
<thead>
<tr>
<th>Competitor</th>
<th>Concentration</th>
<th>Method</th>
<th>Total Units</th>
<th>Cost Resident</th>
<th>Cost Non-Resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas A&amp;M University</td>
<td>Petroleum Geology and Geophysics*</td>
<td>Online with on-campus capstone, with proposed fee</td>
<td>36</td>
<td>$ 28,800</td>
<td>$ 36,288</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Existing) On campus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$ 13,104</td>
<td>$ 27,144</td>
</tr>
<tr>
<td>University of Texas - Austin</td>
<td>MA in Petroleum Geology</td>
<td>On campus</td>
<td>33</td>
<td>$ 18,018</td>
<td>$ 32,868</td>
</tr>
<tr>
<td>University of Houston</td>
<td>MS in Geology</td>
<td>On campus</td>
<td>36</td>
<td>$ 12,600</td>
<td>$ 29,232</td>
</tr>
<tr>
<td>Rice University</td>
<td>Professional MS in Subsurface Geoscience</td>
<td>On campus</td>
<td>40</td>
<td>$ 43,500</td>
<td>$ 43,500</td>
</tr>
<tr>
<td>Colorado School of Mines</td>
<td>MS in Geology</td>
<td>On campus</td>
<td>30</td>
<td>$ 24,660</td>
<td>$ 54,400</td>
</tr>
<tr>
<td>University of Colorado - Boulder</td>
<td>MS in Geological Sciences</td>
<td>On campus</td>
<td>30</td>
<td>$ 17,040</td>
<td>$ 45,870</td>
</tr>
<tr>
<td>University of Arkansas</td>
<td>MS in Geology</td>
<td>On campus</td>
<td>12</td>
<td>$ 11,640</td>
<td>$ 27,570</td>
</tr>
<tr>
<td>South Dakota School of Mines &amp; Tech</td>
<td>MS in Geology and Geological Engineering</td>
<td>On campus</td>
<td>32</td>
<td>$ 6,720</td>
<td>$ 15,040</td>
</tr>
<tr>
<td>University of Southern California</td>
<td>MS in Petroleum Engineering</td>
<td>Online</td>
<td>27</td>
<td>$ 46,062</td>
<td>$ 46,062</td>
</tr>
<tr>
<td>University of Nevada - Las Vegas</td>
<td>MS in Geoscience</td>
<td>On campus</td>
<td>30</td>
<td>$ 7,920</td>
<td>$ 16,650</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td></td>
<td>$ 21,910</td>
<td>$ 34,514</td>
</tr>
</tbody>
</table>

*There are currently no directly comparable online programs in petroleum geology and geophysics*

**Master of Geoscience – emphasis on Petroleum GIST (MGsc – GIST)**

<table>
<thead>
<tr>
<th>Competitor</th>
<th>Concentration</th>
<th>Method</th>
<th>Total Units</th>
<th>Cost Resident</th>
<th>Cost Non-Resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas A&amp;M University</td>
<td>MGsc in GIST with Petroleum emphasis</td>
<td>Online with on-campus capstone, with proposed fee</td>
<td>36</td>
<td>$ 28,800</td>
<td>$ 36,288</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Existing) On campus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$ 13,104</td>
<td>$ 27,144</td>
</tr>
<tr>
<td>Johns Hopkins University</td>
<td>MS in GIS</td>
<td>Online</td>
<td>30</td>
<td>$ 34,950</td>
<td>$ 34,950</td>
</tr>
<tr>
<td>North Carolina State</td>
<td>MS of GIST</td>
<td>Online</td>
<td>30</td>
<td>$ 11,160</td>
<td>$ 21,720</td>
</tr>
<tr>
<td>Northeastern University</td>
<td>MS of Professional Studies in GIST</td>
<td>Online</td>
<td>45</td>
<td>$ 26,730</td>
<td>$ 26,730</td>
</tr>
<tr>
<td>Penn State Online</td>
<td>MS in GIS</td>
<td>Online</td>
<td>35</td>
<td>$ 26,635</td>
<td>$ 26,635</td>
</tr>
<tr>
<td>University of Arizona</td>
<td>MS in GIST</td>
<td>Online</td>
<td>30</td>
<td>$ 13,050</td>
<td>$ 28,860</td>
</tr>
<tr>
<td>University of Denver</td>
<td>MS in GIS</td>
<td>Online</td>
<td>48</td>
<td>$ 26,784</td>
<td>$ 26,784</td>
</tr>
<tr>
<td>University of Florida</td>
<td>MS in Geomatics</td>
<td>Online</td>
<td>30</td>
<td>$ 16,950</td>
<td>$ 16,950</td>
</tr>
<tr>
<td>University of Southern California</td>
<td>MS in GIST</td>
<td>Online</td>
<td>28</td>
<td>$ 43,008</td>
<td>$ 43,008</td>
</tr>
<tr>
<td>University of Washington</td>
<td>Professional MS in GIS</td>
<td>Online</td>
<td>45</td>
<td>$ 27,945</td>
<td>$ 27,945</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td></td>
<td>$ 25,601</td>
<td>$ 28,987</td>
</tr>
</tbody>
</table>
The rationale for offering these programs in a part-time, online format is to capitalize on retraining current professionals that are currently working in the petroleum industry or related businesses and wish to gain stronger credentials for advancement, and individuals with other technical degrees seeking entry into the industry. The master's degree is increasingly the expected working degree in these fields, so there is a substantial unmet need in this area. Our intent is also to reach a significant out-of-state and international audience, so the asynchronous delivery modes possible in online learning are attractive. The part-time model allows them to continue working while earning a master's degree in an area highly applicable to their current work. Additionally the work-based, team based capstone project is instrumental in applying what is learned through the curriculum in real-world scenarios, which also benefits their current and future employers.

The total program cost outlined in the tables above includes all tuition and fees, software licensing and technology access, and costs associated with the academic portion of the capstone residency. Students will have to find their own way to College Station for this portion of the program and will have to pay for their own room and board while on campus.

As will be noted in the budget template, we propose a fee of $436/SCH for in-state students and a fee of $254/SCH for out-of-state students. Given the differential in tuition charged for these groups of students, the total cost charged to students for tuition and fees is calculated at $800/SCH for in-state students and $1,008/SCH for out-of-state students. This arrangement preserves and balances the finances of the program such that in-state students still receive a discounted rate for the program, in keeping with the philosophy of a State institution, and also provides an attractive market rate for the program to out-of-state students. In addition, this approach distributes the tuition revenue from this program to both the University and the program itself to ensure the optimum distribution of resources to provide both central and local services to all students in the online program. We are planning for an optimum 50%/50% mix of in- and out-of-state students, which will provide the best balance of student value and student support while also providing the best balance of programmatic and central University services to maximize student success.

The College of Geosciences requests approval for annual flexibility to determine the program cost for this suite of online MS degrees. This flexibility is required because of the highly competitive nature of the professional technical education market and because we must quote a program cost over a year in advance of the students entering the program. Especially because much of our program fee justification is based in providing access to top-notch, production-grade, state-of-the-art software and an in-depth residential capstone workshop, we need to have the ability to adjust costs in response to market pricing for these critical assets. We request, therefore, approval for the following process for setting and announcing the program costs as follows:

1. The College of Geosciences will annually survey the program cost of several competing programs, including those listed on the tables on the preceding pages.

2. The College of Geosciences sets the program cost for the next academic year based on the costs of delivering the program and demand for the program, but any annual increase in the quoted program cost will be limited to 10 percent above the average current cost of the competitive petroleum geosciences programs. The actual quoted program cost, however, will be based on delivery cost and demand and will be consistent with our value-oriented strategy. As such we anticipate annual quoted cost increases will be much less than the 10 percent limit.
3. Program costs will be posted on our website concurrent with opening the application process for the next year’s entering class.

Use of Revenues

- **Online Program Operations.** The cost of operating the three interrelated online MS programs in Petroleum Geosciences (Geology, Geophysics and GIST) are supported in part by the program fee but also substantially from tuition and teaching fees already in place at TAMU. Program fees will provide part of the revenue stream that will support the program director and staff support.

- **Additional Departmental Operations.** Program expenses will also include substantial course and custom media development, as we transition the content of three related graduate programs into online modality. Instructional design, media development and related professional development of faculty are large expenses. Programs of this nature and at this scale also have substantial marketing and recruiting costs, and we have allocated a substantial budget to these front-end costs. These Petroleum Geoscience online programs will be a national first-in-class offering and as such will require a sophisticated and broad reaching marketing effort. As we are expanding our online presence substantially as College, we are also budgeting for substantially expanded student services related to student success, enrichment activities and oversight of progress.

Related to these operations is planning and design work for a signature aspect of this newly renovated program, the Capstone Residency. While no students will be in this final course in FY2017, design work for this integrated, industry-related teamwork experience needs to be underway. This experience will be a signature aspect of our curricula, replicating the highly collaborative and often high-intensity experience of working in cross-functional teams in the petroleum industry. Online students will come to College Station to engage with faculty and each other in this experience, as well as with other industry professionals.

- **Teaching Faculty & Graduate Assistants.** To be on the leading edge we must continually evaluate and adjust course offerings to meet the needs of technical professionals working in this dynamic and high-tech industry. We also anticipate the delivery of this program at scale will require the addition of APT faculty with professional experience in the petroleum industry. These individuals will be supported entirely by the program revenues. Existing on-campus faculty will be instrumental in developing the online versions of current courses, and will need ongoing course development funds and professional development/training. Graduate assistants will be needed for a variety of tasks as the program grows.

- **Online Student Recruiting and Admissions.** In order to reach our projected enrollment targets, we must dedicate resources devoted to recruiting the best students. While recruiting top graduate students in all programs is a challenge, recruiting the right technical professionals to this online program with the requisite skills and experience to succeed is a particular challenge. This requires substantial vetting and interaction prior to admissions and after the generation of marketing leads. The fee covers a specialized admissions staff using specialized customer relationship management (CRM) software, delivery of information sessions, and other extensive marketing and promotion activities online and in-person to recruit quality students.
• **Technology.** Program revenues (this requested program fee in addition to tuition) will be used to provide cutting-edge, industry standard software for geophysical and geological analysis and interpretation, and for geographic information system database management and analysis. The software licensing is negotiated at academic rates but server use, rental, and management is still costly. To achieve excellence and scale in this online program, we will need to deliver software and IT services to students at levels beyond those we currently support. The FY 2017 budget, being in the heavy growth phase of this program, captures a front-loaded investment that we anticipate will decrease to a maintenance level through time, allowing College startup support to decline as the revenues become self-sustaining.

• **State Authorizations/Compliance.** As this online program will have a national and international reach, we anticipate a steady set of costs related to maintaining our state authorizations to teach in other states around the nation and requiring time of professionals who can help us meet all export control and other relevant compliance issues. The petroleum industry is an area of research with substantial specialized software use and compliance is a major concern.

II. Public hearing and/or student referendum requirements

This program does not yet exist in its online form, therefore there are no graduate students to approach for a hearing. The primary targeted audiences are professionals currently working in or around the petroleum industry looking to upgrade their skills, and technical professionals seeking to retrain to enter this field. These people are located nationwide and internationally and are not currently on campus. In some cases costs will not be completely born by the student. It is anticipated that many employers will sponsor the cost of this degree, much like is done for employees in MBA programs or other specialized work-specific higher degrees.

III. Budget impact if program fee request is not approved

This request is for FY 2017 and future years, but we request that if approved, this fee may be implemented in the Summer 2016 term if we are able to launch this program in time.

The budget impact (either for Summer 2016 or Fall 2016 – within FY 2017) of this fee is substantial. In our budget outline provided with this narrative, we illustrate the entire financial picture of this program so that the impact of the fee requested here is clear.

If this program fee is not approved, this online program will not be able to compete effectively and will not be financially sustainable. Our market analysis and existing application pressure for on-campus programs indicates there is substantial demand for these programs, despite the current industry downturn. Many professionals are actively retraining now, and by the time they graduate from this program all projections are that the global energy industry should have recovered. It is also well documented that all of these fields are currently facing long-term labor shortages, so launching at this scale makes good academic and programmatic sense. The program fee is critical to being able to deliver this program successfully, at a quality level expected by the industry and by TAMU Geosciences.
In reality, the online program could not operate on basic graduate tuition and fee funding. This would leave unmet demand for the curriculum, as this is a high demand area expected to be needed for years to come.

IV. Justification for ending balance
With an initial investment of approximately $230,000 from the College of Geosciences in FY 2017, eventual revenues will be sufficient to recoup the funds and invest in other strategic priorities and other online MS programs in the College.

There is no anticipated ending balance in the long-term, other than a moderate operating reserve.

V. Additional information
None.
Request for New Student Fee  
Texas A&M University  
Online Programs in Petroleum Geoscience: Master of Geology, Master of Geophysics, Master of Geosciences - GIST  

LEGISLATIVE/INTERNAL MAXIMUM:

<table>
<thead>
<tr>
<th>Basis</th>
<th>for Fall and Spring</th>
<th>Proposed: for Fall and Spring</th>
<th>for Summer</th>
<th>Proposed: for Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>$436/sch (in-state), $254/sch (out-state)</td>
<td>for Full and Spring</td>
<td>Proposed:</td>
<td>for Summer</td>
<td>Proposed:</td>
</tr>
<tr>
<td>$436/sch (in-state), $254/sch (out-state)</td>
<td>for Summer</td>
<td></td>
<td>for Summer</td>
<td></td>
</tr>
</tbody>
</table>

| Number of Students Affected: | 213 |
| Projected Student Enrollment: | 449 (total headcount Fa16 + Sp17 + Su17) |
| Projected Semester Credit Hours: | 2425 total (3 SCH/course x projected avg 1.8 courses/student/term) |

<table>
<thead>
<tr>
<th></th>
<th>FY 2017 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEGINNING BALANCE</td>
<td>0</td>
</tr>
<tr>
<td>Revenues</td>
<td></td>
</tr>
<tr>
<td>Program Fees</td>
<td>50% $436/sch in state + 50% $254/sch out-of-state</td>
</tr>
<tr>
<td>Tuition (in state) and Teaching fees (out of state)</td>
<td>836,625</td>
</tr>
<tr>
<td>College Support</td>
<td>1,355,213</td>
</tr>
<tr>
<td>Interest</td>
<td>230,162</td>
</tr>
<tr>
<td>__________ - (Other)</td>
<td>0</td>
</tr>
<tr>
<td>Total Revenues</td>
<td>2,422,000</td>
</tr>
</tbody>
</table>

| Expenses | |
| Salaries & Wages | $545K faculty + $100K staff |
| Fringe Benefits | $645K @27% |
| __________ - Departmental Operations for online programs | 645,000 |
| Course and Custom Media Development | |
| Marketing and Recruitment | 174,000 |
| Enhanced retention and technology support for online students | 1,118,000 |
| State Authorizations/Compliance | |
| Capstone Residency, preparations and planning | 39,000 |
| Technology (estimated $2K per individual student @ 213 individuals) | 20,000 |
| __________ - (New Initiative) | 426,000 |
| Total Expenses | 2,422,000 |

Increase/Decrease in Balance (Revenues less Expenses) | 0 |

ENDING BALANCE | 0 |
Texas A&M University

New Certificate, Bachelors, Masters, or Doctoral Program
Undergraduate • Graduate • Professional
• Proposal Checklist •

Program request type:
☐ Undergraduate  ☒ Graduate  ☐ First Professional (e.g., DVM, JD, MD, etc.)

Requested by the Department or Unit of:  College of Geosciences & Dept. of Geography

Program Type, Level, Designation, Title, Description, Hours

Program Type:  ☐ Certificate Program  ☒ Degree Program

Program Level:  ☐ UG Certificate  ☐ Grad Certificate  ☐ Bachelor  ☒ Master  ☐ Doctoral  ☐ Professional

Degree Designation (i.e., BS, BA, MA, MS, MEd, MS, PhD, EdD, etc.)  MGSc

Title of proposed program:  Master of Geoscience

Proposed CIP Code (if known):  40.0601.00

Brief program description (provide a catalog description for undergraduate and graduate certificates):
The Master of Geoscience degree is an undifferentiated college-wide degree which allows each department to offer the Master of Geoscience. Specific, structured options have been developed for energy-related career paths and GIST in that industry.

Minimum program semester credit hours (SCH)  Certificates - 12 hours*  Bachelors - 120 hours  Masters - 30 hours

Proposed program hours:  36

*12 hours minimum to appear on transcript

Certificate Programs:
☐ Embedded

Students take coursework that will result in a degree and certificate being earned at the same time.

☐ Standalone

Non-degree seeking students take coursework to earn a certificate only (no degrees are awarded).

Off-Campus or Distance Delivery

% of Program a student can take off-campus or through Distance Education  Program Start Date  SACSCOC Approval**  When Provost needs to inform SACSCOC

☐ 25%

☐ 50%

☐ 80%

☒ 100%

Jan 2017 online - already operating on campus

Approval Required  6 months before first day of program

**Notification letter arranged through the Vice Provost for Academic Affairs and sent by TAMU President.

Program Delivery Mode

☐ On-campus

☐ Broadcast / TTVN

☐ Specific off-campus location***

☒ Distance Education / Internet  ☒ In-State  ☒ Out-of-State  Start Date  Jan 2017

☐ Out-of-Country

Will this program be offered with another institution?  ☐ Yes  ☐ No

If yes, contact the Vice Provost for Academic Affairs for additional reporting requirements.

***Is this an approved SACSCOC location?  ☐ Yes  ☐ No

If no, a program prospectus must be sent to SACSCOC. Approved locations as of March 2012: TAMU-Galveston, TAMU-Qatar, University Center-The Woodlands, CityCentre-Houston, Dubai and Saudi Arabia.

Program Funding

Has program funding been finalized at the department or college level?  ☒ Yes  ☐ No

If no, explain or attach budget:  See attached approved BOR program fee request.

Will new costs for the first five years of the program be under $2 million?  ☒ Yes  ☐ No

If new costs exceed $2 million, coordinating board approval is required.
Submitted by (Contact Person):

Eric Riggs
Name
Associate Dean
Title

emriggs@tamu.edu
Email
979-845-3651
Phone

Certification Statement

By signing below, the Dean of the College certifies the proposed program complies with coordinating board standards. If the program is delivered through Distance Education, the Dean of the College certifies that they are following the Principles of Good Practice for Academic Degree and Certificate Programs and Credit Courses Offered Electronically.

Signature, Department Head or Interdisciplinary Program Chair
Eric Riggs
Typed or Printed Name

Date
5/5/2016

Signature, Department Head or Interdisciplinary Program Chair (Joint program)
David Cairns
Typed or Printed Name

Date

Chair, College Review Committee
Date

Dean of College
Date

Chair, University Curriculum Committee or Graduate Council
Date

Additional Approvals Required: Faculty Senate and President

Page 2
Revised 04.11.2014
Distance Education
Electronic to Individuals (online Delivery) Approval Form

Submitted by:

☐ Texas A&M University
☐ Texas A&M University–Central Texas
☐ Texas A&M University–Commerce
☐ Texas A&M University–Corpus Christi
☐ Texas A&M University–Kingsville
☐ Texas A&M University–San Antonio
☐ Texas A&M University–Texarkana
☐ Texas A&M International University
☐ Prairie View A&M University
☐ Tarleton State University
☐ West Texas A&M University
☐ Texas A&M Health Science Center

Distance Education: Electronic to Individuals (online Delivery) Authorization Request

Please list the proposed degree and CIP code:

Degree: Master of Geoscience (MGSC)

CIP Code: 40.0601.00

When is the effective date of the proposed program?

Effective Date: Spring 2017

**Please note:** This proposed program cannot be advertised as an online delivered degree program until the A&M System Office of Academic Affairs has approved it and the Texas Higher Education Coordinating Board has been notified.

Summary of Proposal (Include Background Information and Rationale for the change.)

The College of Geosciences offers a non-thesis program that leads to the degree of Master of Geoscience (MGsc). The degree is multi-departmental, encompassing all aspects of the geosciences.

This advanced degree program is especially appropriate for experienced professionals in geoscience or related fields seeking a professional Masters degree. Self-styled and structured options are available. Suitable audiences include public- and private-sector professionals working in the environmental or energy fields, or active K–12 science teachers. It offers opportunities to study a broad range of environmental, energy and geoscience topics. The Master of Geoscience degree is an undifferentiated college-wide degree which allows each department to offer the Master of Geoscience.

Specific, structured options are being developed for energy-related career paths. The best-developed option at this time is a set of courses that exist within the Geographic Information
Science curriculum existing jointly between the departments of Geography and Geology & Geophysics, with the bulk of graduate instruction in Geography.

The Department of Geography is unique in the College of Geosciences in bridging the social and natural sciences. Traditionally, Geography has been divided into two major subfields: Human and Physical Geography. The former is concerned with understanding how human, social, cultural and economic aspects of humankind interrelate while the latter seeks to understand the dynamics of physical landscapes and the environment. Geographers also seek to understand the relationship between people and their environments, in essence bridging these two subfields.

In the past half-century, a third subfield Geographic Information Science (GISci) has emerged which emphasizes the tools and techniques of spatial analysis. It also encompasses the triad of modern geospatial technologies – Geographic Information Systems (GIS), Global Navigation Satellite Systems (GNSS) and Remote Sensing – that are enabling the current revolution in spatial analysis. In the Texas A&M Geography Department research in this subfield includes development of remote-sensing image classification algorithms, as well as GIS-based modeling and spatial-analysis techniques. Remote sensing research focuses on development of automated techniques for estimating terrestrial biogeophysical properties, whereas GIS technique development focuses on geocoding, decision support systems, and geovisualization. In 2014, the Department began offering an undergraduate major in Geographic Information Science and Technology and has for more than a decade offered graduate certificates in GIS and Remote Sensing and has produced numerous M.S. and Ph.D. students in the subfield.

Geospatial technologies, particularly GIS, are in the Petroleum Industry. Faculty in the Department have been working with industry professionals to identify the technical skills and workplace competences required of Texas A&M Geography graduates seeking employment as Geospatial Professionals in this industry. The Department intends to develop the first GIS program with a focus at the undergraduate and graduate levels on producing Geospatial Professions whose skill set is tailored specifically to the Petroleum Industry.

Degree-plan tracks exist within many departments and interdisciplinary degree programs in the College of Geosciences which lead to professionally-oriented, technical non-thesis MS degree options for on-campus students. Three of these have a focus on Petroleum Geoscience, and much of the coursework is already included in the currently available and active Petroleum Certificate which is currently available to on-campus students in all of the relevant degree programs. These span the departments of Geology & Geophysics and Geography, and are based in the current Master of Geology or Geophysics options with a shared core curriculum – and the Master of Geoscience with an emphasis on coursework in petroleum-related Geographic Information Science and Technology (GiST). All of these are non-thesis, 36 credit-hour MS degrees.

In order to address overwhelming demand from industry and clear student interest, as well as reach new groups of students and working professionals domestically and internationally, we are taking three allied programs online together as a group, and are seeking approval of each
program independently, submitted together as a package. The Master of Geoscience (MGSC) degree is by design interdisciplinary, and is the best vehicle for a dedicated interdisciplinary degree program within the College to encompass GIST-area courses and the necessary petroleum geology & geophysics needed for background and secondary expertise for graduates intending to pursue professional applications of GIST within the petroleum industry.

The Masters of Geoscience with an emphasis in GIST via distance education is a non-thesis degree requiring 36 credit hours. The online version is planned to be entirely online except for the final 6 credit hours of this program. The final 6 credit hours are a single capstone course that will be largely online but which will have a mandatory campus residence portion to foster collaborative group exercises and simulate more realistic industry conditions and settings. This unique, on-campus residency that will allow for direct faculty and student cohort interactions, and will allow for faculty-led, work-based capstone projects that simulate the cross-functional team dynamics common in the petroleum industry. This mirrors the current structure of the on-campus degree in that the MGSc includes a final project, and this would serve in that role. Further, the Department of Geology & Geophysics offers graduate course credit for an experience like this already, associated with the project work of the Imperial Barrel Award team that participates in the American Association of Petroleum Geologists annual international competition. Our plan is to scale this existing course to serve significantly more students both online and on campus, and this will be covered under a separate course proposal within the coming year. The final examination for the MS degree will be embedded in this course. These experiences will distinguish our programs from those offered by competitors. This program is of equal or better quality than our competitors, with a reasonable cost and the flexibility of an online and part-time program for working professionals at a level of rigor equivalent to our on-campus programs. The coordinating faculty for the Petroleum Geosciences distance program in Geography will be the chairs of all masters committees in this program, with other program faculty serving as advisory committee members.
Financial Implications:

To support this program, the College of Geosciences sought and received TAMUS Board of Regents approval for a program fee which will enables the expanded teaching operations in an online format and related course improvements, and new program features including the capstone course that will includes the short term on-campus residency. The program fee does not apply to the wholly on-campus versions of these programs. Other expenses covered partially by this proposed fee include expanded technical software which will be served at scale for these online programs and which requires site licenses and server use at a scale unique to this environment. The fee also partially pays for expanded services in student recruitment and retention, marketing, ongoing work in custom instructional design and media development for the online programs. Beyond these additional costs, TAMU has sufficient resources to initiate and maintain quality distance learning programs. Traditional funding sources and student fees ensure the excellence of electronically based courses and programs. A list of all student fees and explanations can be found at http://sbs.tamu.edu/.

University: Request for Authorization

I recommend adoption of the following program:

"Having complied with all of the requirements of the Texas Higher Education Coordinating Board, Texas A&M University is hereby authorized to offer the Masters of Geoscience program by distance education, electronic to individuals (online delivery) effective Spring 2017.

The Texas A&M University System Office of Academic Affairs finds that the program offering aforementioned is within the role and scope and capacity of the institution and will benefit students.

Texas A&M University certifies that the proposed distance delivery of the aforementioned program meets the criteria under Texas Administrative Code Chapter 4 Subchapter P regarding quality of the curriculum and courses; delivery of instruction; evaluation, training, supervision, and support of faculty; financial resources; and admission of the support services for students. The program is within the role and mission of the institution and in the Table of Program. The institution will comply with the standards and criteria of the Commission on Colleges of the Southern Association of Colleges and Schools and will adhere to criteria outlined in the Principles of Good Practice for Degree and Certificate Programs and Courses Offered Through Distance Education."

Approval –University:

Karan L. Watson
Provost and Executive Vice President for Academic Affairs

Date
Authorization: System

Approval – Texas A&M University System:

James R. Hallmark, Ph.D.
Vice Chancellor for Academic Affairs

Date
Texas Higher Education Coordinating Board

Certification Form for Electronically Delivered and Off-Campus Education Programs
April 2014

Directions: For all new programs that are to be delivered electronic-to-individuals (i.e., online), electronic-to-groups, or off-campus face-to-face, a signed pdf of this form must accompany email notification of the new program to Dr. Andrew B. Lofters (andrew.lofters@thech.state.tx.us). (Institutions offering distance education programs for the first time – i.e., have never offered a distance education program, such as newly created institutions -- must complete and submit an Institutional Plan for Distance Education).

Please fill out the Administrative Information below and then sign and date on page 4.

Administrative Information

1. Institution: Texas A&M University
2. Program Name – Masters of Geoscience (MGSC)
3. Program CIP Code: 40.0601.00
4. Program Delivery – Distance Education/Online
5. Proposed Implementation Date – Spring 2017
6. Contact Person – Provide contact information for the person who can answer specific questions about the program.

Name: Dr. Andrew Klein

Title: Professor of Geography, Department of Geography

E-mail: klein@tamu.edu

Phone: (979) 845-5219

Based on Principles of Good Practice for Academic Degree and Certificate Programs and Credit Courses Offered Electronically.
CURRICULUM AND INSTRUCTION

• Each program or course results in learning outcomes appropriate to the rigor and breadth of the degree or certificate awarded.

• A degree or certificate program or course offered electronically is coherent and complete.

• The program or course provides for appropriate interaction between faculty and students and among students.

• Qualified faculty provide appropriate oversight of the program or course that is offered electronically.

• Academic standards for all programs or courses offered electronically will be the same as those for programs or courses delivered by other means at the institution where the program or course originates.

• Student learning in programs or courses delivered electronically should be comparable to student learning in programs offered at the campus where the programs or courses originate.

INSTITUTIONAL CONTEXT AND COMMITMENT

Role and Mission

• The program or course is consistent with the institution's role and mission.

• Review and approval processes ensure the appropriateness of the technology being used to meet the objectives of the program or course.

Students and Student Services

• Program or course announcements and electronic catalog entries provide appropriate information.

• Students shall be provided with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technological competence and skills, technical equipment requirements, availability of academic support services and financial aid resources, and costs and payment policies.

• Enrolled students have reasonable and adequate access to the range of student services and student rights appropriate to support their learning.

• The institution has admission/acceptance criteria in place to assess the extent to which a
student has the background, knowledge and technical skills required to undertake the program or course.

- Advertising, recruiting, and admissions materials clearly and accurately represent the program or course and the services available.

**Faculty Support**

- The program or course provides faculty support services specifically related to teaching via an electronic system.
- The institution assures appropriate training for faculty who teach via the use of technology.
- The institution provides adequate equipment, software, and communications access to faculty to support interaction with students, institutions, and other faculty.

**Resources for Learning**

- The institution ensures that appropriate learning resources are available to students.
- The institution evaluates the adequacy of, and the cost to students for, access to learning resources and documents the use of electronic resources.

**Commitment to Support**

- Policies for faculty evaluation include appropriate recognition of teaching and scholarly activities related to programs or courses offered electronically.
- The institution demonstrates a commitment to ongoing support, both financial and technical, and to continuation of the program or course for a period of time reasonable and sufficient for students to complete the course or program.

**EVALUATION AND ASSESSMENT**

- The institution evaluates the program's or course's educational effectiveness, including assessments of student learning outcomes, student retention, and student and faculty satisfaction.
- At the completion of the program or course, the institution provides for assessment and documentation of student achievement in each course.

On behalf of [Texas A&M University] (Institution), I assert that the preceding Coordinating Board criteria have been met for all courses associated with this program that will be delivered electronically and off-campus face-to-face.
Texas A&M University
New Certificate, Bachelors, Masters, or Doctoral Program
Undergraduate • Graduate • Professional
• Proposal Checklist •

Program request type: ☐ Undergraduate ☑ Graduate ☐ First Professional (e.g., DVM, JD, MD, etc.)

Requested by the Department or Unit of: Dept. of Geology & Geophysics

Program Type, Level, Designation, Title, Description, Hours
Program Type: ☐ Certificate Program ☑ Degree Program
Program Level: ☐ UG Certificate ☐ Grad Certificate ☐ Bachelor ☐ Master ☐ Doctoral ☐ Professional
Degree Designation (i.e., BS, BA, MA, MS, MEd, Med, PhD, EdD, etc.) MS
Title of proposed program: Master of Science in Geology
Proposed CIP Code (if known): 40.0691.00

Brief program description (provide a catalog description for undergraduate and graduate certificates):
Geology is the study of ground-water investigations, sedimentation, mineralogy, paleontology and palaeocology, stratigraphy, structural geology, tectonophysics, petrology, field geology, engineering and environmental geology and geochemistry. An intensive two-year program of study at the master’s level is available for students who wish to enter the petroleum industry.

Minimum program semester credit hours (SCH) Certificates - 12 hours* Bachelors - 120 hours Masters - 30 hours
Proposed program hours:
*12 hours minimum to appear on transcript

Certificate Programs ☐ Embedded Students take coursework that will result in a degree and certificate being earned at the same time.
☐ Standalone Non-degree seeking students take coursework to earn a certificate only (no degrees are awarded).

Off-Campus or Distance Delivery
% of Program a student can take off-campus or through Distance Education Program Start Date SACSCOC Approval** When Provost needs to inform SACSCOC
☐ 25% — — Notification Only ———
☐ 50% — — Approval Required 6 months before first day of program
☐ 80% Jan 2017 online - already operating on campus Approval Required 6 months before first day of program
☒ 100%

**Notification letter arranged through the Vice Provost for Academic Affairs and sent by TAMU President.

Program Delivery Mode
☐ On-campus ———
☐ Broadcast / TTVN ———
☐ Specific off-campus location*** ———
☒ Distance Education / Internet ☒ In-State ☒ Out-of-State Start Date Jan 2017
☐ Out-of-Country Will this program be offered with another institution? ☐ Yes ☐ No
If yes, contact the Vice Provost for Academic Affairs for additional reporting requirements.

***Is this an approved SACSCOC location? ☐ Yes ☐ No
If no, a program prospectus must be sent to SACSCOC.
Approved locations as of March 2012: TAMU-Galveston, TAMU-Qatar, University Center-The Woodlands, CityCentre-Houston, Dubai and Saudi Arabia.

Program Funding
Has program funding been finalized at the department or college level? ☐ Yes ☐ No
If no, explain or attach budget: See attached approved BOR program fee request

Will new costs for the first five years of the program be under $2 million? ☐ Yes ☐ No
If new costs exceed $2 million, coordinating board approval is required.

Page 1 Revised 04.11.2014
Submitted by (Contact Person):

Eric Riggs

Name

Associate Dean

Title

emriggs@lumu.edu

Email

979-845-3651

Phone

Certification Statement

By signing below, the Dean of the College certifies the proposed program complies with coordinating board standards. If the program is delivered through Distance Education, the Dean of the College certifies that they are following the Principles of Good Practice for Academic Degrees and Certificate Programs and Credit Courses Offered Electronically.

[Signatures and dates]

Use additional signature lines if program is between three or more departments or colleges.

Additional Approvals Required: Faculty, Senate, and President.
DISTANCE EDUCATION
ELECTRONIC TO INDIVIDUALS (ONLINE DELIVERY) APPROVAL FORM

Submitted by:

☐ Texas A&M University
☐ Texas A&M University–Central Texas
☐ Texas A&M University–Commerce
☐ Texas A&M University–Corpus Christi
☐ Texas A&M University–Kingsville
☐ Texas A&M University–San Antonio
☐ Texas A&M University–Texarkana
☐ Texas A&M International University
☐ Prairie View A&M University
☐ Tarleton State University
☐ West Texas A&M University
☐ Texas A&M Health Science Center

Distance Education: Electronic to Individuals (online Delivery) Authorization Request

Please list the proposed degree and CIP code:

Degree: Master of Science in Geology

CIP Code: 40.0601.00

When is the effective date of the proposed program?

Effective Date: Spring 2017

**Please note:** This proposed program cannot be advertised as an online delivered degree program until the A&M System Office of Academic Affairs has approved it and the Texas Higher Education Coordinating Board has been notified.

Summary of Proposal (Include Background Information and Rationale for the change.)

The Department of Geology & Geophysics is dedicated to advancing scientific understanding of the Earth, its fluids, and their history and future, preparing the next generation of earth scientists, and using our expertise to serve the broader scientific, government, and industry communities. Our most fundamental mission is to educate students at all levels. To that end we offer a full range of degree programs at the undergraduate and graduate levels in geology and geophysics.

The department currently has thirty-two faculty members, including three joint appointments from other departments, and four post-doctoral researchers. We also have four professors of practice, who previously worked in industry and are now teaching practical application of their knowledge. Our faculty’s diverse research activities include: basin analysis, environmental geology, geophysics, geochemistry, geodynamics, hydrology, mineralogy and petrology, paleontology, seismology, sedimentology and stratigraphy, petroleum geology, structural geology, tectonophysics, and more.
Degree-plan tracks exist within the departments and interdisciplinary degree programs of the College of Geosciences which lead to professionally-oriented, technical non-thesis MS degree options for on-campus students. Three of these have a focus on Petroleum Geoscience, and much of the coursework is already included in the currently available and active Petroleum Certificate which is currently available to on-campus students in all of the relevant degree programs. These span the departments of Geology & Geophysics and Geography, and are based in the current Master of Geology or Geophysics – options with a shared core curriculum – and the Master of Geoscience with an emphasis on coursework in petroleum-related Geographic Information Science and Technology (GIST). All of these are non-thesis, 36 credit-hour MS degrees. In order to address overwhelming demand from industry and clearly evident student interest, as well as reach new groups of students and working professionals domestically and internationally, we are taking three allied programs online together as a group, but are seeking approval of each program independently, submitted together as a package.

The Masters of Science in Geology, non-thesis option, is a degree requiring 36 credit hours. The online version is planned to be entirely online except for the final 6 credit hours of this program. The final 6 credit hours comprise a single capstone course that will be largely online but which will have a mandatory campus residence portion to foster collaborative group exercises and simulate more realistic industry conditions and settings. This unique, on-campus residency will allow for direct faculty and student cohort interactions, and will allow for faculty-led, work-based capstone projects that simulate the cross-functional team dynamics common in the petroleum industry. This mirrors the current structure of the on-campus degree in that the MS students in the department are encouraged to complete a summative project, and this would serve in that role. Further, the Department of Geology & Geophysics offers graduate course credit for an experience like this already, associated with the project work of the Imperial Barrel Award team that participates in the American Association of Petroleum Geologists annual international competition. Our plan is to scale this existing course to serve significantly more students both online and on campus, and this will be covered under a separate course proposal within the coming year. The final examination for the MS degree will be embedded in this course. The capstone experiences will distinguish our programs from those offered by competitors. This program is of equal or better quality than our competitors, with a reasonable cost and the flexibility of an online and part-time program for working professionals at a level of rigor equivalent to our on-campus programs. The coordinating faculty for the Petroleum Geosciences program in Geology and Geophysics distance programs will be the chairs of all masters committees in this program, with other program faculty serving as advisory committee members.

**Financial Implications:**

To support this program, the College of Geosciences sought and received TAMUS Board of Regents approval for a program fee which will enable the expanded teaching operations in an online format and the related course improvements, and new program features including the
capstone course that includes the short term on-campus residency. The program fee does not apply to the wholly on-campus versions of these programs. Other expenses covered partially by this proposed fee include expanded technical software which will be served at scale for these online programs and which requires site licenses and server use at a scale unique to this environment. The fee also partially pays for expanded services in student recruitment and retention, marketing, ongoing work in custom instructional design and media development for the online programs. Beyond these additional costs, TAMU has sufficient resources to initiate and maintain quality distance learning programs. Traditional funding sources and student fees ensure the excellence of electronically based courses and programs. A list of all student fees and explanations can be found at http://sbs.tamu.edu/.

University: Request for Authorization

I recommend adoption of the following program:

"Having complied with all of the requirements of the Texas Higher Education Coordinating Board, Texas A&M University is hereby authorized to offer the Masters of Science in Geology program by distance education, electronic to individuals (online delivery) effective Spring 2017.

The Texas A&M University System Office of Academic Affairs finds that the program offering aforementioned is within the role and scope and capacity of the institution and will benefit students.

Texas A&M University certifies that the proposed distance delivery of the aforementioned program meets the criteria under Texas Administrative Code Chapter 4 Subchapter P regarding quality of the curriculum and courses; delivery of instruction; evaluation, training, supervision, and support of faculty; financial resources; and admission of the support services for students. The program is within the role and mission of the institution and in the Table of Program. The institution will comply with the standards and criteria of the Commission on Colleges of the Southern Association of Colleges and Schools and will adhere to criteria outlined in the Principles of Good Practice for Degree and Certificate Programs and Courses Offered Through Distance Education."

Approval – University:

Karan L. Watson  
Provost and Executive Vice President for Academic Affairs

Authorization: System

Approval – Texas A&M University System:

James R. Hallmark, Ph.D.  
Vice Chancellor for Academic Affairs
Texas Higher Education Coordinating Board

Certification Form for Electronically Delivered and Off-Campus Education Programs
April 2014

Directions: For all new programs that are to be delivered electronic-to-individuals (i.e., online), electronic-to-groups, or off-campus face-to-face, a signed pdf of this form must accompany email notification of the new program to Dr. Andrew B. Lofters (andrew.lofters@thech.state.tx.us). (Institutions offering distance education programs for the first time -- i.e. have never offered a distance education program, such as newly created institutions -- must complete and submit an Institutional Plan for Distance Education).

Please fill out the Administrative Information below and then sign and date on page 4.

Administrative Information

1. Institution: Texas A&M University

2. Program Name – Masters of Science in Geology

3. Program CIP Code: 40.0601.00

4. Program Delivery – Distance Education/Online

5. Proposed Implementation Date – Spring 2017

6. Contact Person – Provide contact information for the person who can answer specific questions about the program.

Name: Dr. Mark Everett

Title: Associate Department Head for Graduate Programs and Professor, Department of Geology & Geophysics

E-mail: m-everett1@tamu.edu

Phone: (979) 862-2129
Based on *Principles of Good Practice for Academic Degree and Certificate Programs and Credit Courses Offered Electronically.*

**CURRICULUM AND INSTRUCTION**

- Each program or course results in learning outcomes appropriate to the rigor and breadth of the degree or certificate awarded.
- A degree or certificate program or course offered electronically is coherent and complete.
- The program or course provides for appropriate interaction between faculty and students and among students.
- Qualified faculty provide appropriate oversight of the program or course that is offered electronically.
- Academic standards for all programs or courses offered electronically will be the same as those for programs or courses delivered by other means at the institution where the program or course originates.
- Student learning in programs or courses delivered electronically should be comparable to student learning in programs offered at the campus where the programs or courses originate.

**INSTITUTIONAL CONTEXT AND COMMITMENT**

**Role and Mission**

- The program or course is consistent with the institution's role and mission.
- Review and approval processes ensure the appropriateness of the technology being used to meet the objectives of the program or course.

**Students and Student Services**

- Program or course announcements and electronic catalog entries provide appropriate information.
- Students shall be provided with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technological competence and skills, technical equipment requirements, availability of academic support services and financial aid resources, and costs and payment policies.
- Enrolled students have reasonable and adequate access to the range of student services and student rights appropriate to support their learning.
• The institution has admission/acceptance criteria in place to assess the extent to which a student has the background, knowledge and technical skills required to undertake the program or course.

• Advertising, recruiting, and admissions materials clearly and accurately represent the program or course and the services available.

**Faculty Support**

• The program or course provides faculty support services specifically related to teaching via an electronic system.

• The institution assures appropriate training for faculty who teach via the use of technology.

• The institution provides adequate equipment, software, and communications access to faculty to support interaction with students, institutions, and other faculty.

**Resources for Learning**

• The institution ensures that appropriate learning resources are available to students.

• The institution evaluates the adequacy of, and the cost to students for, access to learning resources and documents the use of electronic resources.

**Commitment to Support**

• Policies for faculty evaluation include appropriate recognition of teaching and scholarly activities related to programs or courses offered electronically.

• The institution demonstrates a commitment to ongoing support, both financial and technical, and to continuation of the program or course for a period of time reasonable and sufficient for students to complete the course or program.

**EVALUATION AND ASSESSMENT**

• The institution evaluates the program’s or course’s educational effectiveness, including assessments of student learning outcomes, student retention, and student and faculty satisfaction.

• At the completion of the program or course, the institution provides for assessment and documentation of student achievement in each course.
On behalf of Texas A&M University (institution), I assert that the preceding Coordinating Board criteria have been met for all courses associated with this program that will be delivered electronically and off-campus face-to-face.

__________________________________________  _______________________
Chief Academic Officer or President  Date

Name: ________________________________

Title: ________________________________

THECB 4/2014
Texas A&M University
New Certificate, Bachelors, Masters, or Doctoral Program
Undergraduate • Graduate • Professional
• Proposal Checklist •

Program request type: □ Undergraduate ☒ Graduate □ First Professional (e.g., DVM, JD, MB, etc.)
Requested by the Department or Unit of: Dept. of Geology & Geophysics

Program Type, Level, Designation, Title, Description, Hours
Program Type: □ Certificate Program ☒ Degree Program
Program Level: □ UG Certificate □ Grad Certificate □ Bachelor □ Master □ Doctoral □ Professional
Degree Designation (i.e., BS, BA, MA, MS, MEng, Med, PhD, EdD, etc.) MS
Title of proposed program: Master of Science in Geophysics
Proposed CIP Code (if known): 40.0603.00

Brief program description (provide a catalog description for undergraduate and graduate certificates):
Geophysics includes all areas of scientific inquiry that deal with the physical state of the planets and with the dynamic physical processes that act on and within the planets. An intensive two-year program of study at the master's level is available for students who wish to enter the petroleum industry.

Minimum program semester credit hours (SCH) Certificates - 12 hours* Bachelor's - 120 hours Masters - 30 hours

Proposed program hours:

*12 hours minimum to appear on transcript

Certificate Programs □ Embedded Students take coursework that will result in a degree and certificate being awarded at the same time.
□ Standalone Non-degree seeking students take coursework to earn a certificate only (no degrees are awarded).

Off-Campus or Distance Delivery
% of Program a student can take off-campus or through Distance Education

Program Start Date SACSCOC Approval** When Provost needs to inform SACSCOC
□ 25% Notification Only 6 months before first day of program
□ 50% Approval Required 6 months before first day of program
□ 80% Approval Required 6 months before first day of program
☒ 100% Jan 2017 online - already operating on campus Approval Required 6 months before first day of program

**Notification letter arranged through the Vice Provost for Academic Affairs and sent by TAMU President.

Program Delivery Mode

□ On-campus
□ Broadcast / TTVN
□ Specific off-campus location***
☒ Distance Education / Internet ☒ In-State ☒ Out-of-State Start Date Jan 2017
□ Out-of-Country Will this program be offered at another institution? ☐ Yes ☐ No
If yes, contact the Vice Provost for Academic Affairs for additional reporting requirements.

***Is this an approved SACSCOC location? ☐ Yes ☐ No
If no, a program prospectus must be sent to SACSCOC.
Approved locations as of March 2012: TAMU-Collegeville, TAMU-Qatar, University Center-The Woodlands, CityCentre-Houston, Dubai and Saud Arabia.

Program Funding
His program funding been finalized at the department or college level? ☒ Yes ☐ No
If no, explain or attach budget: See attached approved BOR program fee request

Will new costs for the first five years of the program be under $2 million? ☒ Yes ☐ No
If new costs exceed $2 million, coordinating board approval is required.

Page 1 Revised 04.11.2014
Submitted by (Contact Person):

Eric Riggs
Name
Associate Dean
Title

onriggs@unu.edu
Email
979-845-3651
Phone

Certification Statement
By signing below, the Dean of the College certifies the proposed program complies with coordinating board standards. If the program is delivered through Distance Education, the Dean of the College certifies that they are following the Principles of Good Practice for Academic Degree and Certificate Programs and Credit Courses Offered Electronically.

Use additional signature lines if program is between three or more departments or colleges.

Signature, Department Head or Interdisciplinary Program Chair
5/7/16

Program Chair
Michael Pope
Typed or Printed Name

Chair, College Review Committee
5/1/2016

Dean of College
5/1/2016

Chair, University Curriculum Committee or Graduate Council
Date

Additional Approvals Required: Faculty Senate and President.
DISTANCE EDUCATION
ELECTRONIC TO INDIVIDUALS (ONLINE DELIVERY) APPROVAL FORM

Submitted by:

☐ Texas A&M University
☐ Texas A&M University–Central Texas
☐ Texas A&M University–Commerce
☐ Texas A&M University–Corpus Christi
☐ Texas A&M University–Kingsville
☐ Texas A&M University–San Antonio
☐ Texas A&M University–Texarkana
☐ Texas A&M International University
☐ Prairie View A&M University
☐ Tarleton State University
☐ West Texas A&M University
☐ Texas A&M Health Science Center

Distance Education: Electronic to Individuals (online Delivery) Authorization Request

Please list the proposed degree and CIP code:

Degree: Master of Science in Geophysics

CIP Code: 40.0603.00

When is the effective date of the proposed program?

Effective Date: Spring 2017

**Please note:** This proposed program cannot be advertised as an online delivered degree program until the A&M System Office of Academic Affairs has approved it and the Texas Higher Education Coordinating Board has been notified.

Summary of Proposal (Include Background Information and Rationale for the change.)

The Department of Geology & Geophysics is dedicated to advancing scientific understanding of the Earth, its fluids, and their history and future, preparing the next generation of earth scientists, and using our expertise to serve the broader scientific, government, and industry communities. Our most fundamental mission is to educate students at all levels. To that end we offer a full range of degree programs at the undergraduate and graduate levels in geology and geophysics.

The department currently has thirty-two faculty members, including three joint appointments from other departments, and four post-doctoral researchers. We also have four professors of practice, who previously worked in industry and are now teaching practical application of their knowledge. Our faculty’s diverse research activities include: basin analysis, environmental geology, geophysics, geochemistry, geodynamics, hydrology, mineralogy and petrology, paleontology, seismology, sedimentology and stratigraphy, petroleum geology, structural geology, tectonophysics, and more.
Degree-plan tracks exist within the departments and interdisciplinary degree programs of the College of Geosciences which lead to professionally-oriented, technical non-thesis MS degree options for on-campus students. Three of these have a focus on Petroleum Geoscience, and much of the coursework is already included in the currently available and active Petroleum Certificate which is currently available to on-campus students in all of the relevant degree programs. These span the departments of Geology & Geophysics and Geography, and are based in the current Master of Geology or Geophysics – options with a shared core curriculum – and the Master of Geoscience with an emphasis on coursework in petroleum-related Geographic Information Science and Technology (GIST). All of these are non-thesis, 36 credit-hour MS degrees. In order to address overwhelming demand from industry and clearly evident student interest, as well as reach new groups of students and working professionals domestically and internationally, we are taking three allied programs online together as a group, but are seeking approval of each program independently, submitted together as a package.

The Masters of Science in Geophysics, non-thesis option, is a degree requiring 36 credit hours. The online version is planned to be entirely online except for the final 6 credit hours of this program. The final 6 credit hours comprise a single capstone course that will be largely online but which will have a mandatory campus residence portion to foster collaborative group exercises and simulate more realistic industry conditions and settings. This unique, on-campus residency will allow for direct faculty and student cohort interactions, and will allow for faculty-led, work-based capstone projects that simulate the cross-functional team dynamics common in the petroleum industry. This mirrors the current structure of the on-campus degree in that the MS students in the department are encouraged to complete a summative project, and this would serve in that role. Further, the Department of Geology & Geophysics offers graduate course credit for an experience like this already, associated with the project work of the Imperial Barrel Award team that participates in the American Association of Petroleum Geologists annual international competition. Our plan is to scale this existing course to serve significantly more students both online and on campus, and this will be covered under a separate course proposal within the coming year. The final examination for the MS degree will be embedded in this course. The capstone experiences will distinguish our programs from those offered by competitors. This program is of equal or better quality than our competitors, with a reasonable cost and the flexibility of an online and part-time program for working professionals at a level of rigor equivalent to our on-campus programs. The coordinating faculty for the Petroleum Geosciences program in Geology and Geophysics distance programs will be the chairs of all masters committees in this program, with other program faculty serving as advisory committee members.

Financial Implications:

To support this program, the College of Geosciences sought and received TAMUS Board of Regents approval for a program fee which will enable the expanded teaching operations in an
online format and the related course improvements, and new program features including the capstone course that includes the short term on-campus residency. The program fee does not apply to the wholly on-campus versions of these programs. Other expenses covered partially by this fee include expanded technical software which will be served at scale for these online programs and which requires site licenses and server use at a scale unique to this environment. The fee also partially pays for expanded services in student recruitment and retention, marketing, ongoing work in custom instructional design and media development for the online programs. Beyond these additional costs, TAMU has sufficient resources to initiate and maintain quality distance learning programs. Traditional funding sources and student fees ensure the excellence of electronically based courses and programs. A list of all student fees and explanations can be found at [http://sbs.tamu.edu/](http://sbs.tamu.edu/).

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**University: Request for Authorization**

I recommend adoption of the following program:

"Having complied with all of the requirements of the Texas Higher Education Coordinating Board, Texas A&M University is hereby authorized to offer the Masters of Science in Geophysics program by distance education, electronic to individuals (online delivery) effective Spring 2017.

The Texas A&M University System Office of Academic Affairs finds that the program offering aforementioned is within the role and scope and capacity of the institution and will benefit students.

Texas A&M University certifies that the proposed distance delivery of the aforementioned program meets the criteria under Texas Administrative Code Chapter 4 Subchapter P regarding quality of the curriculum and courses; delivery of instruction; evaluation, training, supervision, and support of faculty; financial resources; and admission of the support services for students. The program is within the role and mission of the institution and in the Table of Program. The institution will comply with the standards and criteria of the Commission on Colleges of the Southern Association of Colleges and Schools and will adhere to criteria outlined in the Principles of Good Practice for Degree and Certificate Programs and Courses Offered Through Distance Education."

Approval – University:

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Karan L. Watson  
Provost and Executive Vice President for Academic Affairs  

Date

Authorization: System

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Approval – Texas A&M University System:

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James R. Hallmark, Ph.D.  
Vice Chancellor for Academic Affairs  

Date
Texas Higher Education Coordinating Board

Certification Form for Electronically Delivered and Off-Campus Education Programs
April 2014

Directions: For all new programs that are to be delivered electronic-to-individuals (i.e., online), electronic-to-groups, or off-campus face-to-face, a signed pdf of this form must accompany email notification of the new program to Dr. Andrew B. Lofers (andrew.lofters@thech.state.tx.us). (Institutions offering distance education programs for the first time – i.e. have never offered a distance education program, such as newly created institutions -- must complete and submit an Institutional Plan for Distance Education).

Please fill out the Administrative Information below and then sign and date on page 4.

Administrative Information

1. Institution: Texas A&M University

2. Program Name – Masters of Science in Geophysics

3. Program CIP Code: 40.0603.00

4. Program Delivery – Distance Education/Online

5. Proposed Implementation Date – Spring 2017

6. Contact Person – Provide contact information for the person who can answer specific questions about the program.

Name: Dr. Mark Everett

Title: Associate Department Head for Graduate Programs and Professor, Department of Geology & Geophysics

E-mail: m-everett1@tamu.edu

Phone: (979) 862-2129
Based on *Principles of Good Practice for Academic Degree and Certificate Programs and Credit Courses Offered Electronically.*

**CURRICULUM AND INSTRUCTION**

- Each program or course results in learning outcomes appropriate to the rigor and breadth of the degree or certificate awarded.
- A degree or certificate program or course offered electronically is coherent and complete.
- The program or course provides for appropriate interaction between faculty and students and among students.
- Qualified faculty provide appropriate oversight of the program or course that is offered electronically.
- Academic standards for all programs or courses offered electronically will be the same as those for programs or courses delivered by other means at the institution where the program or course originates.
- Student learning in programs or courses delivered electronically should be comparable to student learning in programs offered at the campus where the programs or courses originate.

**INSTITUTIONAL CONTEXT AND COMMITMENT**

**Role and Mission**

- The program or course is consistent with the institution's role and mission.
- Review and approval processes ensure the appropriateness of the technology being used to meet the objectives of the program or course.

**Students and Student Services**

- Program or course announcements and electronic catalog entries provide appropriate information.
- Students shall be provided with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technological competence and skills, technical equipment requirements, availability of academic support services and financial aid resources, and costs and payment policies.
- Enrolled students have reasonable and adequate access to the range of student services and student rights appropriate to support their learning.
• The institution has admission/acceptance criteria in place to assess the extent to which a student has the background, knowledge and technical skills required to undertake the program or course.

• Advertising, recruiting, and admissions materials clearly and accurately represent the program or course and the services available.

Faculty Support

• The program or course provides faculty support services specifically related to teaching via an electronic system.

• The institution assures appropriate training for faculty who teach via the use of technology.

• The institution provides adequate equipment, software, and communications access to faculty to support interaction with students, institutions, and other faculty.

Resources for Learning

• The institution ensures that appropriate learning resources are available to students.

• The institution evaluates the adequacy of, and the cost to students for, access to learning resources and documents the use of electronic resources.

Commitment to Support

• Policies for faculty evaluation include appropriate recognition of teaching and scholarly activities related to programs or courses offered electronically.

• The institution demonstrates a commitment to ongoing support, both financial and technical, and to continuation of the program or course for a period of time reasonable and sufficient for students to complete the course or program.

EVALUATION AND ASSESSMENT

• The institution evaluates the program’s or course’s educational effectiveness, including assessments of student learning outcomes, student retention, and student and faculty satisfaction.

• At the completion of the program or course, the institution provides for assessment and documentation of student achievement in each course.
On behalf of Texas A&M University (Institution), I assert that the preceding Coordinating Board criteria have been met for all courses associated with this program that will be delivered electronically and off-campus face-to-face.

__________________________  ____________________________
Chief Academic Officer or President                        Date

Name: ____________________________

Title: ____________________________

THECB 4/2014