MEMORANDUM

TO: Dr. Mark A. Hussey, Interim President
FROM: Jim Woosley, Speaker
SUBJECT: Graduate Council (FS. 32.90)

The Faculty Senate submits for your approval the item from the Graduate Council at its regular meeting on December 8, 2014. Attached is a copy of the material sent to our Senators.

Special Consideration
Texas A&M Energy Institute
Certificate in Energy
Proposal for Certificate Program/Grad Certificate

cc: Karan Watson
    Christine Stanley
    Michael Benedik
    Sandra Williams
    M. Katherine Banks

FACULTY SENATE AGENDA ITEM REVIEW
This item has been reviewed by the Office of the Provost (OP). Below are recommended action(s): RE: FS. 32.90

<table>
<thead>
<tr>
<th>Presidential Action</th>
<th>OP Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Recommend Approval</td>
<td>Hold for Further Review</td>
</tr>
<tr>
<td></td>
<td>Hold Released</td>
</tr>
<tr>
<td></td>
<td>System Review/Submission</td>
</tr>
<tr>
<td></td>
<td>BOR Approval</td>
</tr>
<tr>
<td></td>
<td>THECB Approval/Notification</td>
</tr>
<tr>
<td></td>
<td>SACSCOC Approval/Notification</td>
</tr>
</tbody>
</table>

Approved: ________________________
Reviewed: _________________________

Mark A. Hussey
Date: 12/17/14

Mark A. Hussey
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: Texas A&M Energy Institute

**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, MAg, MED, PhD, EdD, etc.): Certificate in Energy
Title of proposed program: Certificate in Energy
Proposed CIP Code (if known): 30.9999.04
Brief program description (provide a catalog description for undergraduate and graduate certificates):
The “Certificate in Energy” program, through 10 modules of the “Professional Master of Science in Energy” program, is designed to introduce students/professionals to fundamentals and state of the art advances in the multiple interdisciplinary facets of energy.

Minimum program semester credit hours (SCH) Certificates - 12 hours* Bachelors - 120 hours Masters - 30 hours
Proposed program hours: 15
*12 hours minimum to appear on transcript

Certificate Programs □ Embedded ☑ Standalone

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

<table>
<thead>
<tr>
<th>Distance Education</th>
<th>Program Start Date</th>
<th>SACSCOC Approval**</th>
<th>When Provost needs to inform SACSCOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ 25%</td>
<td></td>
<td>Notification Only</td>
<td>6 months before first day of program</td>
</tr>
<tr>
<td>□ 50%</td>
<td></td>
<td>Approval Required</td>
<td>6 months before first day of program</td>
</tr>
<tr>
<td>□ 80%</td>
<td></td>
<td>Approval Required</td>
<td>6 months before first day of program</td>
</tr>
<tr>
<td>□ 100%</td>
<td></td>
<td>Approval Required</td>
<td>6 months before first day of program</td>
</tr>
</tbody>
</table>

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

**Program Delivery Mode**

<table>
<thead>
<tr>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas A&amp;M University, College Station Campus</td>
</tr>
</tbody>
</table>

☑ On-campus
□ Broadcast / TTVN
□ Specific off-campus location***
☑ Distance Education / Internet ☑ In-State ☑ Out-of-State Start Date Fall 2015
□ 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: ______

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

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):

Dr. Costas N. Georgiades
Name
Interim Director of Texas A&M Energy Institute
Title

gorghiades@tamu.edu
Email
979-845-7408
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
Dr. Costas N. Georgiades

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.


Signature, Department Head or Interdisciplinary Program Chair (if joint program)

Typed or Printed Name
Date

Chair, College Review Committee
Date

Dean of College
Date

Chair, University Curriculum Committee or Graduate Council
Date


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Revised 04.11.2014
New Program Request Form for Certificate Programs

Directions: An institution shall use this form to propose a new bachelor’s or master’s degree program. In completing the form, the institution should refer to the document Standards for Bachelor’s and Master’s Programs, which prescribes specific requirements for new degree programs. Note: This form requires signatures of (1) the Chief Executive Officer, certifying adequacy of funding for the new program; (2) a member of the Board of Regents (or designee), certifying Board approval, and (3) if applicable, a member of the Board of Regents or (designee), certifying that criteria have been met for staff-level approval. NOTE: Preliminary authority is required for all engineering programs. An institution that does not have preliminary authority for a proposed engineering program shall submit a separate request for preliminary authority prior to submitting the degree program request form. That request shall address criteria set in Coordinating Board rules Section 5.24 (a).

Administrative Information

1. Institution: Texas A&M University

2. Program Name — Show how the program would appear on the Coordinating Board’s program inventory (e.g., Bachelor of Business Administration degree with a major in Accounting):

   Certificate in Energy

3. Proposed CIP Code: 30.9999.04

4. Brief Program Description — Describe the program and the educational objectives:

   The “Certificate in Energy” program is designed to introduce students/professionals to the multiple interdisciplinary facets of energy that range from overview of energy technologies (fossil-based, renewable, and non-fossil based), to multi-scale energy systems engineering methods, to materials for energy, to economics and finance, to business, to entrepreneurship, to law, and their interactions.

   The educational objectives of the “Certificate in Energy” program are:

   1. Educate students/professionals with the broad spectrum of important energy issues, energy technologies based on fossil and non-fossil resources, sustainable energy technologies, and their interactions with energy economics, entrepreneurship, law, and policy.
   2. Enhance the quantitative skills and knowledge of students/professionals for the analysis, simulation, and optimization of energy systems, and prepare them for practical applications.

   Number of Semester Credit Hours Required 15

5. Administrative Unit — Identify where the program would fit within the organizational structure of the university (e.g., The Department of Electrical Engineering within the College of Engineering):

   Texas A&M Energy Institute

Revised 01.14.2014
New Program Request Form for  
Certificate Programs, Bachelor’s and Master’s Degrees  
Page 2

6. Proposed Implementation Date – Report the first semester and year that students would enter the program:
   Fall 2015

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

   Name: Dr. Costas N. Georgiades
   Title: Interim Director, Texas A&M Energy Institute
   E-mail: georghiades@tamu.edu
   Phone: 979-845-7408

   AND

   Name: Dr. Christodoulos A. Floudas
   Title: Director of Texas A&M Energy Institute (Effective: February 1, 2015)
   E-mail: floudas@princeton.edu, floudas@tamu.edu
   Phone: 609-258-4595

Program Information

I. Need

Note: Complete I.A and I.B only if preliminary authority for the program was granted more than four years ago. This includes programs for which the institution was granted broad preliminary authority for the discipline.

A. Job Market Need – Provide short- and long-term evidence of the need for graduates in the job market.
   Not Applicable; preliminary approval was not granted more than four years ago.

B. Student Demand – Provide short- and long-term evidence of demand for the program.
   Not Applicable; preliminary approval was not granted more than four years ago.

Revised 01.14.2014
C. **Enrollment Projections** – Use this table to show the estimated cumulative headcount and full-time student equivalent (FTSE) enrollment for the first five years of the program. (*Include majors only and consider attrition and graduation.*)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headcount</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>FTSE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

II. **Quality**

A. **Certificate and Degree Requirements** – Use this table to show the certificate and degree requirements of the program. (*Modify the table as needed; if necessary, replicate the table for more than one option.*)

<table>
<thead>
<tr>
<th>Category</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education Core Curriculum (bachelor's degree only)</td>
<td></td>
</tr>
<tr>
<td>Required Courses (Modules) One Module 1 is equal to 1.5 SCH</td>
<td>10.5</td>
</tr>
<tr>
<td>Prescribed Electives (Module) One Module 1 is equal to 1.5 SCH</td>
<td>4.5</td>
</tr>
<tr>
<td>Free Electives</td>
<td></td>
</tr>
<tr>
<td>Other (Specify, e.g., internships, clinical work) (if not included above)</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>15</td>
</tr>
</tbody>
</table>

B. **Curriculum** – Use these tables to identify the required courses and prescribed electives of the program, and curriculum as it will appear in the undergraduate and graduate catalog. Note with an asterisk (*) courses that would be added if the program is approved. (*Add and delete rows as needed. If applicable, replicate the tables for different tracks/options as shown in the undergraduate catalog.*)

<table>
<thead>
<tr>
<th>Prefix &amp; Number</th>
<th>Required Courses</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICPE-601</td>
<td>Environmental Issues of Energy Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-602</td>
<td>Reservoir Characterization and Modeling</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-603</td>
<td>Bioenergy</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-604</td>
<td>Energy Systems Engineering I</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-607</td>
<td>Energy Accounting</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-608</td>
<td>Beyond Science and Technology: The Role of Policy in the Future of Energy in the US</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-609</td>
<td>Introduction to U.S. Energy Law &amp; Policy</td>
<td>1.5</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Prefix &amp; Number</th>
<th>Prescribed Elective Courses</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICPE-605</td>
<td>Energy Systems Engineering II</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-606</td>
<td>Introduction to Optimization</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-610</td>
<td>The Global Energy Future</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-611</td>
<td>Economics of Energy</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-612</td>
<td>Entrepreneurship in Energy</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-613</td>
<td>Natural and Shale Gas Monetization: Technologies, Fundamentals, Economics, and Applications</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-614</td>
<td>CO2 Sequestration</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-615</td>
<td>Smart Grid Fundamentals</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-616</td>
<td>Multi-functional Materials for Energy Conversion</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-617</td>
<td>Gas Separations for Energy: Fundamentals, Applications and New Directions</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-618</td>
<td>Carbon Capture, Utilization, and Storage</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-619</td>
<td>Nanomaterials Engineering and Energy Storage</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-620</td>
<td>Thermoelectric Materials and Devices</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-621</td>
<td>Thermoelectrics: Fundamentals of Electronic and Thermal Transport</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-622</td>
<td>Energy Efficiency in Buildings</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-623</td>
<td>Water-Energy-Food Nexus</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-624</td>
<td>Energy-Water Nexus</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-625</td>
<td>Integrated Risk Management for Exploration and Production Projects</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-626</td>
<td>Safety in Energy Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-627</td>
<td>Interfacial Phenomena of Energy Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>ICPE-628</td>
<td>Multi-physics Geomechanics for Energy Applications</td>
<td>1.5</td>
</tr>
</tbody>
</table>

C. Faculty – Use these tables to provide information about Core and Support faculty. Add an asterisk (*) before the name of the individual who will have direct administrative responsibilities for the program. *(Add and delete rows as needed.)*

<table>
<thead>
<tr>
<th>Faculty Name &amp; Rank</th>
<th>Highest Degree &amp; Awarding Institution</th>
<th>Module Assigned</th>
<th>%Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akbulut, Mustafa</td>
<td>PhD Chemical Engineering; UCSB</td>
<td>ICPE-601 &amp; 627</td>
<td>10</td>
</tr>
<tr>
<td>Datta-Gupta, Akhil</td>
<td>PhD Petroleum Engineering; UT Austin</td>
<td>ICPE-602</td>
<td>5</td>
</tr>
<tr>
<td>King, Michael</td>
<td>PhD Physics; Syracuse University</td>
<td>ICPE-602</td>
<td>5</td>
</tr>
<tr>
<td>Holtzapple, Mark</td>
<td>PhD Chemical Engineering; U. Pennsylvania</td>
<td>ICPE-603</td>
<td>5</td>
</tr>
<tr>
<td>Capareda, Sergio</td>
<td>PhD Agricultural Engineering; Texas A&amp;M</td>
<td>ICPE-603</td>
<td>5</td>
</tr>
<tr>
<td>Floudas, Christodoulos</td>
<td>PHD Chemical Engineering; Carnegie Mellon</td>
<td>ICPE-604 &amp; 605</td>
<td>10</td>
</tr>
<tr>
<td>Pistikopoulos, Efstratios</td>
<td>PhD Chemical Engineering; Carnegie Mellon</td>
<td>ICPE-604 &amp; 605</td>
<td>10</td>
</tr>
<tr>
<td>Butenko, Sergiy</td>
<td>PhD Industrial Engineering; U. Florida</td>
<td>ICPE-606</td>
<td>5</td>
</tr>
<tr>
<td>Deer, Shannon</td>
<td>MSC Finance; Texas A&amp;M</td>
<td>ICPE-607</td>
<td>5</td>
</tr>
<tr>
<td>Vedlitz, Arnold</td>
<td>PhD Political Science; U. Houston</td>
<td>ICPE-608</td>
<td>5</td>
</tr>
<tr>
<td>Warren, Gina</td>
<td>JD Law; Rutgers University</td>
<td>ICPE-609</td>
<td>5</td>
</tr>
</tbody>
</table>

Revised 01.14.2014
D. **Students** – Describe general recruitment efforts and admission requirements. How will students be accepted into the program? In accordance with the institution’s Uniform Recruitment and Retention Strategy, describe plans to recruit, retain, and graduate students from underrepresented groups for the program.

The “Certificate in Energy” program targets two broad categories. Category 1 consists of graduating seniors from diverse educational backgrounds (e.g., sciences, engineering, social sciences, business) and domestic and international institutions (e.g., US and Canada, Central and South America, Europe, Middle East, and Asia). Category 2 consists of recent graduates/professionals who have been in industry and/or government for less than 3-5-10+ years.

*We will aim for a diverse, dynamic, and high quality student body. To attain this goal, we will advertise the proposed innovative “Certificate in Energy” program through the Energy Institute website, departmental websites, colleges’ websites, and the University website. In addition, we will provide material and ask all the department heads to assist us in advertising the program on campus, as well as provide material to many universities in the US, South America, Europe, Middle East and Asia.*

Revised 01.14.2014
E. **Library** – Provide the library director’s assessment of library resources necessary for the program. Describe plans to build the library holdings to support the program.

*The library needs for the “Certificate in Energy” program are standard and do not require any special resources. Current library holdings are sufficient.*

F. **Facilities and Equipment** – Describe the availability and adequacy of facilities and equipment to support the program. Describe plans for facility and equipment improvements/additions.

*A few (i.e., 2-3) classrooms with capabilities for distance learning (e.g., video recording and conferencing) will be required for the program.*

G. **Accreditation** – If the discipline has a national accrediting body, describe plans to obtain accreditation or provide a rationale for not pursuing accreditation.

*No accreditation from a national accrediting body is needed.*

H. **Evaluation** – Describe the evaluation process that will be used to assess the quality and effectiveness of the new degree program.

The Advisory and Evaluation Committee, (A&EC) will consist of the Heads of departments or Deans who have faculty members participating in the courses of the (ICPE): Drs. Karim (Chemical Engineering), Hill (Petroleum Engineering), Searcy (Biological & Agricultural Engineering), Malave (Industrial & Systems Engineering), Benjamin (Accounting, Mays Business School), Crocker (Dean, The Bush School of Government and Public Policy), Moriss (Dean of Law School), Rosson (Agricultural Economics), Griffin (Management, Mays Business School), Giardino (Geology and Geophysics), Singh (Electrical & Computer Engineering), Bowersox (Aerospace Engineering), Karaman (Materials Science & Engineering), Patzecarpe (Mechanical Engineering), Wells (Architecture), Autenrieth (Civil Engineering). Annually, one of the Heads/Deans will be selected to serve as the Lead of the A&EC.

The Executive Committee will consist of the Vice President for Research, VPR, the Deans of the College of Agriculture & Life Sciences; College of Engineering; College of Geosciences; and College of Sciences, as well as External Assessors to be selected. Annually, one of the Deans/VPR will be selected to serve as the Lead of the Executive Committee.

The Texas A&M Energy Institute will develop an appropriate annual or biannual review process to evaluate the impact of the “Certificate in Energy” program. The review will include evaluations of graduate recruitment, retention, curriculum, research, and faculty teaching assessments. The annual or biannual review of the program will be conducted in a timely fashion to assure proper assessment of prior activities and appropriate feedback mechanism for improvement.
I. **Administration of Program** – Describe how the program will be administered. Where will the program be administered (i.e., department, college)?

*The program will be administered by the Texas A&M Energy Institute.*

III. Costs and Funding

**Five-Year Costs and Funding Sources** - Use this table to show five-year costs and sources of funding for the program.

<table>
<thead>
<tr>
<th>Personnel</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>$150,000 (honoraria for faculty)</td>
</tr>
<tr>
<td>Administration</td>
<td>$50,000</td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td>0</td>
</tr>
<tr>
<td>Other Personnel</td>
<td>0</td>
</tr>
<tr>
<td>Facilities, Equipment &amp; IT</td>
<td>$25,000</td>
</tr>
<tr>
<td>Supplies &amp; Materials</td>
<td>$25,000</td>
</tr>
<tr>
<td>Library</td>
<td>0</td>
</tr>
<tr>
<td>Other (seminars)</td>
<td>$25,000 (travel &amp; accommodation expenses for seminars)</td>
</tr>
</tbody>
</table>

**Total Five Year Costs** = $275,000

**Five year Funding/Income**

**Tuition and Program fee** = $20,000

- **Year 1 (5 students):** income from tuition and program fees = $100,000
- **Year 2 (10 students):** income from tuition and program fees = $200,000
- **Year 3 (15 students):** income from tuition and program fees = $300,000
- **Year 4 (20 students):** income from tuition and program fees = $400,000
- **Year 5 (20 students):** income from tuition and program fees = $400,000

**Total Five Year Income** = $1,400,000
Signature Page

1. **Adequacy of Funding** – The chief executive officer shall sign the following statement:

   *I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.*

   __________________________________________________________________________________________

   Chief Executive Officer                                                   Date

2. **Board of Regents or Designee Approval** – A member of the Board of Regents or designee shall sign the following statement:

   *On behalf of the Board of Regents, I approve the program.*

   __________________________________________________________________________________________

   Board of Regents (Designee)                                                  Date of Approval

3. **Board of Regents Certification of Criteria for Commissioner of Assistant Commissioner Approval** – For a program to be approved by the Commissioner or the Assistant Commissioner for Academic Affairs and Research, the Board of Regents or designee must certify that the new program meets the eight criteria under TAC Section 5.50 (b): The criteria stipulate that the program shall:

   1. be within the institution’s current Table of Programs;
   2. have a curriculum, faculty, resources, support services, and other components of a degree program that are comparable to those of high quality programs in the same or similar disciplines at other institutions;
   3. have sufficient clinical or in-service sites, if applicable, to support the program;
   4. be consistent with the standards of the Commission of Colleges of the Southern Association of Colleges and Schools and, if applicable, with the standards or discipline-specific accrediting agencies and licensing agencies;
   5. attract students on a long-term basis and produce graduates who would have opportunities for employment; or the program is appropriate for the development of a well-rounded array of basic baccalaureate degree programs at the institution;
   6. not unnecessarily duplicate existing programs at other institutions;
   7. not be dependent on future Special Item funding
   8. have new five-year costs that would not exceed $2 million.

   *On behalf of the Board of Regents, I certify that the new program meets the criteria specified under TAC Section 5.50 (b).*

   __________________________________________________________________________________________

   Board of Regents (Designee)                                                  Date

Revised 01.14.2014
November 7, 2014

Professor Christodoulos A. Floudas
Stephen C. Macaleer ‘63 Professor in Engineering and Applied Science
Professor of Chemical and Biological Engineering Department of Chemical and Biological Engineering
Princeton University
Princeton, NJ 08544

Dear Chris,

Thank you for providing the proposal of the Texas A&M Energy Institute for the (2) educational initiatives: (i) a "Professional Master of Science in Energy" and (ii) a "Certificate in Energy".

I would like to state that (a) I approve the initiatives, and (b) I have no objection to the proposal.

Sincerely Yours,

M. Nazmul Karim
Professor, Department Head
Holder of the T. Michael O’Connor Chair II
November 7, 2014

Professor Christodoulou A. Floudas

Stephen C. Macaleer ’63 Professor in Engineering and Applied Science
Professor of Chemical and Biological Engineering
Department of Chemical and Biological Engineering
Princeton University
Princeton, NJ 08544

Dear Chris,

Thank you for providing the proposal of the Texas A&M Engineering Institute for the two educational initiatives you are planning: (i) a “Professional Master of Science in Energy” and (ii) a “Certificate in Energy.”

I strongly support these two initiatives and believe that both will bring a much needed focal point for many of the energy related activities we have on campus and provide our students with much needed programs to further their careers. I have no objection whatsoever to the proposal and wish you every success in moving this forward for approval.

Please let me know what I can do to further assist your endeavors in this critically important area. I look forward to working with you.

Sincerely,

C. Parr Rosson, III
Professor and Department Head

600 John Kimbrough Blvd., Suite 309
2124 TAMU
College Station, Texas 77843-2124

Tel. 979.864.2116
Fax. 979.862.1583
http://agecon.tamu.edu
November 7, 2014

Professor Christodoulos A. Floudas
Stephen C. Macaleer '63 Professor in Engineering and Applied Science
Professor of Chemical and Biological Engineering
Department of Chemical and Biological Engineering
Princeton University
Princeton, NJ 08544

Dear Dr. Floudas:

Thank you for providing the proposal of the Texas A&M Energy Institute for the (2) educational initiatives: (i) a “Professional Master of Science in Energy” and (ii) a “Certificate in Energy”.

I would like to state that (a) I approve the initiatives, and (b) I have no objection to the proposal.

Regards,

Robin Autenrieth, Ph.D., P.E.
Department Head and
A.P. & Florence Wiley Professor III
Zachry Department of Civil Engineering
Texas A&M University
November 10, 2014

Professor Christodoulos A. Floudas
Stephen C. Macaleer '63 Professor in Engineering and Applies Science
Professor of Chemical and Biological Engineering
Department of Chemical and Biological Engineering
Princeton University
Princeton, NJ 08544

Dear Chris,

Thank you for providing the proposal of the Texas A&M Energy Institute for the (2) educational initiatives: (i) a "Professional Master of Science in Energy" and (ii) a "Certificate in Energy".

I would like to state that (a) I approve the initiatives, and (b) I have no objection to the proposal.

Sincerely Yours,

[Signature]

Ibrahim Karaman
Chevron Professor and Head
Department of Materials Science and Engineering
Texas A&M University
November 11, 2014

Professor Christodoulos A. Floudas
Stephen C. Macaleer ’63 Professor in Engineering and Applied Science
Professor of Chemical and Biological Engineering
Department of Chemical and Biological Engineering
Princeton University
Princeton, NJ 08544

Dear Chris:

Thank you for providing the proposal of the Texas A&M Institute for the (2) educational initiatives: (i) a “Professional Master of Science in Energy” and (ii) a “Certificate in Energy”.

I would like to state that (a) I approve the initiatives, and (b) I have no objection to the proposal.

Sincerely Yours,

James Benjamin, Head
Department of Accounting
November 10, 2014

Professor Christodoulouso A. Floudas
Stephen C. Macaleer '63 Professor in Engineering and Applies Science
Professor of Chemical and Biological Engineering
Department of Chemical and Biological Engineering
Princeton University
Princeton, NJ 08544

Dear Chris,

Thank you for providing the proposal of the Texas A&M Energy Institute for the (2) educational initiatives: (i) a “Professional Master of Science in Energy” and (ii) a “Certificate in Energy”.

I would like to state that (a) I approve the initiatives, and (b) I have no objection to the proposal.

Sincerely Yours,

\[Signature\]

Ibrahim Karaman
Chevron Professor and Head
Department of Materials Science and Engineering
Texas A&M University
December 5, 2014

Professor Christodoulou A. Floudas
Stephen C. Macaleer '63 Professor in Engineering and Applied Science
Professor of Chemical and Biological Engineering
Department of Chemical and Biological Engineering
Princeton University
Princeton, NJ 08544

Dear Chris,

Thank you for providing the proposal of the Texas A&M Energy Institute for the (2) educational initiatives: (i) a “Professional Master of Science in Energy” and (ii) a “Certificate in Energy”.

I would like to state that (a) I approve the initiatives, and (b) I have no objection to the proposal.

Sincerely Yours,

[Handwritten signature]

CÉSAR O. MALAVE
Industrial and Systems Engineering
December 5, 2014

Professor Christodoulouos A. Floudas  
Stephen C. Macaleer ’63 Professor in Engineering and Applied Science  
Professor of Chemical and Biological Engineering  
Department of Chemical and Biological Engineering  
Princeton University  
Princeton, NJ 08544  

Dear Chris,

Thank you for providing the proposal of the Texas A&M Energy Institute for the (2) educational initiatives: (i) a “Professional Master of Science in Energy” and (ii) a “Certificate in Energy”.

I would like to state that (a) I approve the initiatives, and (b) I have no objection to the proposal.

Sincerely Yours,

[Signature]

Ricky Griffin  
Interim Dean  
Owen Graduate School
December 5, 2014

Professor Christodoulos A. Floudas
Stephen C. Macaleer ’63 Professor in Engineering and Applied Science
Professor of Chemical and Biological Engineering
Department of Chemical and Biological Engineering
Princeton University
Princeton, NJ 08544

Dear Chris,

Thank you for providing the proposal of the Texas A&M Energy Institute for the (2) educational initiatives: (i) a “Professional Master of Science in Energy” and (ii) a “Certificate in Energy”.

I would like to state that (a) I approve the initiatives, and (b) I have no objection to the proposal.

Sincerely Yours,

Ricky W. Griffin
Interim Dean, Mays Business School
December 8, 2014

Professor Christodoulos A. Floudas
Stephen C. Macaleer ’63 Professor in Engineering and Applied Science
Professor of Chemical and Biological Engineering
Department of Chemical and Biological Engineering
Princeton University
Princeton, NJ 08544

Dear Chris:

Thank you for providing the proposal of the Texas A&M Energy Institute for the (2) educational initiatives: (i) a “Professional Master of Science in Energy” and (ii) a “certificate in Energy”.

I would like to state that (a) I approve the initiatives, and (b) I have no objection to the proposal.

Sincerely,

[Signature]

Dan Hill
Department Head
Noble Endowed Chair