Agenda
1. **Approval of April 2014 Minutes**

2. **Discussion Items**
   a. Vice Chair – Dr. Mark Zoran
   b. Graduate Faculty Appointments

3. **New Course Requests:**
   a. ANSC 636  Texas Panhandle Beef Production Tour
   b. INTA 635  Great Famines, War and Humanitarian Assistance
   c. NRSC 616  Advanced Developmental Neurotoxicology

4. **Course Change Request:**
   a. STAT 616  Multivariate Analysis
   b. STAT 618  Statistical Aspects of Machine Learning and Data Mining
   c. STAT 636  Methods in Multivariate Analysis
   d. STAT 656  Applied Analytics Using SAS Enterprise Miner

5. **Special Consideration Items:**
   a. Systems Engineering New Degree Program
   b. Closure of Master of Science in Public Health Degree in Health Policy and Management Program
   c. Closure of Masters in Public Health in Health Policy and Management Program in McAllen
   d. Proposal for an Executive Master of Health Administration Distance Education Program
   e. Distance Education Master of Engineering in Mechanical Engineering

6. **Informational Items:**
   a. Memo Regarding MARB Requirements
New Courses
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. Request submitted by (Department or Program Name): Department of Animal Science

2. Course prefix, number and complete title of course: ANSC 836 Texas Panhandle Beef Production Tour

3. Catalog course description (not to exceed 50 words):
Covers all facets of beef production from cow/calf operations to retail product; experiential knowledge of technologies and practices to enhance efficiency to enlighten students regarding the array of career opportunities in the beef production industry.

4. Instructor Approval
Cross-listed with: Stacked with:
Cross-listed courses require the signature of both department heads.

5. Is this a variable credit course? ☑ No
   If yes, from _____ to _____

6. Is this a repeatable course? ☑ No
   If yes, this course may be taken _____ times.
   Will this course be repeated within the same semester? ☑ No

7. This course will be:
a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)

   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

Graduate students in Animal Science

8. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

9. Prefix: ANSC 636 TX PANHANDLE BEEF PROD
   Course #: 02 00 02 10 90 10 00 05 02 70 15 16 00 36 32
   Title (excluding pronunciation): 

   Approval recommended by:
   H. Russell Cross 3-31-14
   Department Head or Program Chair (Type Name & Sign) Date

   Department Head or Program Chair (Type Name & Sign) Date
   (If cross-listed course)

   David Reed 4/14/14
   Chair, College Review Committee
   Date

   David Reed 4/14/14
   Dean of College
   Date

   Chair, GC or UCC
   Date

   Effective Date

Associate Director, Curricular Services

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
Curricular Services – 3/10
ANSC 636: Texas Panhandle Beef Production Tour
Syllabus

May 12th – 16th 20XX

Instructor: Dr. Tryon Wickersham
Office: 230 Kleberg
Phone: 979.862.7088/979.220.0316
Email: tryon@tamu.edu
Hours: By appointment

Instructor: Dr. Jason Sawyer
Office: 133 Kleberg
Phone: 979.862.7679/979.218.6700
Email: j-sawyer@tamu.edu
Hours: By appointment

COURSE DESCRIPTION AND PREREQUISITES
2 credit hours. This tour of the Texas Panhandle will cover all facets of beef production from cow/calf operations to the final retail product. Speakers from each facet will expose students to opportunities in beef production and familiarize them with technologies and practices to enhance efficiency.

Prerequisites: Instructor approval
Textbook: None required
Stacked with ANSC 436 Texas Panhandle Beef Production Tour

LEARNING OUTCOMES AND COURSE OBJECTIVES
Purpose: Prepare students to work in beef production by exposing them to industry professionals and practices, creating a context for future learning, and allowing them to see current and future challenges facing beef production.

Specific Objectives:
1.) Observe each segment of beef production
2.) Enhance understanding of beef production
3.) Interact/network with professionals in beef production
4.) Identify the role of technology in improving the sustainability of beef cattle production.
5.) Develop a context for understanding research and the application of research findings to beef cattle production.

GRADING
Grades will be based on three areas, pre-tour (100 points), tour (300 points), and post tour (300 points) for a total of 700 pts. The following grading scale will be used: A > 630 points, B 629-560 points, C 559-490 points, D 489-420 points, and F < 420 points.

Pre-tour assignments: Completion of all 3 results in 100 points
  o Completed resume
  o Pre-tour test
  o Participation in pre-tour meeting
Tour: (300 points)
  o Appropriate Attire
  o Attendance
  o Participation (Questions/Networking; 100 points)
  o Daily Journaling (200 points)
Post-Tour (300 points)
  o Completion of journal (50 points)
  o Thoughtful completion of course evaluation (50 points)
  o ADDITIONAL REQUIREMENTS FOR GRADUATE CREDIT
    o Completion of a Summary Paper (200 points)
      - Summary papers will be 12 pt Times New Roman, double spaced, formatted according to the journal of animal science, and contain between 1500 and 2000 words (excluding title page and literature cited). Authors are expected to describe the value of a technology used in the beef industry. Authors will focus on how this technology impacts the sustainability of beef cattle production and used data from the literature to support the use of this technology. Authors should consider possible objections to the adoption of technology and the rationale behind the objections. Papers will be graded for content, use of sound data, and formatting.

ATTENDANCE, ELECTRONIC, & ATTIRE DISTURBANCES

Attendance is required at all activities and failure to attend or be on time will result in a one letter grade reduction. Additionally, use of electronic devices during tours, meals, or presentations will result in a one letter grade reduction. Failure to wear appropriate clothing will result in a one letter grade reduction and you spending the day at the Amarillo Extension and Research Center watching the flowers grow. Details of appropriate clothing will be provided at the pre-tour meeting.

COURSE EVALUATION

You will be asked to evaluate this course when you have completed your journal.

AMERICANS WITH DISABILITIES ACT (ADA) POLICY STATEMENT

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu
**ACADEMIC INTEGRITY STATEMENT AND POLICY**

An Aggie does not lie, cheat, or steal or tolerate those who do. More information can be found at [www.tamu.edu/aggiehonor/](http://www.tamu.edu/aggiehonor/). Cheating will not be tolerated and those caught cheating will at the minimum fail this course; however, the maximum penalty will be sought when cheating occurs in every case.

**TRIP SCHEDULE**

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Lecture</th>
<th>Hotel</th>
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<tbody>
<tr>
<td>1</td>
<td>May 12th</td>
<td><strong>Sunday</strong></td>
<td>Holiday Inn Express</td>
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<tr>
<td></td>
<td></td>
<td>Depart: Beef Center</td>
<td>700 Hillcrest Dr.</td>
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<td></td>
<td>Arrive: Vernon, TX</td>
<td>Vernon, TX</td>
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<td></td>
<td>Phone: 940.552.0200</td>
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<td>May 13th</td>
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<td>6701 Hollywood Rd.</td>
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<tr>
<td></td>
<td></td>
<td>(9 contact hours)</td>
<td>Amarillo, TX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Phone: 806.352.1900</td>
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<td>3</td>
<td>May 14th</td>
<td><strong>Tuesday</strong></td>
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<td>(9 contact hours)</td>
<td>Amarillo, TX</td>
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<td></td>
<td>Phone: 806.352.1900</td>
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</tbody>
</table>
Texas A&M University  
Departmental Request for a New Course  
Undergraduate • Graduate • Professional  
• Submit original form and attach a course syllabus.

Form Instructions
1. Request submitted by (Department or Program Name): George Bush School of Government and Public Service  
INTA 635 Great Famines, War and Humanitarian Assistance

2. Course prefix, number and complete title of course:  
INTA 635 Great Famines, War and Humanitarian Assistance

3. Catalog course description (not to exceed 50 words):Course will explore famines, their various definitions, theories of their causes and consequences; how those affected by them cope with the stages through which famines pass, and means by which they may be predicted, measured and assessed.

4. Prerequisite(s): None  
Cross-listed with: n/a  
Stacked with: n/a

5. Is this a variable credit course?  
☐ Yes   ☑ No

6. Is this a repeatable course?  
☐ Yes   ☑ No

7. Will this course be repeated within the same semester?  
☐ Yes   ☑ No

8. This course will be:  
a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)  
   None  
b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)  
   INTA, PSAA

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix  
INTA  
Course #  
635

Title (excluding punctuation)  
Great Famines

<table>
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<tr>
<th>Lect</th>
<th>Lab</th>
<th>CEE</th>
<th>UGC and Fund Code</th>
<th>Admin Unit</th>
<th>Acad Year</th>
<th>ECC Code</th>
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<td>034506040001136415</td>
<td>16</td>
<td>003632</td>
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</tbody>
</table>

Approval recommended by:  
Larry C. Napper  
Department Head or Program Chair (Type Name & Sign)  
Date: Mar 1, 2007

Leonard A. Bright  
Chair, College Review Committee  
Date:  
Arnold Vedlitz  
Dean of College  
4-30-94

Department Head or Program Chair (Type Name & Sign)  
(if cross-listed course)

Submitted to Coordinating Board by:  
Chair, GC or UCC  
Date

Associate Director, Curricular Services  
Date  
Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.  
Curricular Services – 03/14
"Great Famines, War, and Humanitarian Assistance"
George H.W. Bush School of Government and Public Service
Texas A and M University
INTA 635-600

Professor: Andrew S. Natsios
Email: anatsios@bushschool.tamu.edu
Telephone 979-862-1154
Office: 1084
Office Hours: Thursdays 12:00-1:30
Class time: Tuesday 9:35-12:15
Classroom: Allen 1107

I. Course Description

The course will explore famines: their various definitions, theories of their causes and consequences, how those affected by them cope with them, the stages through which famines pass, and means by which they may be predicted, measured, and analyzed. Famines will be viewed from three interrelated perspectives: as economic events, in their political context, and finally as public health and nutritional crises. Finally, various humanitarian responses to famine and conflict (since famines in Africa are usually a result of war and drought occurring simultaneously) will be examined, the strengths and weaknesses of each, and how these response programs are affected by conflicts. Specific case studies will be reviewed using the instruments of analysis developed during the course, particularly the entitlement theory of Amartya Sen.

II. Assignments

Four papers are required in the course:

1. A three-page information memo. Subject of paper to be posted on blackboard. This paper is due September 19th and will be worth 15% of the final grade.

2. A three-page paper. Subject of paper to be posted on blackboard. This paper is due October 10th and will be worth 15% of the final grade.

3. A three-page paper/decision memo. Subject of paper to be posted on blackboard. This paper is due November 7th and will be worth 15% of the final grade.

4. A ten to twelve-page paper on a 20th century famine of the student's choice, describing the economics and politics of the famine and the measures taken by either the host government or by the international aid community in response. Why were these measures successful or unsuccessful? While this paper should use the analytical tools

1
developed during the course, the paper must include an analysis of the famine using the entitlement theory of Amartya Sen and at least one other writer such as Alex de Waal or Larry Minear. The student must do a thorough literature search on the famine chosen as the paper must deal primarily with the famine itself. Do not waste space and time describing the theories of famine in the course—apply the theory or theories. The paper must include footnotes (not endnotes) and a bibliography at the end. This paper is due in class on December 5th and will be worth 45% of the final grade. Ten percent of your grade will be class participation.

5. You will also participate in oral exercises in class that will be posted online on the dates noted in this syllabus.

III. Course Objectives

Upon completion of the course, students will be able to:

- Write a coherent decision memo or information memo with policy choices for senior aid executives during an emergency or reconstruction program.
- Write an in depth analysis of the economic, political, and armed group dynamics during a complex humanitarian emergency.
- Have an in-depth understanding of food security, famine theory, emergency response operations, and alternative programmatic approaches in responding to complex emergencies.
- Explain the operation of the international humanitarian response system during emergencies, its strengths and weaknesses.
- Design and present a plan to respond to a complex emergency

IV. Grading Methodology

Each student’s grade will be determined by the grades of the four papers as well as an additional 10% reflecting the student’s attendance and participation in class discussions.

Your papers will be graded on several criteria: thorough analysis of the causes and dynamics of the crisis applying at a minimum Sen’s entitlement theory, Minear’s (and Anderson as a secondary source) description of the politics of the crisis, quality of writing and organization of the paper. Late papers will result in a reduction of one half grade for every day late (an A will be reduced to an A- after one day’s tardiness, a B+ after two days, and so on). If your paper will be late, notify me on the day the papers are due.

Grading:

The standard Bush School scale will apply:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A Extraordinary, excellent work and mastery of concept</td>
</tr>
<tr>
<td>89-80</td>
<td>B Good work and solid command of concept</td>
</tr>
</tbody>
</table>

2
70-79  C  Adequate work and sufficient understanding of concept
60-69  D  Poor work, little understanding of concept
0-59   F  Lack of work, no understanding of concept

V. Academic Integrity

Writing will make up much of the grade in this class. You should note that plagiarism is a violation of the TAMU Honor System. The University defines plagiarism as “the act of passing off as one’s own the ideas or writings of another” and notes that “plagiarism can be said to have occurred without any affirmative showing that a student’s use of another’s work was intentional.” (TAMU Honor System brochure, p. 4). Thus, plagiarism can occur either intentionally or through negligence. Be sure to cite all sources you use, and if you’re unsure whether or not to cite something, either ask your TA or err on the side of caution. If I suspect the originality of a student’s work, I may use the new electronic search systems of the university to check for plagiarism. DO NOT PUT YOUR INTEGRITY AND REPUTATION AT RISK BY ENGAGING IN THIS BEHAVIOR. I FIND IT PARTICULARLY OFFENSIVE IN A COURSE DEALING WITH LIFE AND DEATH ISSUES.

Americans with Disability Act (ADA): The Americans with Disabilities Act (ADA) is a federal non-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this law requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Services Office in Cain Hall, Rm. B118 or call 845-1637. For more information visit http://disability.tamu.edu.

VI. Course Schedule

1. Course introduction, requirements, reading list, source material, and approach.
   - Food Security defined
   - Theories of Famine
   - Famine typology
   - Famine as a process, not an event
   - Kaplan’s Chaos Theory

Reading Assignment


2. September 5. The economics of famine.

3
- Food availability decline theory of Thomas Malthus
- Exchange entitlement theory of Amartya Sen
- Micro-economic forces and famine
- Shocks, time sequencing, price increases, and famine

**Reading Assignment**


**3. The politics of famine.**

- Totalitarian famines
- War and famine
- Famine as an act of execution
- The political consequences of famines: France (1789), Ireland, (1845), Japan (1930’s), Sahelian famine (1973), and North Korea (1997).
- The politics of the international humanitarian response system
- Foreign policy and famine: the diplomacy of catastrophe
- Military intervention in complex humanitarian emergencies

**Reading Assignment**


**4. Diagnostic tools.**

- Pre-famine and trailing indicators
- Early warning systems: FEWS net
- Field assessments and program evaluations
- Famine from the perspective of the survivors
- Making choices: increased family mortality or absolute destitution
- Coping mechanisms
- Building local capacity, avoiding destitution, and strengthening people’s coping mechanisms

**Reading Assignment**


First paper due at the beginning of class on September 19th.

5. Humanitarian assistance during conflict.
   - Do No Harm and the law of unintended consequences
   - Disasters and Development: the gap. Cuny hypothesis.
   - Developmental relief
   - The microeconomics of aid during conflict: economics of chaos
   - Standard Operating Procedures for aid agencies in conflict areas: the collective wisdom.

Reading Assignment


1st CLASS EXERCISE September 26th: Darfur Food Security and Market Intervention Assessment case study.

6. Famine as a public health crisis.
   - Moderate and acute malnutrition
   - Disease as the major killer: immune system collapse
   - The biology of starvation
   - Changed disease environment hypothesis of Alex de Waal
   - Mass migration and mortality
   - Water and sanitation

Reading Assignment


Eric James, Managing Humanitarian Relief: An Operational Guide for NGOs, Practical
7. Programmatic responses to famine.

- British Famine Code of India
- Chinese Imperial System
- Sen and Dreze work
- Cuny market-based approach
- Employment and livelihood schemes
- External food aid, local purchase, and market interventions
- Program monitoring and evaluation

Reading Assignment
Frederick Cuny with Richard Hill, *Famine, Conflict, and Response*, Kumerian Press, 1999. *(From Chapter 4 onwards; Read the remainder of the book)*


Second paper due at the beginning of class on October 10th.

8. The moral dilemmas of humanitarian aid.

- International humanitarian law
- The de Waal Hypothesis: non-intervention
- Accountability of international aid system and the recipients
- Foreign policy and humanitarian assistance
- The Sphere Standards

Reading Assignment


- Chaotic evolution or intelligent design?
- The program delivery system options in failed states both during and after crisis
- Non-governmental organizations
- International Organizations: the UN Big Four (WFP, UNICEF, UNDP, and UNHCR), ICRC, and IOM
• Donor aid agencies: OFDA/DCHA of USAID and ECHO/EC
• USAID/DCHA Bureau: OFDA, FFP, OTI, CMM, OMA, and DART teams. The Field Officers Guide of OFDA.
• PRM and IO in DOS.
• Coordination mechanisms: UN OCHA, DCHA/OFDA and EU/ECHO
• Donor funding systems: US and EU.
• USAID food aid and local purchase accounts
• Attempts at reform: the DFID proposals

Reading Assignment

(order TBD)


2nd CLASS EXERCISE NOVEMBER 7th: See blackboard.

• Defined: five characteristics of complex humanitarian emergencies
• State fragility, failed states, and recovering states
• Collier’s four traps of failed states
• Douglass North and Limited Access Orders and state failure
• State failure as a development challenge: a failure of governance
• International response to state fragility and failure-innovations and reform
• Post-Conflict reconstruction

Reading Assignment

(order TBD)


Paul Collier, The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It, Oxford University Press, 2007. (Chapters 1-4)

Pauline Baker, “The Failed State Index”, Foreign Policy, July/August 2005, pp. 56-65

The third paper due at the beginning of class on November 8th.

Class exercise on November 14th. Case study from Evaluating International Humanitarian Action, Editor Adrian Wood, et al.


- Code of Conduct, Red Cross Principles, and Bellagio Principles
- The UN Charter, Refugee rights, Geneva Conventions
- The Responsibility to Protect doctrine-R2P
- On strategy in humanitarian emergencies
- What we know and what we do not know about response
- Ten guiding principles of humanitarian operations

Reading Assignment
http://carlisle-www.army.mil/usawc/Parameters/96summer/natsios.htm

Roger Riddell, Does Foreign Aid Really Work? (Chapter 18 and 19)

(Humanitarian Law Readings will also be posted on-line)

Fourth paper due at the beginning of the class on November 28th. This research paper will be your final exam.

VII. Required Book List
(in addition to specific articles listed in syllabus/blackboard)


Roger Riddell, *Does Foreign Aid Really Work?*, Oxford University Press. (DO NOT PURCHASE—POSTED TO BLACKBOARD)


**VIII. Selected Additional Readings**


Cormac O Grada, *Famine: A Short History*, Princeton University, 2009,
I was checking with IR faculty, and have just heard — as expected — that there is no problem with this. So: Political Science has no problem with it!

Bob

Robert Harmel
Interim Head
Political Science

Yes, I just spoke with the assistant head who stated that they will respond today or so.

Leonard Bright, Ph.D.
Associate Professor
Faculty Senate Representative
Assistant Dean of Graduate Education
Bush School of Government and Public Service
Texas A&M University
College Station, TX
lbright@tamu.edu
Phone: 979-862-3028

I got it but I assumed someone from Political Science would respond. pat

Patricia A. Hurley
Associate Dean of Liberal Arts and Professor of Political Science
Texas A&M University
4223 TAMU, College Station, TX 77843-4223
Phone: 979-845-8541 e-mail: pat-hurley@tamu.edu
Can someone follow-up with me regarding the email below? This was sent last Thursday. Did you receive it?

Leonard Bright, Ph.D.
Associate Professor
Faculty Senate Representative
Assistant Dean of Graduate Education
Bush School of Government and Public Service
Texas A&M University
College Station, TX
libright@tamu.edu
Phone: 979-862-3028

attached is a new course that the bush school’s international affairs department would like to propose, entitle “great famines, war, and humanitarian assistance”. attached is the syllabus. please let me know if there are objections from your end and if you support it.

leonard,

leonard bright, ph.d.
associate professor
faculty senate representative
assistant dean of graduate education
bush school of government and public service
texas a&m university
college station, tx
libright@tamu.edu
phone: 979-862-3028
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and attach a course syllabus.

1. Request submitted by (Department or Program Name): Texas A&M Institute for Neuroscience

2. Course prefix, number and complete title of course: NRSC 616 - Advanced Developmental Neurotoxicology

3. Catalog course description (not to exceed 50 words):
   Study of mechanisms of toxicity of substances potentially devastating to the developing brain and spinal cord including lead, mercury and other heavy metals, alcohol, nicotine (smoking), pesticides, flame retardants, and others.

4. Prerequisite(s):
   VIBS 616

5. Is this a variable credit course? Yes ☐ No ☑
   If yes, from _____ to _____

6. Is this a repeatable course? Yes ☐ No ☑
   If yes, this course may be taken _____ times.
   Will this course be repeated within the same semester? Yes ☐ No ☑

7. This course will be:
   a. required for students enrolled in the following degree programs(s) (e.g., B.A. in history) N/A
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography) N/A

8. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

9. Prefix  Course #  Title (excluding punctuation)
    NRSC  616  ADV  DEV  NEUROTOXICOLOGY

   Lect.  Lab  ST  CH  CRP  Fund Code  Admin. Unit  Acad. Year  ELC Code
   0 3 0 0 0 3 2 6 4 5 0 1 0 0 2 1 6 5 5 1 4 0 0 3 6 3 2

   Approval recommended by:
   Dr. Jane Welsh
   Department Head or Program Chair (Type Name & Sign) Date
   Dr. Evelyn Tiffany-Castiglione
   Department Head or Program Chair (Type Name & Sign) Date

   Submitted to Coordinating Board by:
   Associate Director, Curricular Services

   Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
   Curricular Services – 3/10
Syllabus

NRSC 616/VIBS 616 Advanced Developmental Neurotoxicology

Instructor: Dr. Louise C. Abbott
Credit Hours: 3
Format: lecture/discussion
Day, start time, Room #:

Tuesdays
9:00AM - 9:50 AM
10:00 AM - 10:50 AM

Thursdays
9:00AM - 9:50 AM

Room 206 building 1026 (VMA)

Office hours: 10:00 AM - 11:45 AM Fridays

Office: Building 507 (VMS building)
Room 270A (inner office)
Phone: 845-2828 (Dept. office)
Email: labbott@cvm.tamu.edu

Course Overview:
This course will cover the effects of exposure to toxic substances on the developing central nervous system (CNS), which includes the brain and spinal cord and focus on the proposed mechanisms by which these toxicants act. One out of four Americans will suffer from a CNS-related disorder at some point in their life. The discipline of toxicology is focused on increasing our understanding of the extent, causes and underlying mechanisms of CNS-related disorders that are related to exposure to toxic agents. The developing CNS is even more vulnerable to toxic insult than the mature CNS. The suffering caused by CNS-related disorders that occur in the developing individual must then be endured for a lifetime. 4% to 8% of children born in the US exhibit anatomical and/or functional deficits associated with the CNS, often resulting from developmental exposure to toxic agents such as lead, mercury and alcohol. For these very serious reasons this course will develop awareness of the principles of developmental neurotoxicology. We will focus on the common toxicants that are already known to be potentially devastating to the developing CNS: lead, mercury, alcohol, nicotine (smoking), pesticides, and other heavy metals such as manganese and cadmium. A significant proportion of class time will be devoted to discussing current primary literature that will be assigned by the instructor.

Prerequisites:
Graduate status or approval of instructor
Resources:

Journal Articles - TBA
Embryology textbooks on reserve at the Medical Sciences Library
Class notes/lecture PPTs found on ecampus

Exams and Assignments:
There will be 2 written midterm exams taken during the semester, an oral presentation and a written paper that will be due on the last day assigned for the class.

In addition you will be assigned a minimum of 11 articles from research journals to read for specific classes and you will be expected to be able to answer questions during class discussion of those papers. You also will be asked to prepare written assignments for 10 of the articles based on reading these articles.

A written paper will be due at the end of the course and this paper will follow the format of a synthesis paper. Possible topics and the exact format for the paper will be described in a handout that will be provided and will be discussed during the second or third week of class. The possible topics for your papers and the mechanics of how you will prepare those papers as well as your oral presentations will be discussed in more detail during class time. You will be able to access the handout describing all requirements and exact deadlines from ecampus.

I reserve the right to provide extra questions on the exams, give pop quizzes or provide additional work that would provide BONUS POINTS to students taking the class. Because these mechanisms are BONUS points, these points are NOT reflected in the point totals. The number of possible bonus points that will be made available will not exceed 5% of the point total. Therefore, the maximum number of bonus points that I could offer will be 25. I do not guarantee that I will offer that many bonus points throughout the course. There could be less than 25 bonus points, but there will NOT be more than 25 bonus points made available throughout the course.

Point totals:
Midterm Exams - 2 @ 75 points each 150
Oral presentation 75
Written paper 100
Written Assignments during the semester
10 @ 10 points each 100
Participation in class discussion 25
TOTAL 450
A = 405 - 450
B = 360 - 404
C = 315 - 359
D = 293 - 314
F = < 293

The final grade will be based on the total number of points earned in the class as described above. There will be no curving of the grade distribution but as the instructor I reserve the right to adjust the thresholds for letter grade cut offs based on overall class performance. I WILL NOT adjust the distribution upwards. I will only adjust the distribution downwards, if necessary.
(i.e., I will not make the cut off for an A to be greater than 405 points, but I could make it 400 points, JUST AS AN EXAMPLE).

ABSENCES

Please see the university rules for descriptions of EXCUSED absences at [http://student-rules.tamu.edu/rule7.htm](http://student-rules.tamu.edu/rule7.htm)

Days of religious observance: By state law, if a student misses class due to an obligation of his or her religion, the absence is excused. A list of days of religious obligation for the current academic year can be found at [http://dof.tamu.edu/faculty/policies/religiousobservance.php](http://dof.tamu.edu/faculty/policies/religiousobservance.php)

NRSC 616/ViBS 616 - Advanced Developmental Neurotoxicology

Tentative course schedule:

<table>
<thead>
<tr>
<th>Class topics</th>
<th>Assignments and exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 Early development and start neural tube</td>
<td>Article 1</td>
</tr>
<tr>
<td>development</td>
<td></td>
</tr>
<tr>
<td>Week 2 The 6 principles of development</td>
<td>Article 2</td>
</tr>
<tr>
<td>Neural tissue histology</td>
<td></td>
</tr>
<tr>
<td>Week 3 synaptogenesis and neurotransmission</td>
<td>Article 3</td>
</tr>
<tr>
<td>Week 4 Toxicology review</td>
<td>Article 4</td>
</tr>
<tr>
<td>Week 5 Toxicology review</td>
<td>Article 5</td>
</tr>
<tr>
<td>Week 6 Introduction to neurotoxic syndromes</td>
<td>Article 6</td>
</tr>
<tr>
<td>Week 7 Mercury neurotoxicity and Minimata disease</td>
<td>Exam 1 (Thursday)</td>
</tr>
<tr>
<td>Week 8 Mercury neurotoxicity and autism</td>
<td>Article 7</td>
</tr>
<tr>
<td>Week 9 Effect of alcohol in the developing CNS</td>
<td>Article 8</td>
</tr>
<tr>
<td>Week 10 Effect of alcohol in the developing CNS</td>
<td>Article 9</td>
</tr>
<tr>
<td>Week 11 Developmental Neurotoxicity of smoking</td>
<td>Article 10</td>
</tr>
<tr>
<td>(nicotine)</td>
<td>Article 11</td>
</tr>
<tr>
<td>Week 12 CNS effects of prenatal lead exposure</td>
<td>Exam 2 (Thursday)</td>
</tr>
<tr>
<td>Week 13 CNS effects of prenatal lead exposure</td>
<td>Oral presentations</td>
</tr>
<tr>
<td>Week 14 Developmental neurotoxicity of pesticides</td>
<td>(Tuesday)</td>
</tr>
<tr>
<td>Week 15 Developmental neurotoxicity of flame</td>
<td>Oral presentations</td>
</tr>
<tr>
<td>retardants (PBDEs - polybrominated diphenyl</td>
<td>(Tuesday)</td>
</tr>
<tr>
<td>ethers)</td>
<td>Written paper due</td>
</tr>
<tr>
<td></td>
<td>on last class day</td>
</tr>
<tr>
<td>Finals week</td>
<td>NO examination</td>
</tr>
</tbody>
</table>
Americans with Disabilities Act (ADA) Policy Statement

The following ADA Policy Statement (part of the Policy on Individual Disabling Conditions) was submitted to the University Curriculum Committee by the Department of Student Life. The policy statement was forwarded to the Faculty Senate for information.

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu.

Academic Integrity Statement: AGGIE HONOR CODE

"An Aggie does not lie, cheat, or steal or tolerate those who do."

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

For additional information please visit: http://www.tamu.edu/aggiehonor/

Pledge
On all quizzes and examinations at Texas A&M University, the following Honor Pledge shall be pre-printed and signed by the student at the time the examination / quiz is taken:

"On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work."

CLASSROOM COMMUNICATION FORM

The next page is a standard TAMU classroom communication form. Please feel free to use this form should you feel the need to do so during the semester.
CLASSROOM COMMUNICATION CONCERNS

Student Inquiry # ___________________________ Date __________________

Student ___________________________ Major Class __________________

ID# ___________________________ Local Phone __________________

Address ___________________________

Signature ___________________________

Professor __________ Course __________ Section __________ Semester __________

Specific Concerns

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

The intent of this policy is to provide a mechanism for improving classroom communication and for this purpose only. It is intended not only to detail how a student may register a specific problem in a class but also to provide a route for a faculty member seeking information on how to improve his or her teaching effectiveness.

The proper procedures for students to follow in registering concerns or praise about classroom communications are:

1. A student first reports concern to the Instructor in charge of the course.

2. If the issue is not resolved at this level, the student should report the concerns to the Instructor’s Department Head for resolution and complete the Classroom Communication Concerns form. These forms are available in the departmental offices and in each Academic Dean’s office.

3. If the issue is still not resolved or if the issue cannot be discussed with the instructor, the student should then bring the matter to the Academic Dean for Graduate or Undergraduate Programs in the college in which the course is offered. The student is asked to complete a reporting form for the “Classroom Communication Concerns” if one has not been completed.

4. The Academic Dean for Graduate or Undergraduate Programs works with the respective Department Heads to investigate and resolve each complaint about classroom communications in conjunction with the instructor.

5. A ‘Response’ space for the Instructor is included in the reporting form for “Classroom Communications Concerns.”

6. The Department Head completes the form describing the investigation and the actions taken. The Academic Dean for Graduate or Undergraduate Programs signs the completed form and forwards a copy to the Provost’s Office. The entire process is to be completed within seven class days from the time that the concern was registered. A summary of action taken will be made available to the student filing the “Classroom Communication Concerns.”

7. If the issue cannot be resolved at the Department Head level through the Academic Dean, an appeal should be made by the student to the Dean. If further appeal becomes necessary, it should be made to the Office of the Provost.

8. See University Regulations for procedures to file complaints for sexual harassment, discrimination, and grade appeals.
Course Changes
Texas A&M University

Departmental Request for a Change in Course
Undergraduate ♦ Graduate ♦ Professional
* Submit original form and attachments *

Form Instructions
1. Course request type:
   - [ ] Undergraduate
   - [ ] Graduate
   - [ ] First Professional (ex., DVM, JD, MD, etc.)

2. Request submitted by (Department or Program Name):
   Department of Statistics

3. Course prefix, number and complete title of course:
   STAT 616 - Multivariate Analysis

4. Change requested
   a. Prerequisite(s): From: STAT 611, STAT 612
      To: STAT 612, STAT 613
   b. Withdrawal (reason):
   c. Cross-list with:

   Cross-listed courses require the signature of both department heads.

d. Change in course title and description. Enter complete current course title and current course description in item 5; enter proposed course title and proposed course description in item 6. Complete item 7 for change in title.

e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 7. Attach a course syllabus.

5. Is this an existing core curriculum course?
   - [ ] Yes
   - [X] No

6. If this course will be stacked, please indicate the course number of the stacked course:

7. [X] I verify that I have reviewed the FAQ for Export Control Basics for Distance Education (http://vpr.tamu.edu/resources/export-controls/export-controls-basics-for-distance-education).

8. Complete current course title and current catalog course description:
   Multivariate Analysis:
   - Multivariate normal distributions and multivariate generalizations of classical test criteria, Hotelling's T2, discriminant analysis and elements of factor and canonical analysis

9. Complete proposed course title and proposed catalog course description (not to exceed 50 words):
   Statistical Aspects of Machine Learning I: Classical Multivariate Methods
   - Core methods from traditional multivariate analysis and various extensions. Probability distributions of random vectors and matrices, multivariate normal distributions, model assessment and selection in multiple regression, multivariate regression, dimension reduction, linear discriminant analysis, logistic discriminant analysis, cluster analysis, multidimensional scaling and distance geometry, and correspondence analysis.

10. a. As currently in course inventory:

    | Prefix | Course # | Title (excluding punctuation) |
    |--------|----------|-----------------------------|
    | STAT   | 616      | Multivariate Analysis       |

    | Lect | Lab | SCH | CLP and Fund Code | Admin. Unit | HCL Code | Level |
    |------|-----|-----|------------------|-------------|----------|-------|
    | 0    | 3   | 0   | 0                | 3           | 2        | 7     |
    | 0    | 5   | 0   | 0                | 3           | 0        | 0     |
    | 0    | 0   | 1   | 2                | 7           | 4        | 0     |
    | 0    | 0   | 3   | 6                | 3           | 2        |       |

    b. Change to:

    | Prefix | Course # | Title (excluding punctuation) |
    |--------|----------|-----------------------------|
    | STAT   | 616      | STAT OF MACH. LEARN. - I   |

    | Lect | Lab | SCH | CLP and Fund Code | Admin. Unit | Acad. Year | HCL Code | Level |
    |------|-----|-----|------------------|-------------|------------|----------|-------|
    | 0    | 3   | 0   | 0                | 3           | 2         | 7       | 0     |
    | 0    | 5   | 0   | 0                | 3           | 0         | 0       | 1     |
    | 0    | 0   | 1   | 2                | 7           | 4         | 0       | 1     |
    | 0    | 0   | 3   | 6                | 3           | 2         |         |       |

   Approval recommended by:
   Michael Longnecker 4-14-2014

   Department Head or Program Chair (Type Name & Sign) Date
   Chair, College Review Committee Date
   Department Head or Program Chair (Type Name & Sign)
   (If cross-listed course) Date
   Dean of College Date

   Submitted to Coordinating Board by:
   Chair, GC or UCC Date

   Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
Curricular Services – 04/14
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
• Submit original form and attachments •

Form Instructions
1. Course request type: □ Undergraduate  ☑ Graduate  □ First Professional (ex. DFM, JD, MD, etc.)
2. Request submitted by (Department or Program Name):
   Department of Statistics
3. Course prefix, number and complete title of course: STAT 618: Statistical Aspects of Machine Learning and Data Mining
4. Change requested
   a. Prerequisite(s): From: STAT 610, STAT 611, and STAT 613 To: STAT 612, STAT 613, and STAT 616
   b. Withdrawal (reason):
   c. Cross-list with:
   d. Change in course title and description. Enter complete current course title and current course description in item 5; enter proposed course title and proposed course description in item 6. Complete item 7 for change in title.
   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 7. Attach a course syllabus.
5. Is this an existing core curriculum course? □ Yes  ☑ No
6. If this course will be stacked, please indicate the course number of the stacked course:
7. I verify that I have reviewed the FAQ for Export Control Basics for Distance Education (http://vpr.tamu.edu/resources/export-controls/export-controls-basics-for-distance-education).
8. Complete current course title and current catalog course description:
   Statistical Aspects of Machine Learning and Data Mining
   Examines the statistical aspects of techniques used to examine data streams which are large scale, dynamic, and heterogeneous; examines the underlying statistical properties of classification; trees; bagging and boosting methods; neural networks; support vector machines; cluster analysis; and independent component analysis
9. Complete proposed course title and proposed catalog course description (not to exceed 50 words):
   Statistical Aspects of Machine Learning II: Modern Techniques
   Second course in statistical machine learning. Recursive partition and tree-based methods, artificial neural networks, support vector machines, reproducing kernels, committee machines, latent variable methods, component analysis, nonlinear dimensionality reduction and manifold learning, matrix factorization and matrix completion, statistical analysis of tensors and multi-indexed data.
10. a. As currently in course inventory:
    
    | Prefix | Course # | Title (excluding punctuation) |
    |--------|----------|-------------------------------|
    | STAT   | 618      | STAT MACH LEARN & MINING     |
    
    | Lect. | Lab | SCH | CRP and Fund Code | Admin. Unit | FICE Code | Level |
    |-------|----|-----|-------------------|-------------|----------|-------|
    | 0     | 3  | 0   | 0 3 2 7 0 5 0 3 0 0 1 2 7 4 0 | 0 0 3 6 3 2 |

    b. Change to:
    
    | Prefix | Course # | Title (excluding punctuation) |
    |--------|----------|-------------------------------|
    | STAT   | 618      | STAT OF MACH. LEARN. - II    |
    
    | Lect. | Lab | SCH | CRP and Fund Code | Admin. Unit | Acad. Year | FICE Code | Level |
    |-------|----|-----|-------------------|-------------|------------|----------|-------|
    | 0     | 3  | 0   | 0 3 2 7 0 5 0 3 0 0 1 2 7 4 0 1 3 1 4 0 0 3 6 3 2 |

    Approval recommended by:
    Michael Lonnercker  4-14-2014
    Chair, College Review Committee

    Department Head or Program Chair (Type Name & Sign)
    Date

    Department Head or Program Chair (Type Name & Sign)
    (if cross-listed course)
    Date

    Submitted to Coordinating Board by:
    Chair, GC or UCC
    Date

    Associate Director, Curricular Services
    Date

    Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
Curricular Services – 04/14
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
Submit original form and attachments.

Form Instructions
1. Course request type:
   - Undergraduate
   - Graduate
   - First Professional (e.g., DVM, JD, MD, etc.)

2. Request submitted by (Department or Program Name):
   Department of Statistics

3. Course prefix, number and complete title of course:
   STAT 636 - Methods in Multivariate Analysis

4. Change requested
   a. Prerequisite(s): From:
   b. Withdrawal (reason):
   c. Cross-list with:
   d. Cross-listed courses require the signature of both department heads.
   e. Change in course title and description. Enter complete current course title and current course description in item 5; enter proposed course title and proposed course description in item 6. Complete item 7 for change in title.
   f. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 7. Attach a course syllabus.
   g. Is this an existing core curriculum course?
      - Yes
      - No
   h. If this course will be stacked, please indicate the course number of the stacked course:
   i. I verify that I have reviewed the FAQ for Export Control Basics for Distance Education (http://vpr.tamu.edu/resources/export-controls/export-controls-basics-for-distance-education).

5. Complete current course title and current catalog course description:
   Methods in Multivariate Analysis -
   Multivariate extensions of the chi-square and t-tests, discrimination and classification procedures; applications to diagnostic problems in biological, medical, anthropological and social research; multivariate analysis of variance, principal component and factor analysis, canonical correlations.

6. Complete proposed course title and proposed catalog course description (not to exceed 50 words):
   Applied Multivariate Analysis -
   Multivariate extensions of the chi-square and t-tests, discrimination and classification procedures; applications to diagnostic problems in biological, medical, anthropological and social research; multivariate analysis of variance, principal component and factor analysis, canonical correlations.

7. As currently in course inventory:
   Prefix  Course #  Title (excluding punctuation)
   STAT  656  Applied Analytics

   Lect  Lab  SCH  CIP and Fund Code  Admin. Unit  HCE Code  Level
   0 0 0 0 0 0 0 0 1 2 4 0 0 3 6 3 2

8. Change to:
   Prefix  Course #  Title (excluding punctuation)
   STAT  656  Applied Analytics

   Lect  Lab  SCH  CIP and Fund Code  Admin. Unit  Acad. Year  HCE Code  Level

   Approval recommended by:
   Michael Longnecker 4-14-2014

   Department Head or Program Chair (Type Name & Sign)  Date
   Chair, College Review Committee  Date

   Department Head or Program Chair (Type Name & Sign)
   (If cross-listed course)  Date
   Dean of College  Date

   Submitted to Coordinating Board by:
   Chair, GC or UCC  Date

   Associate Director, Curricular Services  Date

   Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
   Curricular Services – 04/14
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
Submit original form and attachments.

Form Instructions
1. Course request type: ☐ Undergraduate □ Graduate ☐ First Professional (e.g., DVM, JD, MD, etc.)

2. Request submitted by (Department or Program Name): Department of Statistics

3. Course prefix, number and complete title of course: STAT 656 - Applied Analytics Using SAS Enterprise Miner

4. Change requested
   a. Prerequisite(s): From: STAT 657 To: STAT 657, STAT 659
   b. Withdrawal (reason):
   c. Cross-list with:

   Cross-listed courses require the signature of both department heads.

   d. Change in course title and description. Enter complete current course title and current course description in item 5; enter proposed course title and proposed course description in item 6. Complete item 7 for change in title.

   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 7. Attach a course syllabus.

5. Is this an existing core curriculum course? ☐ Yes □ No

6. If this course will be stacked, please indicate the course number of the stacked course:

7. ☐ I verify that I have reviewed the FAQ for Export Control Basics for Distance Education (http://vpr.tamu.edu/resources/export-controls/export-controls-basics-for-distance-education).

8. Complete current course title and current catalog course description:

9. Complete proposed course title and proposed catalog course description (not to exceed 50 words):

10. a. As currently in course inventory:

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<thead>
<tr>
<th>Prefix</th>
<th>Course #</th>
<th>Title (excluding punctuation)</th>
</tr>
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<tbody>
<tr>
<td>STAT</td>
<td>656</td>
<td>Applied Analytics</td>
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<th>Lab</th>
<th>SCH</th>
<th>CIP and Fund Code</th>
<th>Admin. Unit</th>
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<td>3</td>
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b. Change to:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Course #</th>
<th>Title (excluding punctuation)</th>
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<td></td>
<td></td>
<td>0</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

Approval recommended by:
Michael Longnecker

Department Head or Program Chair (Type Name & Sign) Date
Chair, College Review Committee Date

Department Head or Program Chair (Type Name & Sign) (if cross-listed course) Date
Dean of College Date

Submitted to Coordinating Board by:
Chair, GC or UCC Date

Associate Director, Curricular Services

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
Curricular Services – 04/14
Special Consideration
Items
Texas A&M University
New Certificate, Bachelors, Masters, or Doctoral Program
• Proposal Checklist •

Requested by the Department or Unit of:
College of Engineering (CLEN)
Dwight Look College of Engineering

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

Program Type  Certificate Program □  Degree Program □
Program Level  Undergrad Certificate □  Grad Certificate □  Bachelor □  Master □  Doctoral □
Degree Designation (i.e., BS, BA, MA, MS, MEng, Med, PhD, EdD, etc.)  MEng
Title of proposed program:  Systems Engineering
Proposed CIP Code (if known):  47.2701

Brief program description (provide a catalog description for undergraduate and graduate certificates):
The Proposed Systems Engineering MEng degree is a 30 hour, non-thesis program which will educate students in state of the art systems engineering concepts as utilized across multiple engineering disciplines. The course work will cover systems thinking, systems modeling, systems engineering tools and systems engineering management.

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

Proposed program hours:  ————  ————  30

*12 hours minimum to appear on transcript

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

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Program Start Date</th>
<th>SACS Approval**</th>
<th>When Provost needs to inform SACS</th>
</tr>
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<tbody>
<tr>
<td>25%</td>
<td>Fall 2015</td>
<td>Notification Only</td>
<td>————</td>
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<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>
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<td>6 months before first day of program</td>
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<tr>
<td>100%</td>
<td></td>
<td>Approval Required</td>
<td>6 months before first day of program</td>
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</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>
<th>College Station</th>
</tr>
</thead>
</table>

Specific off-campus location***

Distance Education / Internet  In-State □  Out-of-State □  Start Date ————

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 SACS location?  Yes □  No □
If no, a program prospectus must be sent to SACS.
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: ————

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):
John C. Criscione, MD, PhD
Name
Asst Dean for Graduate Programs in Engineering
Title
JCCriscione@tamu.edu
Email
979-862-3946
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 signatures lines if program is between three or more departments or colleges.

Signature, Department Head or Interdisciplinary Program Chair
John C. Criscione
Typed or Printed Name
3/27/14
Date

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

Chair, College Review Committee
Dean of College
Date
Date

Chair, University Curriculum Committee or Graduate Council
Date

Additional Approvals Required: Faculty Senate and President.
New Bachelor’s and Master’s Degree
Cover Page/Signature Page

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).

Information: Contact the Division of Academic Affairs and Research at 512/427-6200 for more information.

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): Master of Engineering in Systems Engineering

3. Proposed CIP Code: 14.2701.00

4. Number of Required Semester Credit Hours (SCHs) (If the number of SCHs exceeds 120 for a Bachelor’s program, the institution must request a waiver documenting the compelling academic reason for requiring more SCHs): 30 hours

5. Brief Program Description – Describe the program and the educational objectives:

The MEng in Systems Engineering is a 30 SCH, non-thesis master’s program that is intended to provide graduates with the latest cross-discipline concepts, tools, and skills in systems engineering--as required for modern manufacturing, production, and service industries and for governmental and military operations.

6. 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): Dwight Look College of Engineering

7. Proposed Implementation Date – Report the date that students would enter the program (MM/DD/YY): Fall 2015
8. Contact Person – Provide contact information for the person who can answer specific questions about the program:

Name: Dr. John C. Criscione

Title: Assistant Dean for Graduate Programs

E-mail: JCCriscione@tamu.edu

Phone: 979-862-3946
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
Request Form for Bachelor’s and Master’s Degrees

Program Requested:
A new Master of Engineering Degree in Systems Engineering

Unit Requesting Degree:
The office of the Vice Chancellor and Dean of Engineering at College Station, Texas

Degree Requirements: 30 hours of coursework including 18 hours of coursework (6 courses) in the general theory of Systems Engineering; 9 hours of elective coursework; a 1-hour seminar course; and a 2-hour capstone project.

Resources and Funding Required: Faculty from individual engineering departments will teach all courses in the degree program under a cooperative/participative agreement with the Office of the Dean of Engineering, who will administer and oversee the program through the Engineering Academic and Student Affairs (EASA) Office. This new degree program will be a joint effort between all of the engineering departments at Texas A&M University. This program utilizes academic resources that are already funded—i.e., approved courses and mentoring by graduate faculty in the Look College of Engineering.

I. Need

NEEDS ASSESSMENT

A. Job Market Need

Due to the complexities of Manufacturing and Service sector Enterprise Systems, there is an emerging and growing need for Systems Engineers trained in Systems Modeling Methodologies. This need is manifested in industry, government and military operations. Money Magazine rated Systems Engineering in 2009 as the top career choice with an expected 45% growth rate in this decade. It was precisely this growing need that prompted the Look College of Engineering to launch this program which will be one of the first in the world to unify the theories and methodologies across most engineering disciplines into a multidisciplinary degree in Systems Engineering, and expose engineering students to the complexities and scope of the applications in System Engineering.

B. Program Structure

Systems Engineers are needed to design, organize, implement and manage large, complex operational, military and industrial organizations. Hierarchical, interactive and socioeconomic systems require special skills and methodologies to implement and sustain. Large, complex systems involve the talents and expertise of many traditional engineering disciplines. This program represents an effort to unify multiple engineering disciplines and expose the student to the wide array of problems and problem structures which are inherent in interdisciplinary systems. Hence, participating teaching faculty will be drawn from a wide range of engineering disciplines and will teach Systems Engineering within a common framework. Over half (18hrs) of the coursework will be in multidisciplinary system engineering concepts, whereas specific applications of Systems Engineering will
be obtained in 9 hours of domain specific systems engineering courses chosen by the student from individual engineering disciplines. To the best of our knowledge, this is the first program to be structured and executed in a multidisciplinary way in the State of Texas. It is unique in both execution and content.

C. Enrollment Projections

Once this new Master of Engineering program is launched, it is expected to grow to 100 students within 5 years. The projected growth rate and enrollment projections are shown in the following table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Change of Major/Transfers</th>
<th>New Students</th>
<th>Attrition</th>
<th>Graduation</th>
<th>Cumulative Headcount</th>
<th>Cumulative* FTES (New only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>0</td>
<td>10</td>
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<td>8</td>
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<td>3</td>
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<td>5</td>
<td>30</td>
<td>2</td>
<td>24</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

* These numbers will dictate the projected formula income in the funding source portion in Section III, Anticipated New Formula Funding.

FTES = full-time equivalent student.
Per CB guidelines, 1 FTES = 15 sch for UG, 12 sch for M, and 9 sch for D

II. Quality
A. Degree Requirements

1) **Degree** – The degree requires 30 hours of coursework: 9 (3 hr) courses; a seminar course (1 hr) and a capstone project course (2 hr).

2) **Number of hours in the major field (Systems Engineering)**
   18 hours of required coursework in Systems Engineering Fundamentals

3) **Total number of hours in the degree program** – 30 hours

4) **New and transfer guidelines** - A new student with any BS degree will generally be accepted into the degree program; however, every student will be required to have: 6 hours of calculus, linear algebra and 3 hours of statistics; and an overall GPR of 3.0 or higher. Each applicant is evaluated on his/her own merits, using these general guidelines. Transfer students are subject to the same criteria, but 3 hours of appropriate coursework might be approved as a free elective.

5) **For The Master’s degree program in Systems Engineering**:
New Program Request Form for Bachelor's and Master's Degrees
Page 3

<table>
<thead>
<tr>
<th>Non-thesis SCH</th>
<th>Thesis SCH</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. *Foundation Courses:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>b. Required Courses</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>(ISEN 640, ISEN 641, SYEN 642, SYEN 643, SYEN 644, SYEN 645)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Prescribed Electives</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>d. Elective Courses</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>(Any from a selected engineering discipline as approved on degree plans)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e1. Thesis/Dissertation</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>e2. Other (specify)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>(seminar SYEN 646, 1 hr, and capstone project SYEN 647, 2 hr)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL SCH REQUIREMENTS</strong></td>
<td><strong>30</strong></td>
<td></td>
</tr>
</tbody>
</table>

B. Curriculum

The proposed curriculum is comprised of three blocks of courses. The first is a block of 6 courses (18 hours), 2 that are offered by the Industrial and Systems Engineering Department and 4 that are multidisciplinary and which will be managed by the Engineering Academic and Student Affairs Office. The Second block of courses is 3 elective courses (9 hours) which are “domain specific”. Each student in the program will be allowed to choose a set of 3 courses (9 hours) in Systems Engineering application within an engineering field of his/her choice. It is expected that concurrent with this selection, a major advisor will be chosen within that field of interest. All courses which can be selected are currently being taught.

The third block of courses is a 1-hour seminar course featuring notable speakers from practicing Systems Engineers, and a 2-hour capstone project course directed by the student’s major advisor. The details of this curriculum summary are shown in the following table.

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Required Courses</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISEN 640</td>
<td>Systems Thinking &amp; Architectures</td>
<td>3</td>
</tr>
<tr>
<td>ISEN 641</td>
<td>Systems Engineering: Methods &amp; Frameworks</td>
<td>3</td>
</tr>
<tr>
<td>SYEN 642</td>
<td>Systems Performance Modeling</td>
<td>3</td>
</tr>
<tr>
<td>SYEN 643</td>
<td>Theory of Socio-Technical Systems</td>
<td>3</td>
</tr>
<tr>
<td>SYEN 644</td>
<td>Decision Making: Risk Analysis and Uncertainty</td>
<td>3</td>
</tr>
<tr>
<td>SYEN 645</td>
<td>Management of Engineering Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Prescribed Elective Courses</th>
<th>SCH</th>
</tr>
</thead>
</table>

AAR/Webmasters Updated 11/30/2010
D. Faculty
   a. Faculty assignments and profiles

The following faculty comprise the initial set of Professors currently teaching in the Look College of Engineering who are expected to teach one of the 6 required Foundation Knowledge courses.

<table>
<thead>
<tr>
<th>Name of Core Faculty and Faculty Rank</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program **</th>
<th>% Time Assigned To Program*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Lewis Ntaimo</td>
<td>PhD in Industrial and Systems Engineering, University of Arizona</td>
<td>ISEN 641</td>
<td>33%</td>
</tr>
<tr>
<td>Associate Professor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Raktim Bhattacharya Associate Professor</td>
<td>PhD in Aerospace Engineering, University of Minnesota</td>
<td>SYEN 643</td>
<td>33%</td>
</tr>
<tr>
<td>Dr. Mahmoud El-Halwagi Professor</td>
<td>PhD in Chemical Engineering University of California</td>
<td></td>
<td>33%</td>
</tr>
<tr>
<td>Dr. Ramundo Arroyave Associate Professor</td>
<td>PhD in Materials Science, Massachusetts Institute of Technology</td>
<td></td>
<td>33%</td>
</tr>
<tr>
<td>Dr. Luca Quadrifoglio Associate Professor</td>
<td>PhD, Industrial &amp; Systems Engineering, University of Southern California</td>
<td>SYEN 642</td>
<td>33%</td>
</tr>
<tr>
<td>Dr. Richard Malak</td>
<td>PhD in Mechanical engineering, Georgia Institute of Technology</td>
<td>SYEN 644</td>
<td>33%</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Support Faculty and Faculty Rank</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program</th>
<th>% Time Assigned To Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Richard Mayer</td>
<td>PhD in Industrial Engineering, Texas A&amp;M University</td>
<td>ISEN 641</td>
<td>33%</td>
</tr>
<tr>
<td>Adjunct Professor</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Page 5

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Degree and Institution</th>
<th>Course</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Alex Sprintson</td>
<td>Associate Professor</td>
<td>PhD in Electrical Engineering, Technion-</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Israel Institute of Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Eduardo Gilden</td>
<td>Assistant Professor</td>
<td>PhD in Aerospace Engineering, University of</td>
<td>SYEN</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Texas at Austin</td>
<td>642</td>
<td></td>
</tr>
<tr>
<td>Dr. Ricardo Gutierrez-Osuna</td>
<td>Professor</td>
<td>PhD in Computer Engineering, North Carolina</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>State University</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Don T. Phillips</td>
<td>Professor</td>
<td>PhD in Industrial Engineering, University of</td>
<td>SYEN</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arkansas</td>
<td>644</td>
<td></td>
</tr>
<tr>
<td>Dr. Mark Avnet</td>
<td>Assistant Professor</td>
<td>PhD in Systems Engineering, Massachusetts</td>
<td>SYEN</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Institute of Technology</td>
<td>645</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>643</td>
<td></td>
</tr>
</tbody>
</table>

*The percent of time each professor is assigned to the program is not for every academic semester in the academic year. This percentage of participation is only valid if the professor is teaching a course in any one semester (Fall, Spring or Summer). During that specific semester, the professor's department will be provided support from the college for the designated percentage of equivalent annual salary. It is expected that any one professor will only teach one course per year.*

**These are the courses that each faculty member affiliated with the degree program has expressed an interest in teaching.

b. What impact will the new program have on current programs in regards to faculty resources?

1. **How will the teaching load of current faculty be impacted?**

The current teaching loads of existing faculty and the amount of dollars spent on faculty salaries will not be affected. This new ME in Systems Engineering is a consolidation of faculty interests and a packaging of newly developed and long-standing courses.

2. **How will the teaching load of faculty assigned a portion of their time to the new program be covered?**

The faculty previously listed in Part A are already being paid out of State Formula funding. The current assigned teaching load will remain the same in terms of courses being taught by participating faculty. If in any one semester, a particular faculty member from any one department is assigned to teach one of the required Systems Engineering courses, this portion of his or her salary will be paid by funds from the Systems Engineering program administered by the office of the Dean of Engineering.

**Comment:** Systems Engineering courses are currently being taught by almost every department in the Look College of Engineering. Coursework currently being taught includes a body of *Foundation Knowledge* and *Domain Specific Application Knowledge.*

AAR/Webmasters Updated 11/30/2010
There is much duplication across the engineering college, particularly in Foundation Knowledge. This new Systems Engineering Master’s program will elevate all Foundation knowledge to the college level, and will be ideally taught only one time in the SYEN courses. This eliminates redundancy and duplication in departmental courses currently being taught. This should and will create additional time and resources to teach Application-Domain specific Systems Engineering principles. This new structure is a more efficient and cost-effective way to teach Systems Engineering across all engineering departments.

E. Students

New students who elect to pursue this new ME degree will be recruited using normal and currently existing student recruiting mechanisms. Advertising and program content will be distributed to potential students by (1) Color mail-out brochures and (2) A new COE website constructed for this program. The COE program currently supports a wide range of minority recruiting programs.

F. Library

All necessary library resources are already in place, both at the University level and via internet searches.

G. Facilities and Equipment

Each engineering department currently houses all of the laboratory, computational and pedagogical resources to support this program. Classrooms for program instruction will be assigned to support teaching needs.

H. Accreditation

There is no graduate program accreditation in this new field of study.

I. Evaluation

Normal student course evaluation procedures will be executed for this program. In addition, an internal steering committee will be formed to monitor effectiveness, quality and consistency. In addition, an advisory committee consisting of people from industry and academia will be formed to help guide and review the program.

III. Costs and Funding

New Five-Year Costs and Funding Sources

There are fundamentally no new faculty costs associated with teaching this program as (1) all faculty resources are already in place, (2) all software and labs
are already in place, and (3) student recruiting and enrollment will be done through existing mechanisms.

There are some new administrative costs associated with this new program. A new Systems Engineering program office will need to be established to coordinate recruiting, student inquiries and plan of study monitoring and control. These additional space requirements and program costs will be covered out of the existing budget for the College of Engineering and the Dean’s office. A summary of these new program costs are as follows. Course delivery costs are based upon teaching 3 courses each Fall and Spring semester; and one course during the Summer semester (7 courses per year).

<table>
<thead>
<tr>
<th>Five-Year Costs</th>
<th>Five-Year Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>Reallocated Funds³</td>
</tr>
<tr>
<td>Faculty</td>
<td>$0</td>
</tr>
<tr>
<td>Administration</td>
<td>$0</td>
</tr>
<tr>
<td>Graduate Assistants</td>
<td>$100,000</td>
</tr>
<tr>
<td>Clerical/Staff</td>
<td>$250,000</td>
</tr>
<tr>
<td>Other Personnel</td>
<td>$0</td>
</tr>
<tr>
<td>Facilities, Equipment &amp; IT Resources</td>
<td>$0</td>
</tr>
<tr>
<td>Supplies and Materials</td>
<td>$100,000</td>
</tr>
<tr>
<td>Library</td>
<td>$0</td>
</tr>
<tr>
<td>Other</td>
<td>$10,000</td>
</tr>
<tr>
<td>Total Costs</td>
<td>$460,000</td>
</tr>
<tr>
<td></td>
<td>Total Funding</td>
</tr>
<tr>
<td></td>
<td>$1,008,546</td>
</tr>
</tbody>
</table>

1...Based upon a 3 course (9 hours) full time annual teaching load per faculty member: a $120k per FTE faculty annual salary: and 7 SEEEN courses taught per year.
   And a program requirement to teach 6 SYEN courses per year

2...Advertising and website development

3... Based upon the following formula.: Credit hours * Weighting Factors
   New Formula Funding = (New students in years1-5) * (24 registered course hours spring & fall semesters) * (7.66) * (54.86)
   NFF=(100)*(24)*(7.66)*(54.86)

6... (7 courses/year)/(3 courses FTE) * ($120,000/FTE) * 5 years

**FTE Personnel Involved** in Delivery of New Program
New Program Request Form for
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<table>
<thead>
<tr>
<th>Personnel</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Administration</td>
<td>New</td>
<td>.5</td>
<td>.5</td>
<td>.5</td>
<td>.5</td>
<td>2.50</td>
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<tr>
<td></td>
<td>Reassignment</td>
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</tr>
<tr>
<td>CORE Faculty*</td>
<td>New</td>
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<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Reassignment</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>SUPPORT Faculty</td>
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<td>0</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Reassignment</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Graduate Student Assts**</td>
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<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Reassignment</td>
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<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Clerical/Other Support ***</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Reassignment</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>New</td>
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<td></td>
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<tr>
<td></td>
<td>Reassignment</td>
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<td></td>
<td>10</td>
</tr>
</tbody>
</table>

* Reassigned, existing faculty in COE: Based upon 6 courses taught per year; 3 courses per FTE
** Two per year to assist program director and clerical staff (50% per FTE)
*** Program clerical staff (1) to manage budgets and records
<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Cost Sub-Category</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
<th>4th Year</th>
<th>5th Year</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Salaries</td>
<td>(New)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(Reassignments)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Program Administration</td>
<td>(New)</td>
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<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
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AAR/Webmasters Updated 11/30/2010
### ANTICIPATED SOURCES OF FUNDING

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<th>Funding Category</th>
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<th>2&lt;sup&gt;nd&lt;/sup&gt; Year</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Year</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; Year</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; Year</th>
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<tr>
<td>IV. Federal Funding (In-hand only)</td>
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<td><strong>TOTALS</strong></td>
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</table>
Based upon the following formula: Credit hours * Weighting Factors

* New Formula Funding = (New students in years 1-5) * (24 registered course hours spring & fall semesters) * (7.66) * (54.86)  
For example, Year 1: NFF = (10) * (24) * (7.66) * (54.86)

## NON-FORMULA SOURCES OF FUNDING

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<td>#2  N/A</td>
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<tr>
<td>V. Other Funding*</td>
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</tbody>
</table>

AAR/Webmasters Updated 11/30/2010
MEMORANDUM

TO: Pam R. Matthews, Ph.D.
    Associate Provost
    Texas A&M University

THROUGH: Brett P. Giroir, M.D.
    Executive Vice President and CEO
    Texas A&M Health Science Center

FROM: Vemon L. Tesh, Ph.D.
      Vice President for Academic Affairs

SUBJECT: Closure of Master of Science in Public Health Degree in Health Policy and Management Program

April 3, 2014

The School of Public Health (SPH) requests closure of the Master of Science in Public Health (MPSH) degree in Health Policy and Management (CIP 51.0701.00), effective September 1, 2014.

Currently, there are no students in the program, and no students have been admitted to the program in recent years. Consequently there is no formal teach-out plan required, but we have drafted a letter explaining the circumstances for you to send to SACSCOC.

Attached you will find the following documents for transmittal of the request:

- A draft cover letter from TAMU to TAMUS;
- THECB Certification Form for Program Changes, Closure of the SRPH MSPH in Health Policy and Management;
- Illustration of THECB program inventory change;
- A draft cover letter from TAMUS to the THECB.

In addition, you will find a draft letter from TAMU to SACSCOC describing teach-out circumstances.

With your review and approval, please forward the materials for the THECB to the Texas A&M Provost for Academic Affairs, and submit the teach-out information to SACSCOC.

Attachments
Certification Form for Program Revisions  
Texas Higher Education Coordinating Board

Directions: An institution shall use this form to request an administrative change that meets all criteria for automatic approval in Coordinating Board Rules, Chapter 5, Subchapter C, Section 5.44: (a) The administrative change has institutional and board of regents approval, (b) the institution certifies that adequate funds are available to cover the costs of the administrative change, (c) new costs during the first five years would not exceed $2 million, and (d) the administrative change meets all other criteria in Section 5.47 of Board Rules (relating to Criteria for Administrative Change Requests).

If an administrative change does not meet the criteria above, an institution must submit a request using the Administrative Change Request Form.

An institution may also use this form to report the creation or change to a unit that does not administer a certificate or degree program (e.g., a research center) to update the Program Inventory.

Information: Contact the Division of Academic Affairs and Research at 512/427-6200 for more information.

Administrative Information

1. Institution: Texas A&M University

2. Description of Administrative Change: Discontinue the Master of Science in Public Health (MSPH) degree in Health Policy and Management. Remove from the degree program inventory.

3. Program Inventory – CIP for MSPH in Health Policy and Management to be removed is 51.0701.00

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<td>MHA (57 SCH)</td>
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</table>

4. Implementation Date: September 1, 2014

5. Contact Person: Provide contact information for the person who can answer specific questions about the program.
   Name: Dr. Antonio Rene
   Title: Associate Dean for Academic Affairs
   E-mail: aarene@srph.tamhsc.edu
   Phone: 979-458-2239
Signature Page

I hereby certify that all of the following criteria have been met in accordance with the procedures outlined in Coordinating Board Rules, Chapter 5, Subchapter C, Section 5.44:

(a) The administrative change has institutional approval.

(b) The institution certifies that adequate funds are available to cover the costs of the administrative change.

(c) New costs during the first five years would not exceed $2 million.

(d) The administrative change meets all other criteria in Section 5.47 of Board Rules (relating to Criteria for Administrative Change Requests):

   (1) The administrative overhead of universities and health-related institutions should be kept low to insure that most of the funds appropriated for higher education go toward the costs of instruction.
   (2) The administrative costs of new academic units, particularly colleges and schools, should not be so high as to detract from the quality of the programs the administrative unit contains.

I understand that the Coordinating Board will update the program inventory of the institution to reflect the administrative change if no objections to the proposed administrative change are received during the 30-day public comment period.

[Signature]
Chief Executive Officer

04/04/14
Date

2. TAMUS Office of Academic Affairs Approval

On behalf of the A&M System, I certify that the Office of Academic Affairs has approved the administrative unit.

[Signature]
James R. Hallmark, Ph.D.
Date
Discontinue Degree Program
MSPH in Health Policy and Management

Current Program Inventory:

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Page 1 of 3
### Proposed Program Inventory

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Teach-out Plan
Texas A&M University
Health Science Center School of Rural Public Health
Master of Science in Public Health in Health Policy and Management

1. Date of closure (date when new students will no longer be admitted)

The School of Public Health intends to officially close the program effective September 1, 2014. However, no new students have been admitted into the program for a number of years.

2. An explanation of how affected parties (students, faculty, staff) will be informed of the impending closure.

As there are no students currently enrolled in the program, no students will be affected by the closure.

The Department of Health Policy and Management will continue to operate the department’s other degree programs (MPH, MHA, PhD), so the program closure will have no impact on faculty or staff. Faculty and staff in the department have already been notified of the closure.

There are no courses in the catalog specific to the MSPH degree program, so the closure will not affect the availability of courses offered.

3. An explanation of how all affected students will be helped to complete their programs of study with minimal disruption

As there are no students currently enrolled in the program, no students will be affected by the closure.

4. An indication as to whether the teach-out plan will incur additional charges/expenses to the students and, if so, how the students will be notified.

As there are no students currently enrolled in the program, no students will be affected by the closure.

5. Signed copies of teach-out agreements with other institutions, if any

N/A

6. How faculty and staff will be redeployed or helped to find new employment

The Department of Health Policy and Management will continue to operate the department’s other degree programs (MPH, MHA, PhD), so the program closure will have no impact on faculty or staff.

7. If closing an institution, arrangement for the storing of student records, disposition of final financial resources and other assets.

N/A
MEMORANDUM

TO: Pam R. Matthews, Ph.D.
Associate Provost
Texas A&M University

THROUGH: Brett P. Giroir, M.D.
Executive Vice President and CEO
Texas A&M Health Science Center

FROM: Vernon L. Tesh, Ph.D.
Vice President for Academic Affairs

SUBJECT: Closure of the Masters in Public Health in Health Policy and Management Program in McAllen

The School of Public Health (SPH) requests closure of the off-campus Master of Public Health (MPH) in Health Policy and Management program in McAllen, effective September 1, 2014. This program is a face-to-face distance education extension of the MPH in Health Policy and Management based at the main campus in College Station. Because the school will continue to offer the program in College Station, there is no change to the Texas Higher Education Coordinating Board’s (THECB) program inventory.

The school’s request for closure of this program is based on the Department of Health Policy and Management’s determination that a focus on programs within driving distance will better allow it to use and grow its core faculty.

Attached you will find the following documents for transmittal of the request:

- A draft cover letter from TAMU to TAMUS;
- THECB Certification Form for Program Changes, Closure of the SPH MPH in Health Policy and Management Program in McAllen;
- A draft cover letter from TAMUS to the THECB.

In addition, please find attached a draft letter from TAMU to SACSCOC for submission of the teach-out plan.
With your review and approval, please forward the materials for the THECB to the Texas A&M Provost for Academic Affairs, and submit the teach-out plan to SACSCOC.

Attachments
Certification Form for Program Revisions
Texas Higher Education Coordinating Board

Directions: An institution shall use this form to request an administrative change that meets all criteria for automatic approval in Coordinating Board Rules, Chapter 5, Subchapter C, Section 5.44: (a) The administrative change has institutional and board of regents approval, (b) the institution certifies that adequate funds are available to cover the costs of the administrative change, (c) new costs during the first five years would not exceed $2 million, and (d) the administrative change meets all other criteria in Section 5.47 of Board Rules (relating to Criteria for Administrative Change Requests).

If an administrative change does not meet the criteria above, an institution must submit a request using the Administrative Change Request Form.

An institution may also use this form to report the creation or change to a unit that does not administer a certificate or degree program (e.g., a research center) to update the Program Inventory.

Information: Contact the Division of Academic Affairs and Research at 512/427-6200 for more information.

---

Administrative Information

1. **Institution:** Texas A&M University

2. **Description of Administrative Change:** Discontinue the off-campus Master of Public Health (MPH) in Health Policy and Management Program in McAllen. This program is a face-to-face distance education extension of the MPH in Health Policy and Management based at the home campus in College Station. This change will close the off-campus offering of the degree in McAllen only.

3. **Program Inventory** – There is no change to the Program Inventory; the MPH in Health Policy and Management degree will continue to be offered at the main campus in College Station.

4. **Implementation Date:** September 1, 2014

5. **Contact Person:** Provide contact information for the person who can answer specific questions about the program.
   - **Name:** Dr. Antonio Rene
   - **Title:** Associate Dean for Academic Affairs
   - **E-mail:** aarene@srph.tamhsc.edu
   - **Phone:** 979-458-2239

AAR

Updated 7.30.09
Signature Page

I hereby certify that all of the following criteria have been met in accordance with the procedures outlined in Coordinating Board Rules, Chapter 5, Subchapter C, Section 5.44:

(a) The administrative change has institutional approval.

(b) The institution certifies that adequate funds are available to cover the costs of the administrative change.

(c) New costs during the first five years would not exceed $2 million.

(d) The administrative change meets all other criteria in Section 5.47 of Board Rules (relating to Criteria for Administrative Change Requests):

(1) The administrative overhead of universities and health-related institutions should be kept low to insure that most of the funds appropriated for higher education go toward the costs of instruction.

(2) The administrative costs of new academic units, particularly colleges and schools, should not be so high as to detract from the quality of the programs the administrative unit contains.

I understand that the Coordinating Board will update the program inventory of the institution to reflect the administrative change if no objections to the proposed administrative change are received during the 30-day public comment period.

[Signature]

Chief Executive Officer

04/04/14

Date

2. TAMUS Office of Academic Affairs Approval

On behalf of the A&M System, I certify that the Office of Academic Affairs has approved the administrative unit.

[Signature]

James R. Hallmark, Ph.D.

Date
Teach-out Plan
Texas A&M University
Health Science Center School of Rural Public Health
Master of Public Health in Health Policy and Management
Off-campus Face-to-face Distance Education Program in McAllen, Texas

1. Date of closure (date when new students will no longer be admitted)

As of August 2013, the school was no longer admitting students for the Health Policy and Management MPH program in McAllen.

2. An explanation of how affected parties (students, faculty, staff) will be informed of the impending closure.

Dr. Rebecca Wells, Head of the Department of Health Policy and Management, visited with McAllen students, faculty, and staff in April, 2013 to let them know that the program would not be admitting new students and to explain why the department was making this transition.

3. An explanation of how all affected students will be helped to complete their programs of study with minimal disruption

The Department of Health Policy and Management developed an individual degree plan for each student, which each student reviewed and signed in the spring of 2013. By academic year 2014-15, there will only be five students in this program in McAllen, none of whom will need to take their remaining one to two classes on site.

4. An indication as to whether the teach-out plan will incur additional charges/expenses to the students and, if so, how the students will be notified.

We do not anticipate the teach-out plan creating any additional expenses for students.

5. Signed copies of teach-out agreements with other institutions, if any

N/A

6. How faculty and staff will be redeployed or helped to find new employment

The discontinuation of the program implies the loss of one faculty position. Dr. Wells informed that professor in March 2013 of this implication. In spring of 2014 the professor received a letter informing that the position would not be renewed for academic year 2014-15.

7. If closing an institution, arrangement for the storing of student records, disposition of final financial resources and other assets.

N/A. The Institution and the McAllen campus will remain open.
MEMORANDUM

TO: Mark J. Zoran, Ph.D.
Chair, Graduate Council
Texas A&M University

THROUGH: Brett P. Giroir, M.D.
Executive Vice President and CEO
Texas A&M Health Science Center

FROM: Vernon L. Tesh, Ph.D.
Vice President for Academic Affairs

SUBJECT: Proposal for an Executive Master of Health Administration (MHA) Distance Education Program: Off-Campus (Houston) Face-to-face

Please find attached a proposal to establish an Executive Master of Health Administration program in Houston, TX. This program will be an expansion of the School of Public Health's current MHA program offered at the College Station campus, tailored as an executive program for mid-career health professionals. The proposal has been approved by the Health Science Center Academic Affairs Advisory Council and the Executive Committee.

It is our understanding that because the program is an off-campus expansion of an existing degree program and has a total five year cost of less than $2 million, the proposal can be reviewed for approval by the Texas A&M System Vice Chancellor for Academic Affairs rather than the Board of Regents.

We request that you route the proposal through the appropriate processes for TAMU approval.

Attachments:
Distance Education Off Campus (Face-to-face) Request Approval Form, MHA Houston
TAMUS Distance Education Program Proposal: Off Campus Face-to-Face, MHA Houston
THE TEXAS A&M UNIVERSITY SYSTEM
DISTANCE EDUCATION PROGRAM PROPOSAL:
OFF CAMPUS – FACE-TO-FACE
(BACHELORS OR MASTERS PROGRAMS ONLY)

Directions: An institution shall use this form to propose an “existing” bachelor’s or master’s degree program they wish to be offered off campus – face-to-face. This form must be completed and signed by the university president or chief academic officer. Upon completion, attach the “Approval Form” and submit it to the A&M System Office of Academic Affairs at AA-Agendaltens@tamus.edu

Note: The A&M University System supports the delivery of bachelors and masters degree programs through distance education at an off campus location when they meet the following standards:
- the program is of high quality,
- it is delivered in a way that preserves this high quality,
- the program meets a well-documented state need, and
- the program can be delivered at a reasonable cost.

Off campus - face to face program requests will be approved through the Office of Academic Affairs if the following conditions are met:
- Be an existing degree at an A&M System institution.
- The additional site(s) where the program is to be offered must be within the state of Texas.
- At the proposed site(s), at least 50% of the faculty in the proposed program and at least 50% of the courses in this program are taught by faculty with full-time academic appointments at the A&M System institution offering the program.
- The proposal must adhere to all the THECB requirements, including notification of neighboring institutions of the teaching site or administrative council approval of the Multi-Institution Teaching Center (MITC).

If these conditions are not met then the proposal will need to be approved at the Board of Regents level.
Information: Contact the A&M System Office of Academic Affairs at 979-458-7421 (Irma Harper)

*Note: If this is a new site additional reporting is required by SACS.

---

Administrative Information

1. **Institution:** The Texas A&M University System Health Science Center

2. **Program to be Offered (Include CIP code):** 51.2211.00

3. **Off Campus Program site –**
   HSC Building in Houston (Institute of Biosciences and Technology), at 2121 W. Holcombe Blvd in the Texas Medical Center

4. **Program/Site Description –** Where will the program be delivered? Why was this site chosen? Is this an approved site? Describe the program and the educational objectives.

Classes will be held at HSC facilities in the Texas Medical Center. We chose this location for its convenience to mid-career professionals in this area, who are our primary market. Within the few square blocks of the Texas Medical Center is the greatest concentration of health care and health professional resources of any city on earth. Based on preliminary discussions with Texas Medical Center leaders and a quantitative analysis of supply of and demand for MHA programs, we find evidence of high unmet demand for a face-to-face professional MHA program, a limited number of suppliers of MHA degrees, weak options in terms of substitutes, and no apparent new entrants. There is currently no other such focused Master’s level program offered in Houston, as the existing programs are intended for individuals who are within a few years of earning their bachelor’s
degree or have very limited healthcare experience, and are provided in a manner that is not necessarily amenable to working professionals (e.g., offered during the weekday). These forces make the Houston market attractive for a professional MHA program offered through the Texas A&M University Health Science Center.

The HSC Space Committee is currently considering our request for use of the HSC building at the Texas Medical Center, which is an approved site. We expect approval of the HSC building for two wired classes, because, as we describe immediately below, the EMHA will be a weekend program, and classrooms in this building are currently not in use on the weekends. We have also requested two offices in the HSC building— one for a Houston-based staff person who would both facilitate ongoing student recruitment and provide student support, and the other for our College Station-based faculty to use when teaching in Houston.

The Executive MHA program will be a 12-course, 48-credit hour, master’s degree that will take two years to complete. Students will be admitted to the program in August of each year and graduate with the MHA degree in two years. This delivery model is a compressed version of the current 57-credit hour MHA program tailored to a different student population. The course sequence will be lock-step, with no electives, and each course will be taught in-person on weekends at the Texas Medical Center campus. Each course will be taught over two consecutive months. Instruction will occur primarily through an intense weekend a month of in-person classes to experienced health professionals who need management knowledge and skills to lead more effectively. The program content will be consistent with that of our current MHA program and address provider organizations (e.g., hospitals, physician offices/groups, clinics), managed care organizations, health insurers, and a variety of organizations that supply or otherwise support public or private health service organizations. Additional emphases will include health systems management, health policy, health finance, human resources management, and health planning and marketing.

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

The Department of Health Policy and Management within the School of Public Health, Health Science Center

6. Proposed Implementation Date — Report the first semester and year that students would enter the program.

August 2015

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

Name: Murray Côté, Ph.D.
Title: Associate Professor, MHA Program Director
E-mail: mjcote@srph.tamhsc.edu
Phone: 979-458-3031

Format for Existing Bachelors or Masters Degree Program
Off Campus – Face-to-Face Request

Step One: There are specific requirements for notification of offering prior to proposal submission.
• Is this degree being offered at a Multi-Institution Teaching Center (MITC)? If so, the university is required to obtain approval from MITC administrative council. Supportive documentation from this approval must be sent to THECB and A&M System Distance Education contacts.

• If this degree is not offered at a MITC, then the university must send email notification to area institutions within a 50 mile radius of proposed site. Email notification must be sent at least 60 business days prior to offering and must be copied to the THECB and A&M System Distance Education contacts.

Step Two: For each of the following components, include the requested information:

1. High Quality Program
   • Explain how the degree program and its delivery would be considered as a high quality program.

Through numerous preliminary discussions with executive decision-makers in the Texas Medical Center as well as additional market analysis, we have developed a model for which we anticipate strong industry support and student demand. This assessment is based in part on Texas A&M Health Policy and Management’s unique strengths. In its first decade, the Department of Health Policy and Management engaged in rapid and orderly growth through a balanced focus on innovative education, research, and outreach. After only nine years, the MHA program was a Top 25 U.S. News and World Report program. The average age of the programs ranked above the A&M’s MHA was 40+ years. The maximum, highest levels of accreditations have been earned by the School of Rural Public Health and the Department’s MHA program.

The College Station residential MHA has established a strong track record in producing top quality health care administrators, ready to lead innovative disease management programs, health information systems, Lean/Six Sigma, culture change, and patient-centered medical homes. A number of MHA graduates are now well positioned to refer colleagues to our EMHA. For instance, graduates from Texas A&M’s MHA program have recently served administrative residencies or are employed in the Houston area at Baylor Medical Center, Memorial Hermann, Methodist Health System, St. Luke’s Episcopal Health System, the Veterans Administration, St. Joseph Health System, and CHRISTUS Health System.

Another unique strength of the Department is its role as home to the National Science Foundation funded multi-university Center for Health Organization Transformation (CHOT). CHOT conducts research supporting implementation of evidence-based strategies for improving health care delivery through cooperative research among universities, health systems, and other health-related industries. Over the past six years research CHOT has developed formal working relationships with administrators and allied health professionals at three major Texas Medical Center health systems (Texas Children’s Hospital, St. Luke’s Health System, and MD Anderson Cancer Center) and informal working relationships with others (Texas Medical Center Corporation and the Southeast Texas [Greater Houston] Chapter of the ACHE). The outgoing Director of CHOT, Larry Gamm, served on the Board of the Greater Houston Chapter of the American College of Healthcare Executives (ACHE) and also chaired its academic liaison committee. Dr. Gamm was also a recipient of the ACHE Regent’s Award for Exemplary Service. The incoming Director of CHOT, Bita Kash, is highly involved in the Chapter and a Fellow of ACHE. The Department’s Executive in Residence, Jack Buckley, now serves on the Board of this ACHE chapter.
CHOT-related successes include increased evidence-based guidance for leaders on the direction of their innovation efforts and feedback on potential improvements from such efforts. Research projects with St. Luke’s, Texas Children’s Hospital, Texas Children’s Pediatrics, and MD Anderson have included: 1) evaluating the impact of the Studer Group intervention on medical-surgery nurses; 2) leveraging electronic health record implementations for subsequent change interventions; 3) improving scheduling systems for downstream services related to mastectomy; and 4) reducing unnecessary sleep disruptions in neo-natal intensive care units.

CHOT also currently has plans to offer a Healthcare Executive Leadership Training program to health service organizations who are seeking to offer their employees and staff physicians continuing education credits (CECs). The Center’s Assistant Director will serve not only as a coordinator for the program as it is developed, but will also as one of the lead instructors. This program is currently in development in partnership with the Mays Business School and already has agreements in place with Memorial Hermann Health System and Houston Methodist Hospital. Such CHOT-generated relationships with Texas Medical Center leaders are another reason why Health Policy and Management is uniquely well suited to offer the proposed Executive Masters Program in Health Administration.

2. State Need

The Institute of Medicine has repeatedly noted the need for leadership development among experienced public health professionals (IOM report on the Future of Public Health (http://iom.edu/Reports/1988/The-Future-of-Public-Health.aspx; underscored again in 2002). In recent years, the pace, scale, and unpredictability of change have been accelerating. The Patient Protection and Affordable Care Act is reducing the number of people without health insurance as well as shifting health care providers’ financial incentives toward prevention. However, no one knows how much of which will occur or how quickly. Health care leaders thus face an extremely challenging balancing act as they seek to sustain their organizations’ economic viability and improve public health without placing undue burden on the rest of the economy.

Pressure on health care is so great that some experts (such as Clayton Christensen, in The Innovator’s Prescription (2009)) predict that most of today’s health care organizations cannot change internally to survive in their present form, and are likely to be displaced by new forms of health care delivery. They may be right, but the collateral damage associated with the demise of much of the current health care industry would be extremely painful for governments, businesses, poorly served patients, and health care professionals. Beginning now, it is worth the effort to build health care organizations’ managerial capacity to transform from within.

The health care leadership challenges that characterize the United States are arguably applicable to Texas, only more so. In particular, the Texas Medical Center is a global nexus of health care innovation. At the same time, Texas leads the United States in its rate of uninsured (Kaiser Family Foundation), an economic status associated with diminished health care access and poor health outcomes. Among the almost 40% of Texas residents who are Hispanic, those who are undocumented experience particularly disproportionate burden of disease. In recent years, increasing proportions of Americans of all races and ethnicities have struggled to meet basic needs. The result is an uneasy coexistence of world class quality and shocking gaps in access and health outcomes.
Unfortunately, in Houston as elsewhere, there is a severe shortage of education and research on how to initiate and sustain organizational change. The Centers for Medicare and Medicaid Services (CMS), for example, has only recently launched initiatives to help a small number of health systems innovate. In light of challenging environments as well as major emerging opportunities, leaders of major health systems within the Texas Medical Center have shared with the authors of this proposal the need for high quality health care management education.

3. How does your program meet the needs of the state and locality?

The proposed EMHA will build individuals’ managerial capacity to overcome the complex, dynamic problems their organizations face, often within the context of substantial government regulation, interdependence with a range of autonomous organizations, and severe resource constraints. In addition, this program will serve as an interdisciplinary and inter-organizational learning collaborative. Both facets are key collateral benefits of the program’s structure. First, participants from a range of clinical and non-clinical backgrounds will learn to appreciate the knowledge, assumptions, and values of each other’s disciplines (e.g., nursing, various medical specialties) bring to health care. This will help students work more effectively with individuals from other disciplines within their own organizations. Second, participants will work closely with employees of other organizations, which, while geographically proximate, may have very little current contact or even be rivals. Thus, the second key collateral benefit of the planned program structure will be inter-organizational learning among rising leaders of area providers. We anticipate that EMHA graduates’ collaborations across hospitals, physician groups, health departments, and other providers will indirectly but powerfully improve population health in Texas over time, especially in the Houston area.

4. Administrative Structure:
   - Identify the person/office directly responsible for the overall management of the offering.

Murray Côté, Ph.D., Department of Health Policy and Management, School of Rural Public Health, Texas A&M Health Science Center

5. Financial Implications
   - Explain how this program is being delivered at a reasonable cost.

The proposed Executive MHA degree is priced significantly lower than comparable Texas based programs. According to our budget, the total two year cost of the EMHA will be approximately $33,000. We believe that even participants who need to borrow money to pay for this degree could pay off that debt within several years. For many students, this cost will be defrayed by employers. For instance, Ben Melson, CFO at Texas Children’s Hospital is planning on sponsoring several of his staff every year to join the EMHA program.
6. Courses
- List the courses involved in the program.

Year 1
1. **EMHA 606 (Health Systems Management)** – This course introduces conceptual frameworks and practices associated with key functions in the management of complex health organizations.

2. **EMHA 601 (Population and Public Health for Health Professionals)** – An introduction and discussion of the basic principles of population and public health including: epidemiology, environmental and occupational health, health management, and social and behavioral determinants of health.

3. **EMHA 602 (Managing Healthcare Data and Information)** – This course will cover analytical techniques to support managerial decision making in health care. The course will cover descriptive statistical techniques for the presentation of health care data and applicability of the descriptive statistical techniques, a survey commonly used inferential statistical techniques for data analysis is presented. Throughout the course material, emphasis is on the sources and uses of health care data and information for decision-making, and on the interpretation and evaluation of health care research. Course introduces computer-based information systems, architectures and applications in the management of health services organizations. It also addresses systems designs, data management systems, data access and communications, and the implications of expanding technological capacities for information management systems.

4. **EMHA 661 (Health Economics)** – Provides basic concepts in economic theory and analysis applied to health care delivery in the United States. Course addresses supply and demand issues for health services, payment systems and health insurance including issues in health delivery in a competitive market and public sector involvement.

5. **EMIIA 623 (Healthcare Financial Management)** – Course is designed as an overview of health financing and techniques for financial management in health services settings, blending theory and practice through lecture, discussion and case analysis. This course also examines major sources of public and private health services funding.

6. **EMHA 617 (Quality and Process Improvement)** – Overview of evolving health delivery system quality mechanisms and approaches for maximizing quality improvement in healthcare organizations. Includes concepts and practices of quality assessment, control and improvement, and accreditation and outcome analysis in service delivery systems.

Year 2
7. **EMHA 620 (Operations Management)** – This course is organized around the types of tactical and operational decisions made by health care operations managers. Tactical decisions are medium- and long-term decisions that
together determine the processes by which health care services are produced and delivered, while operational decisions are short-term decisions concerned with utilizing resources to meet the objectives of the organization in an efficient manner. Building on a “system-based” approach to the health care environment, analytical tools are examined to aid problem solving and decision-making in health care organizations.

8. EMHA 616 (Management of Human Resources) – An introduction to the range of human resources issues facing the health delivery system administrator from benefits to grievances and human resources management in health organizations. Course also covers personnel practices such as job analysis and description, recruitment, selection and compensation in various health delivery system settings.

9. EMHA 633 (Health Law and Ethics) – Course covers torts, contract law, corporate liability, malpractice, key federal and state regulations, and records management relative to health care. Important health case law is discussed. Ethical considerations are discussed as they relate to the law and management of health delivery systems.

10. EMHA 614 (Strategic Planning and Marketing) – This course offers an introduction to strategic planning and management in health services organizations. Processes and formats employed in strategic planning and marketing are presented and applied in case studies and a final project. Elements of market assessment, environmental analysis and strategy development are presented and applied to course practices.

11. EMHA 640 (Health Policy and Politics) – This course examines public and private sector institutions responsible for health policy development at the national and state levels, the interaction of national and regional health systems to create and implement rural health policies, and public programs providing health coverage, particularly those targeting rural residents.

12. EMHA 680 (Health Systems Leadership) – Provides opportunity to integrate essential content and employ tools acquired in all preceding classes by assessing current and contemporary issues confronted by health service organizations leaders. adjunct
7. Faculty

- List faculty members that will be involved in the program, indicating highest earned degree/institution and their anticipated contribution to the program.

<table>
<thead>
<tr>
<th>Name of Core Faculty and Faculty Rank</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g.: Robertson, David Asst. Professor</td>
<td>PhD. in Molecular Genetics Univ. of Texas at Dallas</td>
<td>MG200, MG285 MG824 (Lab Only)</td>
</tr>
<tr>
<td>Jennifer Griffith Assistant Professor</td>
<td>Dr.P.H., Health Behavior and Health Education School of Public Health, the University of North Carolina at Chapel Hill</td>
<td>EMHA 601</td>
</tr>
<tr>
<td>Hye-Chung Kum Associate Professor</td>
<td>Ph.D. Computer Science University of North Carolina at Chapel Hill</td>
<td>EMHA 602</td>
</tr>
<tr>
<td>New hire</td>
<td>TBD</td>
<td>EMHA 606</td>
</tr>
<tr>
<td>New hire</td>
<td>TBD</td>
<td>EMHA 614</td>
</tr>
<tr>
<td>Jane Bolin Professor</td>
<td>Ph.D. in Health Services Research The Pennsylvania State University</td>
<td>EMHA 616</td>
</tr>
<tr>
<td>Murray Côté Associate Professor</td>
<td>Ph.D. in Management Science Texas A&amp;M University</td>
<td>EMHA 617</td>
</tr>
<tr>
<td>New hire</td>
<td>TBD</td>
<td>EMHA 620</td>
</tr>
<tr>
<td>Sean Gregory Assistant Professor</td>
<td>Ph.D. in Health Services Research, Policy &amp; Administration School of Public Health University of Minnesota</td>
<td>EMHA 623</td>
</tr>
<tr>
<td>Jane Bolin Professor</td>
<td>Ph.D. in Health Services Research The Pennsylvania State University</td>
<td>EMHA 633</td>
</tr>
<tr>
<td>New hire</td>
<td>TBD</td>
<td>EMHA 640</td>
</tr>
<tr>
<td>Robert Ohsfeldt Professor</td>
<td>Ph.D. Economics University of Houston</td>
<td>EMHA 661</td>
</tr>
<tr>
<td>New hire</td>
<td>TBD</td>
<td>EMHA 680</td>
</tr>
</tbody>
</table>

- Specify course(s) each faculty member would teach and their current involvement with the program by the semester the course will be taught.

All of the faculty listed above will already be teaching the class(es) ascribed to them in College Station prior to teaching these classes in Houston.

- How will faculty resources be provided, that is, hiring additional faculty, reallocating faculty resources from other programs, etc. to accommodate the increase in student enrollment?
We have requested $350,000 in start-up funds from the Health Science Center. These funds will fully cover the opportunity costs of shifting current Health Policy and Management faculty from College Station to Houston classes and the costs of hiring three additional faculty and one staff person, as well as such non-personnel costs as those relating to program marketing and travel. We have developed plans for covering every class in both existing College Station programs and the EMHA in Houston through AY 2017, the point at which we will be offering both first and second year classes in Houston, i.e., the program will be fully operational. All faculty listed in this proposal have agreed to teach in the EMHA.

8. Evaluation
   - How will your institution monitor the quality of the program and student learning outcomes for this specific location?

Department leadership is committed to evidence-based education through ongoing advising, student use of professional portfolios, and assessment of educational competencies from the National Center for Healthcare Leadership and the Association of Schools and Programs of Public Health. In addition, the MHA program has an annual evaluation of overall program processes along with standard course evaluations. The information from advising, teaching evaluations, performance on competencies, and graduating student exit interviews is shared in summary form with MHA program faculty every year.

The proposed Executive MHA program will also be supported by short and long range planning for SRPH conducted by the Dean’s Office, the Executive Committee (Department Heads, Directors, Associate Dean, Business Affairs), and Department Heads, with periodic review by the Academic Council (Dean, Associate Dean, Department Heads, Chairs of Standing Committees, faculty and student representatives).

   - Describe procedures for evaluation of the program and its effectiveness in the first five years of the program, including admission and retention rates, program outcomes assessments, placement of graduates, changes of job market need/demand, ex-student/graduate surveys, or other procedures.

The success of the Executive MHA program in Houston will be closely monitored by the MHA Program Director and the SRPH Office of Academic Affairs. This will include tracking admission and retention rates of students annually, including representation of traditionally under-represented racial and ethnic groups. In addition, an annual survey of graduates will be conducted to determine current occupational status, career mobility, satisfaction with preparation, and suggested areas for improvement across all aspects of the Executive MHA program. Because EMHA students will generally be working full time when they enter our program, our goal for participants is not job placement as much as enhanced effectiveness in their current positions. However, one metric of program success will be promotions during and after program participation. Additional studies of the job market and an evaluation of employers would also be conducted every third year or as needed. This information is used not only for internal monitoring of program effectiveness but also for accreditation for both the Council on Education for Public Health (CEPH) and the Southern Association of Colleges and Schools Commission on Colleges (SACS-COC).
• How would evaluations be carried out for this specific location?

Students will complete a standard course evaluation online for every class. In addition, the head of the MHA program (Dr. Murray Côté) will debrief in person with every cohort every semester about their experience of the program and how the department can better support their learning.

**Step Three:** Complete, sign and submit with proposal the “Texas Higher Education Coordinating Board Certification Form for Off Campus Programs” on the following page.

**Texas Higher Education Coordinating Board**

**Certification Form for Electronically Delivered and Off-Campus Education Programs**

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 student 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 Health Science Center, I assert that the preceding Coordinating Board criteria have been met for all courses and programs that will be delivered electronically and off-campus face-to-face.

[Signature]
Chief Academic Officer or President

April 4, 2014
Date

Name: Brett Giroir, MD
Title: Executive Vice President and CEO, TAMHSC

THECB 6/2010
DISTANCE EDUCATION
OFF CAMPUS (FACE-TO-FACE) REQUEST
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 : Off-Campus (Face-to-Face) Authorization Request

List the proposed degree and CIP code:

Degree: Master of Health Administration

CIP Code: 51.2211.00

When is the effective date of the proposed program? August 2015

Higher Education Center: No area notification required. Complete form and send to System for approval. Check the one that applies.

☒ University or System Center: administered by a university system or individual institution with minimal administration and locally provided facilities.

☐ Multi-Institutional Teaching Center (MITC): administered between two or more public institutions and/or independent institution with minimal administration. MITC requires approval from the administrative council of the proposed offering. Attach this approval to the proposal.

☐ Higher Education Teaching Site: an "off-campus teaching center that promotes access in an area not served by other public universities." Teaching sites offer limited courses and/or programs. Notification of offerings must be sent to peer institutions (i.e., public universities and centers) within a 50 mile radius of proposed site and within 60 business days prior to effective date. (System and CB should be copied on notification).

Degree will be offered at the following location(s): Please include zip code.

HSC Building 2121 W. Holcombe Blvd, Houston, TX 77030 (in the Texas Medical Center)

The HSC Building is not currently in use during weekends. Hence, we anticipate approval to use this building for EMHA classes. The HSC Space Committee is currently considering our requests for both classroom and space. If there is not office space in the HSC Building, HPM will absorb the cost of renting an office in or near the Texas Medical Center from our current budget for EMHA program initiation.
Summary of Proposal (Include Background Information and Rationale for the change.)

This proposal outlines plans to establish an Executive Master of Health Administration (MHA) Program in Houston, Texas. This graduate program will be an expansion of the current MHA program offered at the College Station campus, tailored for the mid-career healthcare professional.

The primary rationale for this request is to fulfill an identified need within the Houston and surrounding market area for Master's level education for mid-career healthcare professionals. As health care providers assume increasing responsibility for improving population health in the context of accelerating complexity and change, the need for skilled managers is becoming increasingly acute. There is currently no other Master's level program offered in Houston comparable to that outlined in this proposal, as the existing programs are intended for individuals who are within a few years of earning their bachelor's degree or have very limited healthcare experience, and are provided in a manner that is not necessarily amenable to working professionals (e.g., offered during the weekday). Through numerous preliminary discussions with executive decision-makers in the Texas Medical Center as well as additional market analysis, we have developed a model for which we anticipate strong industry support and student demand. Texas A&M's MHA program is uniquely well-situated to offer the proposed program because of the excellence of our existing residential MHA and strength of ties with a range of Texas Medical Center organizations.

The Executive MHA program will be a 12-course, 36-credit hour, master's degree that will take two years to complete. Students will be admitted to the program in August of each year and graduate with the MHA degree in two years. This delivery model is a compressed version of the current 57-credit hour MHA program tailored to a different student population. The course sequence will be lock-step, with no electives, and each course will be taught in-person on weekends at the Texas Medical Center campus. Each course will be taught over two consecutive months.

The Executive MHA program will be housed and administered through the Department of Health Policy and Management in the School of Public Health. Faculty in the Department are supportive of this initiative and will provide instruction for the majority of courses within the new program. The Program Director will oversee all operational activities associated with this program ranging from course sequencing, description, faculty teaching assignment, and student selection and advisement. Based upon the estimated budget and enrollment projections, this initiative will require financial support from the TAMHSC for the first three years until the Executive MHA program has established an annual enrollment of 25 students per cohort, or 50 students total per year.

Financial Implications:

Approximately $350,000 in startup funding is anticipated for this program ($350,000 in the year before the program launches), $1,000,000 in 2016 ($70,000 in 2015 when we project an initial cohort of 15 students to enroll), and $70,000 in 2017 when another 20 students are expected to enroll, until operations reach a breakeven point in 2017 ($70,000 in year 3 of program operations).

Total program costs will be approximately $350,000 per year once the program is fully operational. A combination of tuition and fees, subvention dollars, and small school multiplier dollars will cover these expenses by the 2017 year. By that point we expect entering cohorts of approximately 25 students per year, for a total of 50 students enrolled at any given point in time.

Sensitivity analyses show the program breaking even in 2017 even if enrollment is as low as 15 students per year because of the anticipated subvention and small school multiplier funding. However, this circumstance would also prompt expansion of marketing beyond the Houston area, using Health Policy and Management's strong state and national networks. Although our initial marketing focus will be Houston and more specifically, the Texas Medical Center, the program's once-month format and location near major airports is likely to attract participants from throughout Texas and beyond.
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 Health Science Center (University name) is hereby authorized to offer the Master of Health Administration (Degree) program by distance education, electronic to individuals (online delivery) effective August 2015."

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 Health Science Center (University name) 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 and support services for students. The program is within the role and mission of the institution and in the Table of Programs. 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 Principles of Good Practice for Degree and Certificate Programs and Courses Offered Through Distance Education."

Approval – University:

[Signature]
[Name]
[Date]

[Signature]
[Name of President]
[Date]

Authorization: System

Approval – Texas A&M University System:

[Signature]
[Name of President]
[Date]

[Signature]
[Name of Academic Affairs]
[Date]
April 11, 2014

MEMORANDUM

TO:           Dr. John C. Criscione  
              Assistant Dean for Graduate Programs

THROUGH:      Ms. Amber Muenzenberger  
              Director, Remote Learning and Outreach Education

THROUGH:      Dr. Andreas A. Polycarpou  
              Department Head, Mechanical Engineering

FROM:         Dr. Alan Palazzolo  
              Graduate Director, Mechanical Engineering

SUBJECT:      Distance Education Masters of Engineering in Mechanical Engineering

The Masters of Engineering in Mechanical Engineering is currently approved for on-campus face-to-face delivery. We would like to start offering this degree via distance education beginning fall 2014. Please see the approval and online delivery proposal forms for additional information.
Texas A&M University
New Certificate, Bachelors, Masters, or Doctoral Program

Proposal Checklist

Requested by the Department or Unit of: Department of Mechanical Engineering

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

Program Type  Certificate Program  ☐  Degree Program  ☑
Program Level  Undergrad Certificate  ☐  Grad Certificate  ☐  Bachelor  ☐  Master  ☑  Doctoral  ☐
Degree Designation (i.e., BS, BA, MA, MS, MAgr, Med, PhD, EdD, etc.)  MEng.
Title of proposed program: Masters of Engineering in Mechanical Engineering (Distance Education)
Proposed CIP Code (if known): 14.1901.00

Brief program description (provide a catalog description for undergraduate and graduate certificates):
The Department of Mechanical Engineering at Texas A&M University will offer the Master of Engineering in Mechanical Engineering degree program online, beginning in the fall 2014 semester. The distance learning Master of Engineering in Mechanical Engineering will be the same degree one would earn if one studied on the Texas A&M University campus in College Station, Texas. The standards for admission, course work, and graduation are the same, and the diploma will be the same as those for on-campus students.

The Master of Engineering in Mechanical Engineering is designed for graduate students interested in practicing engineering at an advanced level in government and industry. Each mechanical engineering graduate course is designed to provide a clear presentation of the underlying principles and theories essential to an understanding of the subject. Analytical and experimental techniques are described when required to apply the subject material to modern problems facing the engineers of today. In many cases, the course material supplements active research in mechanical engineering areas currently conducted at Texas A&M and other prominent research centers around the world. In addition, new research programs have begun in manufacturing processes, nondestructive testing, computer-aided design, manufacturing, plastics engineering, artificial intelligence and robotics.

The overall educational objective of the Distance Learning based Master of Engineering program is to provide coursework that:

a. gives a deeper understanding of mathematics, science and engineering for industrial and research and development R&D applications,
b. helps to identify, formulate and solve advanced engineering and R&D problems,
c. provides an ability to use advanced techniques, skills and engineering tools required for engineering and scientific practice, and
d. gives an ability to design an advanced engineering component or system to meet desired needs with realistic constraints.

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

Proposed program hours: 30 hours

*12 hours minimum to appear on transcript

Off-Campus or Distance Delivery

% of Program a student can take off-campus or through Distance Education  Program Start Date  SACS Approval**  When Provost needs to inform SACS
☐ 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%  Fall 2014  ☐  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

☑ Distance Education / Internet  In-State  ☑ Out-of-State  ☑ Start Date  Fall 2014

Page 1

03/13/2013
Texas A&M University
New Certificate, Bachelors, Masters, or Doctoral Program
• Proposal Checklist •

☑ 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 SACS location? Yes □ No ☑ If no, a program prospectus must be sent to SACS.
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: ______

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):
Amber Muenzenberger
Name
Director for Remote Learning and Outreach Education
Title
simberzen@tamu.edu
Email
979.458.9719
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]
Andreas A. Polycarpou
Typed or Printed Name

[Signature, Chair, College Review Committee or Dean of College]
Valerie E. Leyd
Typed or Printed Name

Chair, University Curriculum Committee or Graduate Council M. Zeran

Date 4/15/14
Date 4/15/14
Date 4/12/14
Date 4/12/14
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: Masters of Engineering in Mechanical Engineering

CIP Code: 14.1901.00

When is the effective date of the proposed program?

Effective Date: Fall 2014

**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 Mechanical Engineering at Texas A&M University will offer the Master of Engineering in Mechanical Engineering degree program online, beginning in the fall 2014 semester. The distance learning Master of Engineering in Mechanical Engineering will be the same degree one would earn if one studied on the Texas A&M University campus in College Station, Texas. The standards for admission, course work, and graduation are the same, and the diploma will be the same as those for on-campus students.

The Master of Engineering in Mechanical Engineering is designed for graduate students interested in practicing engineering at an advanced level in government or industry. Each mechanical engineering graduate course is designed to provide a clear presentation of the underlying principles and theories essential to an understanding of the subject. Analytical and experimental techniques are described when required to apply the subject material to modern problems facing the engineers of today. In many cases, the course material supplements active research in mechanical engineering areas currently conducted at Texas A&M and other prominent research centers around the world. In addition, new research programs have begun in manufacturing processes, nondestructive testing, computer-aided design, manufacturing, plastics engineering, artificial intelligence and robotics.

Sufficient Mechanical Engineering courses will be offered directly through this program to meet these requirements, and additional non-MEEN courses will be added to the program as they become available for transmission. Some such courses are already being offered by other distance education programs at Texas A&M University and others are being proposed with interested faculty from non-MEEN departments. The graduate faculty members of record for these courses are teaching within departments in the college of engineering. These faculty members are selected and evaluated by the same standards, review, and approval procedures used to select and evaluate faculty responsible for on-campus instruction. In order to teach these courses the faculty members must also be eligible to teach graduate level instruction in residence.
Financial Implications:

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. Students who are enrolled in online courses within the college of engineering are charged distance education differential tuition of $540.00 per semester credit hour, which allows for the delivery of the course and ensures the quality of distance and distributed education programs of the University. In addition to the distance education differential tuition, there are traditional services that are a part of the university's operations that contribute to the effective delivery of distance education. A list of all student fee 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 (University name) is hereby authorized to offer the Masters of Engineering in Mechanical Engineering (Degree) program by distance education, electronic to individuals (online delivery) effective Fall 2014.

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 (University name) 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 and support services for students. The program is within the role and mission of the institution and in the Table of Programs. 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 Principles of Good Practice for Degree and Certificate Programs and Courses Offered Through Distance Education."

Approval – University:

__________________________________________  Date

University President: ____________________________________________
  Print name of President

Authorization: System

Approval – Texas A&M University System:

__________________________________________  Date

James R. Hallmark, Ph.D.
Vice Chancellor for Academic Affairs
THE TEXAS A&M UNIVERSITY SYSTEM
DISTANCE EDUCATION PROGRAM PROPOSAL:
ELECTRONIC TO INDIVIDUALS (ONLINE) DELIVERY

(BACHELORS OR MASTERS PROGRAMS ONLY)

Directions: An institution shall use this form to propose an "existing" bachelor's or master's degree program they wish to be offered via electronic to individual (online) delivery.

This form must be completed and signed by the university president or chief academic officer.

Upon completion, attach the "Approval Form" and submit it to the A&M System Office of Academic Affairs at AA-Apendaltems@tamus.edu

Information: Contact the A&M System Office of Academic Affairs at 979-458-7421 (Irma Harper)

Administrative Information

1. Institution: Texas A&M University

2. Program to be Offered (Include CIP code): 14.1901.00 (Masters of Engineering in Mechanical Engineering (ME in MEEN))

3. Online Program Description – The Department of Mechanical Engineering at Texas A&M University will offer the Master of Engineering in Mechanical Engineering degree program online, beginning in the fall 2014 semester. The distance learning Master of Engineering in Mechanical Engineering will be the same degree one would earn if one studied on the Texas A&M University campus in College Station, Texas. The standards for admission, course work, and graduation are the same, and the diploma will be the same as those for on-campus students.

The Master of Engineering in Mechanical Engineering is designed for graduate students interested in practicing engineering at an advanced level in government or industry. Each mechanical engineering graduate course is designed to provide a clear presentation of the underlying principles and theories essential to an understanding of the subject. Analytical and experimental techniques are described when required to apply the subject material to modern problems facing the engineers of today. In many cases, the course material supplements active research in mechanical engineering areas currently conducted at Texas A&M and other prominent research centers around the world. In addition, new research programs have begun in manufacturing processes, nondestructive testing, computer-aided design, manufacturing, plastics engineering, artificial intelligence and robotics.

The overall educational objective of the Distance Learning based Master of Engineering program is to provide coursework that:

a. gives a deeper understanding of mathematics, science and engineering for industrial and research and development R&D applications,
b. helps to identify, formulate and solve advanced engineering and R&D problems,
c. provides an ability to use advanced techniques, skills and engineering tools required for engineering and scientific practice, and
d. gives an ability to design an advanced engineering component or system to meet desired needs with realistic constraints.
Students enrolled in this program are required to complete a minimum of 30 semester credit hours of coursework (as approved by their committee). Students (both on-campus and online) will be required to complete courses in the following areas:

a. MATH: 3 hours of any 600 Level Math or Statistics course, or an Advanced Engineering Math Course instructed by a mechanical engineering faculty member
b. MEEN Graduate Core Courses: Minimum 6 hours selected from available core course list.
c. MEEN Graduate Elective Courses: Minimum 12 hours (may include core courses not included in (b) above)
d. Graduate Courses offered Outside of MEEN in the College of Engineering or College of Science: Maximum of 6 hours (committee chair will approve these hours)
e. MEEN 684 (Internship) and MEEN 685 (Directed Studies): Maximum total 5 hours (maximum hours in MEEN 684 is 3 hours, maximum in MEEN 685 is 3 hours)
f. Program Required Project: A graded project/report with an A or B grade from any course can be used to fulfill this requirement.
g. Program Required Final Exam: Waived if GPA is 3.0 or higher.

Students within the program can transfer up to 6 hours from a peer institution and approved by the Graduate Program Coordinator.

Sufficient Mechanical Engineering courses will be offered directly through this program to meet these requirements, and additional non-MEEN courses will be added to the program as they become available for transmission. Some such courses are already being offered by other distance education programs at Texas A&M University and others are being proposed with interested faculty from non-MEEN departments. The graduate faculty members of record for these courses are teaching within departments in the college of engineering. These faculty members are selected and evaluated by the same standards, review, and approval procedures used to select and evaluate faculty responsible for on-campus instruction. In order to teach these courses the faculty members must also be eligible to teach graduate level instruction in residence.

4. Administrative Unit – The Department of Mechanical Engineering within the Dwight Look College of Engineering

5. Proposed Implementation Date – Fall 2014

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

Name: Alan Palazzolo
Title: Professor & Graduate Program Director, Department of Mechanical Engineering
E-mail: a-palazzolo@tamu.edu
Phone: 979.845.5280
Format for Existing Bachelors or Masters Degree Program Electronic to Individual (Online Delivery) Request

**Step One:** For each of the following questions, include the requested information:

- What previously approved programs does your university offer, that are closely related to the new program and how are they related?

  The Dwight Look College of Engineering at Texas A&M University offers a variety of Masters of Engineering degree programs:
  - Aerospace Engineering
  - Biological & Agricultural Engineering
  - Biomedical Engineering
  - Chemical Engineering
  - Civil Engineering
  - Computer Engineering
  - Electrical Engineering
  - Industrial Engineering
  - Materials Science & Engineering
  - Nuclear Engineering
  - Ocean Engineering
  - Petroleum Engineering

  All of these programs are related as they are professional degrees that are practice-oriented for industry applications and ventures.

- (List the programs within your college/department that are already approved for online delivery.)

  - Masters of Science in Engineering Systems Management
  - Masters of Engineering in Industrial Engineering
  - Masters of Engineering in Petroleum Engineering
  - Masters of Industrial Distribution
  - Masters of Science in Safety Engineering

- Will significant additional equipment or facilities be needed? If yes, explain.

  Texas A&M University and the college of engineering and have a robust and stable infrastructure to design, develop, and deliver distance courses. These resources include software as well as facilities to design and develop quality distance education content. Physical resources within the college include small studios to record and edit lectures, classrooms with lecture capture and videoconferencing (TTVN) capabilities, and interactive video/webinar rooms. At the university level, KAMU studios can be used to produce high quality videos. TAMU Libraries have podcast rooms available for faculty use. In addition, Instructional Technology Services provides and supports Blackboard Learn, the learning management system, and they host a variety of training events on
Blackboard as well as other instructional technology software packages. Academic technology staff within the college of engineering will also work with faculty to provide additional and just-in-time training and assistance to use these facilities and software packages.

- Will significant additional financial resources be needed? If yes, explain.

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. Students who are enrolled in online courses within the college of engineering are charged distance education differential tuition of $540.00 per semester credit hour, which allows for the delivery of the course and ensures the quality of distance and distributed education programs of the University. In addition to the distance education differential tuition, there are traditional services that are a part of the university’s operations that contribute to the effective delivery of distance education. The library, for example, provides online access to electronic databases and interlibrary loan services. Texas A&M Computing and Information Services, in addition to maintaining servers and network, supports the course management system, student information system, university Web site, etc. that are essential resources for the operation of distance education programs. These units are funded through state appropriations and student fees. A list of all student fee and explanations can be found at http://sbs.tamu.edu/.

- Will a significant number of new courses be required? If yes, explain.

Courses that are currently offered within the face-to-face degree program will be designed and developed into a distance education modality through a partnership between the subject matter expert (faculty member) and the instructional design and development team. The face-to-face and distance education courses will have the same course goals and objectives. These courses will only differ in the delivery and teaching methodologies that have proven to be best practices in distance education courses. Students, regardless of the delivery mechanism will be held to the same standard for courses and the degree program.

- Will a significant number of new faculty members be required? If yes, explain.

Existing faculty will serve as the subject matter experts when designing and developing the courses with an instructional design team. The subject matter experts and additional currently existing graduate faculty within the department of mechanical engineering will serve as the instructors of record. As the program grows, additional faculty may be hired according to the graduate faculty standards set forth by the college of engineering.

- Will significant additional library/learning resources be needed? If yes, explain.

Library resources to be used within the distance education program currently exist via electronic means. Both face-to-face and distance education students will have access to the same resources and databases that will be required to complete the
program. All students involved in the program will be subject to the library use fee, which is standard for all Texas A&M University students regardless of location. Program staff will assist these students as needed in acquiring necessary materials.

- What processes do you have in place that secures that a student registered for a distance education course is the same student who completes and receives credit for it? Explain. Texas A&M University currently has distance education programs and demonstrates that the student who registers these programs or courses is the same student who participates in and completes the course or program and receives the credit. TAMU verifies the identity of students through a secure login and pass code available in the university learning management system (Blackboard Learn). TAMU offers approximately 30 programs, through the College of Agriculture & Life Sciences, College of Education & Human Development, Dwight Look College of Engineering, and College of Science, in which students can obtain 50 percent or more of the program via distance learning. These programs were approved by The Texas A&M University System as a part of a comprehensive institutional plan for distance education. All of these programs are currently enrolling students. Furthermore, the university offers fully on-line courses in a variety of disciplines. TAMU implemented Blackboard Learn as the learning management system in Spring 2012 to effectively manage these courses and to verify student participation in online courses.

TAMU primarily uses the secure login and password system in Blackboard Learn to verify the student identity. To access the course content maintained on the Blackboard Learn course management system, TAMU requires students to log in using a unique username and password. The password is initially set to a unique nine-digit number, which is communicated to students at the time of application and acceptance to the university. After the initial login, a student may change the default password. Furthermore, through this secure login and password, student activity performed in these courses is logged on the Blackboard server. Course instructors and system administrators can create reports showing users’ logon dates, frequency, content area access, tool usage, and assessment and assignment submissions.

In addition, Texas A&M University has several Standard Administrative Procedures (SAPs) and University Rules (URs) that address student authentication:
- SAP 29.02.03.M1.03 Information Resources – Account Management
- SAP 29.01.03.M1.14 Information Resources – Password-Based Authentication
- SAP 29.01.03.M1.09 Information Resources – Incident Management
- SAP 29.01.03.M1.27 Exclusion from Required Risk Mitigation Measures
- UR 29.01.03.M2 Rules for Responsible Computing
- UR 29.01.03.M1 Security of Electronic Information Resources

*Note: SACS requires that programs that are a significant departure from those offered when the institution was last evaluated be reported according to SACS. If the answers to these questions reflect a “significant departure” then SACS reporting is required.
Step Two: For each of the following questions, include the requested information:

1. Program Administrative Oversight and Structure:
   - Identify the person and office directly responsible for the overall management of the offering.
     - Name: Alan Palazzolo
     - Title: Professor & Graduate Program Director, Department of Mechanical Engineering
     - E-mail: a-palazzolo@tamu.edu
     - Phone: 979.845.5280

2. Faculty Resources:
   - If the online program will result in additional students, how will faculty resources be provided, that is, hiring additional faculty, reallocating faculty resources from other programs, etc.?

   Existing faculty will serve as the subject matter experts when designing and developing the courses with an instructional design team. The subject matter experts and additional currently existing graduate faculty within the department of mechanical engineering will serve as the instructors of record. As the program grows, additional faculty may be hired according to the graduate faculty standards set forth by the college of engineering. The department and college will monitor the growth of the program to determine additional needs, if current faculty from other programs can be utilized to serve as subject matter experts and instructors of record, department will work together to share faculty appointments (when necessary). If additional faculty are warranted, the college of engineering will work with departments to hire qualified distance education faculty to develop and teach courses within the distance education masters program.

3. Evaluation:
   - How will your institution monitor the quality of the program and student learning outcomes?

   Course content creation, design, and development will be carried out as a partnership between the subject matter expert and the instructional design and development team. Quality standards will be established based on national standards to ensure the course is consistent with Texas A&M University standards for educational program development. Accessibility laws and guidelines will also be followed.

   Distance courses within the college of engineering will be evaluated and assessed within the academic program’s assessment and continuous improvement process. The continuous improvement process looks annually at the learning outcomes of the individual courses in the program. The program assessment takes place yearly with WEAVE online. A formal audit or review occurs every seven years by outside engineering experts and a final report is sent to the TAMU Provost’s Office. The department and program coordinators will ensure that data are collected to represent the distant
modality and are then fed into the assessment process and the improvements made thereafter.

- Describe procedures for evaluation of the program and its effectiveness in the first five years of the program, including admission and retention rates, program outcomes assessments, placement of graduates, changes of job market need/demand, ex-student/graduate surveys, or other procedures.

Engineering Academic and Student Affairs (EASA) within the college of engineering will collaborate with department to assess admission and retention rates for both the on-campus and distance education degree programs. In addition to the monitoring and assessment procedures mentioned above, the EASA will work with departments to assess program outcomes through an informal review process after the fourth year of the program. The department will be responsible for tracking the placement of students, changes within the job market/demand, and exit surveys of students of both the distance education and on-campus degree programs. The program will also be assessed by external reviewers every six to seven years as part of the academic review process.

- How would evaluations be carried out?

The program evaluation will encompass performance of students, evaluations of the professors, and quality of program from the perspective of students, professors, and industry. Distance education students will be evaluated in comparison to students in face-to-face classrooms through grade distributions and test evaluations/assessments. Professors will be evaluated through the same evaluation tools used by the department for other courses. The program will be evaluated through a survey instrument provided to students both face-to-face and distance. This instrument will ask students to evaluate the quality of instruction they received through the course management system or face-to-face, to comment on their use of other media for communications, and to suggest ways to improve various facets of the course/program. Departmental faculty will monitor courses to evaluate teaching methods and effectiveness to suggest improvements and develop best practices in delivery techniques. Industry advisory boards will be asked to provide input regarding the programs, this feedback will be used to make appropriate changes in the degree and delivery of the program.

Step Three: Complete, sign and submit with proposal the “Texas Higher Education Coordinating Board Certification Form for Electronically Delivered Programs” on the following page.
Texas Higher Education Coordinating Board

Certification Form for Electronically Delivered and Off-Campus Education Programs

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 student 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, I assert that the preceding Coordinating Board criteria have been met for all courses and programs that will be delivered electronically and off-campus face-to-face.

______________________________  ______________________
Chief Academic Officer or President  Date

Name:
Title:

THECB 6/2010
Informational Items
Memorandum

April 20, 2014

To: Dr. Karen Butler-Purry  
Associate Provost for Graduate and Professional Studies

Through: Dr. Mark Zoran, Chair  
Graduate Council

From: Duncan MacKenzie  
Associate Professor of Biology  
Co-Chair, Graduate Marine Biology Interdisciplinary Degree Program

The Marine Biology Graduate Interdisciplinary Degree Program (MARB IDP) was approved by the Coordinating Board in 2007 and has expanded since then to comprise to 45 full time graduate students. As originally conceived, entering PhD students without a prior MS degree were required to complete a minimum of 39 hours of graded coursework as part of their 96 credit hour requirement. This requirement was based on an expectation that these students would be taking a full 9 hour load of graded classes, as well as three hours of seminar, for their first four semesters at Texas A&M. As the program has matured it has become evident that this large number of graded hours is not necessary for many of our PhD students, and may in fact put us at a recruiting disadvantage compared to programs with fewer graded hour requirements. The MARB Executive Committee discussed this matter at its meeting on December 13, 2013, and voted to alter this requirement to make it more consistent with the Main Campus Graduate Catalog. This proposal was brought to the MARB participating faculty at our general business meeting during our Retreat on December 14, 2013 and passed with no objections. We will therefore be altering the course requirements for MARB PhD students (with or without an MS degree) to remove the requirement for a minimum number of graded course hours. Rather than establish a minimum number we will instead rely on each student’s Advisor Committee to provide guidance on coursework required.

cc: Dr. Gil Rowe  
Chair, Graduate Marine Biology Interdisciplinary Degree Program  
Professor of Marine Biology, Texas A&M at Galveston

3258 TAMU  
College Station, Texas 77843-3258  
Tel. 979.845.7747  Fax. 979.845.2891