Agenda
1. Approval of January 2014 Minutes

2. Discussion Items
   a. GC Standard Operating Procedures

3. New Course Requests:
   a. CPSY 601  Multicultural Counseling in Schools
   b. CPSY 602  School Counseling Theories and Techniques
   c. CPSY 603  School Counseling Group Interventions
   d. MARB 618  Marine Science of the Pacific Rim
   e. SYEN 640  Systems Thinking and Analysis
   f. SYEN 641  Systems Engineering Methods and Frameworks
   g. SYEN 642  Systems Performance Modeling
   h. SYEN 643  Theory of Socio-Technical Systems
   i. SYEN 644  Decision Making Under Uncertainty in Systems Engineering
   j. SYEN 645  Management of Engineering Systems

4. Course Change Requests:
   a. ESSM 601  Ecosystem Stewardship

5. Curriculum Change Request
   a. Graduate Certificate in Applied Behavior Analysis

6. Special Consideration Items:
   a. Proposal for Ph.D. in Oral Biology

7. Announcements
Discussion Items
Graduate Council (GC) Standard Operating Procedures

Purpose: The Graduate Council shall review all curricular requests pertaining to the graduate academic program, shall be responsible for the quality and development of the graduate instruction and programs and shall advise the Associate Provost for Graduate Studies on all graduate program matters. The Graduate Council shall communicate in writing, through its secretary, its recommendations to the Faculty Senate.

Meetings: The GC will meet on the first Thursday of each month.

(1) Membership shall consist of one representative from each college and off campus academic unit, who shall be selected by the Faculty Senate Committee on Committees after consultation with the college deans and caucuses (chairs of the college committees for graduate instruction shall be considered for appointment); two representatives of the Graduate Faculty; two graduate students; and the Associate Provost for Graduate Studies as an Ex-Officio member. All faculty members shall be members of the Graduate Faculty.

All of the above members except the Associate Provost shall be voting members.

The Associate Directors of Graduate Studies, one representative of the University Library Council, and one member of the Medical Sciences Library shall serve as non-voting members.

All faculty members shall serve three-year terms. Those serving on a committee as a result of their Texas A&M University position shall continue to serve as long as they are in that position. Student members shall serve one-year terms.

A representative from the Office of Graduate and Professional Studies (OGAPS) shall serve as secretary but not have voting privileges.

(2) The election for the GC should take place during the October meeting for an effective date of 1 January. The chair and vice chair will be limited to one three-year term; the elevation of the vice-chair to chair, though commonplace, shall not be automatic. It is highly recommended that the Chair and Vice-Chair be representatives of different Colleges of the University.

(3) The GC shall review all proposed courses, programs, and changes to existing curricula at the graduate level and shall recommend appropriate policies to improve and develop graduate academic programs.

(4) Items requiring vote include New Courses, Course Withdrawal, Change in Courses, Change in Curricula, Administrative Change and Special Considerations. These items may be approved, not approved, approved with changes (friendly amendments), referred to an electronic vote (e-vote, see item 11) prior to the deadline to submit to Faculty Senate, or postponed to a certain time (tabled, see item 12). Each item must receive a majority vote to pass. That is, at least half (50 percent) of GC voting members in attendance must approve an agenda item.

(5) The College representative or designee must be present for agenda items under question from that College to be considered.
(6) Letters of support from all academic programs affected by curricular changes shall be provided to GC by the department bringing the item(s) forward.

(7) Proposed courses in which undergraduate and graduate students meet together at the same time with the same instructor ("stacked courses") must have an instructor of record that is a member of the Graduate Faculty and the syllabus must clearly indicate the additional work required for the graduate students.

(8) New cross-listed courses require individual sets of approval forms. Adding a cross-listed course to an existing course only needs to be considered by the GC if the course is a new course.

(9) Approval of research and problem-based credit hours (685 and 691) and exploratory new (special topics) courses (689) do not require the GC approval.

(10) The GC shall operate under these rules:
   Eight working days prior to meeting (e.g., Tuesday prior to a Thursday meeting the following week) all agenda items are due to OGAPS.
   No later than Monday or the week of meeting all voting and non-voting members will receive the agenda as a digital file easily searched and including all materials necessary to complete an informed review.
   No Consent Agenda is designated. Rather, all agenda items will be fully considered at the Thursday meeting.
   Any agenda item may be challenged at the meeting by a motion from a Committee Member with a second from another Committee Member.

(11) The Chair and/or Vice-Chair may elect to hold an electronic vote (e-vote) meeting when agenda items are minimal and there are no pending deadlines. An e-vote for a specific agenda item with an extremely tight deadline may also be used as deemed appropriate and voted by the committee. E-votes by the committee are sent to the Secretary for compilation. The Chair and Vice-Chair are notified and the agenda item either passes or fails based on the e-votes received.

(12) The GC may vote to postpone voting on an agenda item (table the item) for various reasons (i.e., no representative present, support letters missing, corrections to form/syllabus, etc.). It is the responsibility of the department to resubmit the postponed item for reconsideration with the updates as requested by the committee.

(13) Submissions for consideration by the GC that are not complete or correct by stated GC standards will be returned by the Secretary, in consultation by the Chair and/or Vice Chair.

(14) Proposals must include syllabi that adhere and comply with current University minimum syllabus requirements (http://curricularservices.tamu.edu).
New Courses
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): Educational Psychology

2. Course prefix, number and complete title of course: CPSY 601: Multicultural Counseling in Schools

3. Catalog course description (not to exceed 50 words): Intersecting role of ethnicity, cultural background, gender, and sexual orientation and how they shape the psychosocial development of children and adolescents and impact their educational trajectories; development and appreciation of cultural and ethnic differences among individuals, groups, and families to enhance school counseling service delivery

4. Prerequisite(s):
   Graduate Classification; Approval of department head

   Cross-listed with: Stacked with:

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

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 program(s) (e.g., B.A. in history)
   MED in Educational Psychology - School Counseling Program
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)
   Electives will be granted permission to enroll on a case by case basis as course enrollment permits.

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: CPSY 601 Title (excluding punctuation): MULTICULT MULTICULT 

   Course #:

   Title:

   Lect. Lab. SCh. CIP and Fund Code:

   Admin. Unit:

   Acad. Year:

   FCE Code:

   Approval recommended by:

   Victor Willson, Ph.D. [Signature] Dec 11/13
   Department Head or Program Chair (Type Name & Sign) Date

   George Cunningham, Ph.D. [Signature] 1/20/14
   Chair, College Review Committee Date

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

   George Cunningham, Ph.D. [Signature] 1/20/14
   Dean of College Date

   Mark Zoran, Ph.D. [Signature] 1/20/14
   Chair, GC or UCC Date

   Submitted to Coordinating Board by:

   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 – 3/10
TEXAS A&M UNIVERSITY

CPSY 601: MULTICULTURAL COUNSELING IN SCHOOLS
COURSE SYLLABUS - SUMMER 2014 - Session I

Instructor: Jamilia Blake, Ph.D.  Office: 706 Harrington Tower
Office Phone: 862-8341  Skype: jiblake25
Email: jiblake@tamu.edu  Office Hours: By appointment
*direct email is the best way to contact me

COURSE DESCRIPTION:
The Multicultural Counseling in Schools course is designed to provide students with knowledge and understanding of how the intersecting role of ethnicity, cultural background, gender, and sexual orientation shape the psychosocial development of children and adolescents and impact their educational trajectories. Students will develop an understanding and appreciation of cultural and ethnic differences among individuals, groups, and families to enhance school counseling service delivery (e.g., teaching and counseling of students) and effective communication skills in cross-cultural helping. Students will enhance their ability to apply their knowledge in multicultural counseling to their professional work in schools. Prerequisites: Graduate Classification; Approval of Department Head

COURSE OBJECTIVES:
The major goal of this course is for students to obtain knowledge and understanding about issues related to culture, diversity, and poverty, as well as the existing disparities among educational services for different cultural groups in the United States. Specifically, the objectives of this course are:

1. To increase students’ awareness of their own cultural heritage and examine how it shapes their attitudes, values, beliefs, and behaviors.
2. To become familiar with practice standards related to multicultural service delivery outlined by the American School Counselor Association and the School Counselor Certificate Standards in the Texas Administrative Code Rule §239.15
3. To define multicultural counseling and competence
4. To recognize cultural variations within and between American racial/ethnic groups.
5. To develop greater sensitivity to ethnic minority issues that may impact one’s diagnostic impressions and clinical intervention approaches for individuals of differing cultures.
6. To analyze and problem solve ethical dilemmas that may arise in cross cultural professional relationships.
7. To develop and implement culturally appropriate counseling interventions for children and families of diverse backgrounds.
8. To develop effective communication skills in cross-cultural helping relationships

PROFESSIONAL STANDARDS ADDRESSED IN THIS COURSE
This course is designed to meet the following School Counselor Certificate Standards as outlined in the Texas Administrative Code Rule §239.15:

Standard I: Learner-Centered Knowledge: The certified school counselor has a broad knowledge base. The certified school counselor must know and understand:
I.5. Changing societal trends, including demographic, economic, and technological tendencies, and their relevance to school counseling
I.6 Environmental, social, and cultural factors that affect learners’ development and the relevance of those factors to guidance and counseling programs;

Standard IV. Learner-Centered Equity and Excellence for All Learners: The certified school counselor promotes academic success for all learners by acknowledging, respecting, and responding to diversity while building on similarities that bond all people. The certified school counselor must:
IV.1 Understand learner differences, including those related to cultural background, gender, ethnicity, and learning styles, and know ways to create and maintain a positive school environment that is responsive to all learners;
IV.2 Advocate for a school environment in which diversity is acknowledged and respected, resulting in positive interactions across cultures

**Standard V. Learner-centered communication:** The certified school counselor, and advocate for all students and the school, demonstrates effective professional and interpersonal communication skills. The certified school counselor must:

V.1 demonstrate effective communication through oral, written, and nonverbal expression

This course is also designed to meet the following American School Counselor Association standards:

**Personal/Social Development:**

**Standard A:** Students will acquire the knowledge, attitudes and interpersonal skills to help them understand and respect self and others.

A2: Acquire Interpersonal Skills
- Recognize that everyone has rights and responsibilities
- Respect alternative points of view
- Recognize, accept, respect and appreciate individual differences
- Recognize, accept and appreciate ethnic and cultural diversity
- Recognize and respect differences in various family configurations
- Use effective communications skills
- Know that communication involves speaking, listening and nonverbal behavior
- Learn how to make and keep friends
COURSE DELIVERY STRUCTURE

This course will be taught fully online asynchronously via Elearning: [http://elearning.tamu.edu](http://elearning.tamu.edu). Course readings, supporting materials, and lectures will be accessible via elearning. Students are strongly encouraged to complete the VISTA elearning orientation before the class starts [http://its.tamu.edu/elearning-orientation](http://its.tamu.edu/elearning-orientation). All assignments will be submitted through elearning.

**Time Commitment:**
Students should anticipate devoting 3 to 4 hours per day to completing reading assignments, listening to the course lectures, viewing course videos, and completing other course requirements. This amount of time is standard for any short summer session course.

**Technology Requirements**
To effectively participate and maximize all the benefits of your instruction, students enrolling in distance learning courses should meet the following technology requirements.

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<tr>
<th>Minimum Technology Requirements</th>
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<tr>
<td><strong>Internet Connection</strong></td>
<td>Cable Internet or DSL recommended. Here's additional information: Cnet Review</td>
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<td><strong>Operating System</strong></td>
<td>Windows XP/2000 SP3</td>
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<td><strong>Minimum Requirements</strong></td>
<td>Pentium III 450MHz or faster processor (or equivalent)</td>
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<tr>
<td><strong>Windows</strong></td>
<td>Internet Explorer 6.0 or later, Firefox 3 (with the MediaWrap 0.1.7.3 add-on), Safari 3.2.1 or later, Opera 7.11 or later, or Chrome (which are all free downloads)</td>
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<td><strong>Browser Requirements</strong></td>
<td>Mac OS X 10.2</td>
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<td><strong>Windows</strong></td>
<td>PowerPC® G3 500MHz or faster processor</td>
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<td><strong>Minimum Requirements</strong></td>
<td>Intel Core™ Duo 1.83GHz or faster processor</td>
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<td><strong>MAC</strong></td>
<td>512 MB of RAM</td>
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<tr>
<td><strong>Browser Requirements</strong></td>
<td>Firefox 3 (with the MediaWrap 0.1.7.3 add-on), Opera 6, Safari 3.2.1 or later (which are free downloads)</td>
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<td><strong>Media Hardware</strong></td>
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<td>Video card with at least 64MB of dedicated memory</td>
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<td>Webcam (<a href="https://www.amazon.com">Amazon.com search results</a>)</td>
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<td>Headset (<a href="https://www.amazon.com">Amazon.com search results</a>)</td>
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<td>Sound card with speakers</td>
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<td><strong>Media Software</strong></td>
<td>Flash Player 9 or better (<a href="https://get.adobe.com/flashplayer/">download</a>)</td>
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<td>Adobe Reader 8 or better (<a href="https://www.adobe.com/products/reader.html">download</a>)</td>
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<td>Real Player 8* or better (<a href="https://www.real.com">download</a>)</td>
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<td>Java (for most systems use J2SE(TM) Runtime Environment 5.0) (<a href="https://www.oracle.com/technetwork/jdk/index.html">download</a>)</td>
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<td>Windows Media Player 9 or better (<a href="https://www.microsoft.com">download</a>)</td>
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<td>If you can't view videostreamed presentations email <a href="mailto:helpdesk@tamu.edu">helpdesk@tamu.edu</a> or call 979.845.8300. Also, you should visit the university software store for Microsoft office and other essential software needs: <a href="https://software.tamu.edu">https://software.tamu.edu</a></td>
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For Technology Assistance
Go to http://elearning.tamu.edu and scroll over “NEED HELP?” and click “ASK FOR HELP” near the top of the page. You will then have several choices, including filling out an online form, searching FAQs, instructions on going to an on campus lab for help, or calling the help desk (24/7) at 979-845-8300

TEXT/READINGS:

Required Text

All other course readings will be available on Vista Elearning (http://elearning.tamu.edu/). Below please find a list of the required readings for this course:


COURSE POLICIES
Attendance: The attendance policy for this class will be administered in accordance with Student Rule #7: http://student-rules.tamu.edu/rule07.

“Netiquette”
You may find that students online are much more brash and opinionated than in the traditional classroom setting. The anonymity of the online environment seems to foster freedom of expression. This can be both a benefit and a hindrance. No language or behaviors that make others feel uncomfortable will be tolerated. You are expected to address the instructor, your peers, and guest speakers in a professional tone and manner. When your behavior adversely affects the classroom’s aim to foster educational excellence, disciplinary action in accordance with the Student Rules 21.0 (Classroom Behavior) as revised in 1995 will be instituted. Below are some tips to keep in mind when communicating via the web:

- In emails, discussion boards, chat rooms, and all electronic communication, please focus comments on the content, not on someone's character.
- Think before you send. In cyberspace, what goes around comes around – fast! Anything you send out can be easily copied and forwarded with the click of a mouse.
- WRITING IN ALL CAPS INDICATES THAT YOU ARE SHOUTING! Please do not shout. Flaming is the process of expressing strong emotions or opinions via email. Given the content of this course, it is expected that students will be passionate about some topics and have strong emotional reactions to comments and posting of others. Whereas open discussion and disagreement is allowable, flaming wars are prohibited in which two or three individuals send a series of angry letters toward each other which dominate discussion forums and alter the tone of the course.

Readings: You are expected to complete all of the assigned readings prior to submitting assignments and participating in discussion boards. Students should anticipate devoting 3 to 4 hours per day to completing reading assignments, listening to the course lectures, and completing other course requirements. This amount of time is standard for any short summer session course.

Lectures: You are expected to read the material provided in the course schedule and then listen to the lectures accessed online at http://elearning.tamu.edu.

Participation: You should be prepared to discuss, analyze, synthesize, and evaluate ideas and content presented through readings on discussion boards. Your reflections on readings and other sources and ability to create personal relevance will add to the overall objectives of the course. Be prepared to take an active role in ongoing discussions. This means that all of your discussion board postings should be meaningful and related directly to the readings/sources and others’ postings. Whereas I certainly encourage you to draw on your personal experiences in your posts to use as examples, your posts should also include direct references to course readings or other external sources you mention. This means that you should provide specific citations when referencing course readings in your posts. Please note that merely agreeing with others does not count as active participation. You must contribute significant content and/or insights to discussion boards to receive credit in this area.

Assignments - All assignments must be completed individually, unless otherwise specified by the instructor. Please read the instructions/description for each assignment very carefully. The course requirement and rubrics provide excellent information. Work that does not meet the specific criteria provided will result in lost points. Proofread your work for spelling and mechanics. Assignments are due on the dates listed in this syllabus at the beginning of class unless otherwise specified. If you have questions or need clarification on assignments, I encourage you to seek assistance from me via email, phone, or by setting up an appointment. Late assignments are discouraged and may be assigned a lower score except in cases of excused absences. Please reference student rule 7 linked above for more information on excused absences. Please be aware of academic misconduct policies, including
plagiarism. If you have any questions about this, visit TAMU’s website at http://aggiehonor.tamu.edu/Student%20Rules/definitions.html

**Correspondence:** Correspondence related to the course is sent to your TAMU email account. Consistent with Student Rule 61.2.3 (http://student-rules.tamu.edu/rule61) students are expected to regularly check their TAMU email account for course-related communications.

**COURSE REQUIREMENTS:**

**Reading Quizzes (30 points):** Quizzes will be administered weekly on required readings, videos, and lectures. Each quiz is worth 6 points.

**Reflection Papers (20 points):** Students will complete 2 reflection papers on the content presented in assigned videos. Each video reflection paper is worth 10 points.

**Discussion group postings (20 points):** Students are expected to post one comment to the discussion board on the dates indicate in the course outline related to require course readings. Students will be evaluated by the quality of their posts and the extent to which their posts offer meaningful contributions to the online discussion and others learning. *What is meant by meaningful contributions to discussion?* There are clearly different ways to contribute to classroom board discussion. For example, students can respond to questions posed by the instructor or other students; students can pose additional questions to spark further discussion (e.g., rhetorical questions); share experiences/reactions that are relevant to course topics being discussed; or pose questions for clarification. However, frequently echoing what others state by saying “I agree,” but not offering one’s own insight or thoughts is not considered to be a meaningful contribution to class discussion. Additionally, dominating conversations with off-topic comments or debates is not considered to be a meaningful contribution to the online discussion board.

**Multicultural counseling treatment plan (30 points).** Students will have to develop 1 treatment plan and session plan for a multicultural counseling group for a socially marginalized population of their choosing (e.g., rural GLBTQ youth; African American girls; second generation Latino youth etc.) using the readings and course materials presented in this class.

**Background:** Imagine that you are a school counselor in a fairly racially and ethnically homogenous school. However, the community in which the district is housed is actually quite diverse when one considers the small yet growing populations of culturally and linguistically diverse families that have moved into certain parts of the town over the last 10 years. Although the school superintendent praises the district for having no economically-disadvantaged schools (e.g., the free-reduced lunch rate averages about 43% across schools), it is very clear that students can be classified into two groups in your school: the haves and have-nots. You’re not exactly sure why this is, but at a recent school board meeting some concerned community members attributed this problem to the district’s zoning policies. The district’s current zoning policies attempt to balance the schools economically by busing students from lower-income communities to schools in wealthier parts of the district. These community members advocated for the school board to adopt neighborhood schools as they believed that the inclusion of neighborhood schools in zoning policies would reduce student inequities, but their requests fell to deaf ears. Yesterday, you were informed from the principal that a group of parents from the Wally-side community met with him to express concern about the educational experiences of some of their children in your school. The parents complained that the students from Wally-side did not feel included in the school and perceived other students as receiving preferential treatment from both students and staff. Some parents reported that their children had experienced bullying and harassment because of their residence in Wally-side, whereas others indicated that their children had attempted to hide their affiliation to the community by
denying that they are residents of Wally-side and refusing to participate in common cultural practices. Most troubling are two students in your school who exhibit depressive symptoms, refuse to identify with their cultural group, and become aggressive whenever one of their peers from Wally-side attempts to interact with them at school. Given that you are the best and brightest school counselor in the district, your principal has asked that you address this issue. As a starting point, you have decided to a multicultural counseling group for the students from Wally-side. Your task for this assignment is to:

- Clearly identify a school level for your scenario (e.g., elementary, middle, or high school) and the type of socially marginalized group that the students from Wally-side community will represent (5 points).
- **Multicultural Counseling group session plan**
  - Describe what historical and social issues are necessary to know or understand about this population before devising a treatment plan to work with these students. This information should draw from class readings, videos, and lectures and should be appropriately cited (10 points)
  - What should your treatment plan include for this population of students? Why is it important to focus on these things for this population as opposed to other topics (draw from course readings)? What information do you feel is most important to focus on first in your counseling of students and how will you achieve this treatment goal? What will your first session include and what type of activities or discussion will you need to construct to achieve your treatment goals? This activity may be drawn from other counseling resources or manuals; however, these resources should be appropriately cited in your session plan. (10 points)
- **Format of your counseling plan (5 points):**
  - Your treatment plan should be typed (12-point font-Times New Roman/Arial) and submitted as a single document in Microsoft Word or as an Adobe PDF
  - Include a table of contents indicating what pages specific information can be found
  - Please appropriately label each section of your treatment plan with page headers or title pages
  - Please proofread to ensure that no grammatical/spelling errors are present

**GRADING POLICY**

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<tr>
<th>Assignment</th>
<th>Points</th>
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<tr>
<td>Weekly Reading Quizzes (5)</td>
<td>30 points</td>
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<td>Video Reflection Papers (2)</td>
<td>20 points</td>
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<td>Discussion Board Postings (4)</td>
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<td>Multicultural Treatment: Plan (1)</td>
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**Grade Determination:**

- **A** = 90 - 100
- **B** = 80-89
- **C** = 70-79
- **F** <70
TOLERANCE STATEMENT
The faculty of the College of Education and Human Development values and respects diversity and the uniqueness of each individual. The faculty affirms its dedication to non-discrimination in our teaching, programs, and services on the basis of race, color, religion, gender, age, sexual orientation, domestic partner status, ethnic or national origin, veteran status, or disability. The College of Education and Human Development at Texas A & M University is an open and affirming organization that does not tolerate discrimination, vandalism, violence or hate crimes. We insist that appropriate action be taken against those who perpetrate such acts. Further, the College is committed to protecting the welfare, rights, and privileges of anyone who is a target of prejudice or bigotry. Our commitment to tolerance, respect, and action to promote and enforce these values embraces the entire university community. In the spirit of shared responsibility, each University unit, student organization, and community member is encouraged to help make our campus, and this class, a welcoming place for all. Should you have any concerns related to respect for diversity or feel that you (or any others) are being discriminated against, please contact your departmental Ombudsperson, the Department Head, or the College Ombudsperson.

AMERICANS WITH DISABILITIES ACT
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.

SCHOLASTIC DISHONESTY
As commonly defined, plagiarism consists of passing off as one's own the ideas, words, and writings, etc., that belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. If you have any questions regarding plagiarism, please consult the current issue of the Texas A & M University Student Rules, under the section, "Scholastic Dishonesty."

ACADEMIC INTEGRITY STATEMENT
As of September 1, 2004, all syllabi shall contain a section that states the Aggie Honor Code and refers the student to the Honor Council Rules and Procedures on the web: aggiehonor.tamu.edu

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: aggiehonor.tamu.edu
The following course schedule of readings is recommended to help students pace themselves.

<table>
<thead>
<tr>
<th>Week 1: Multicultural Competence</th>
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<td><strong>Topic</strong></td>
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### Week 3: Cultural Variation within Hispanic/Latino Americans

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<td>Reading Quiz 3</td>
</tr>
<tr>
<td>Su</td>
<td></td>
<td>Discussion Board Posting</td>
</tr>
</tbody>
</table>

### Week 4: Cultural Variation within Asian American youth

<table>
<thead>
<tr>
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<tr>
<td>Sa</td>
<td></td>
<td>Reading Quiz 4</td>
</tr>
<tr>
<td>Su</td>
<td></td>
<td>Discussion Board posting</td>
</tr>
</tbody>
</table>

### Week 5 Multiracial Identity & GLBT

<table>
<thead>
<tr>
<th>M</th>
<th>Cultural Variation within Multi-</th>
<th>Sue &amp; Sue, Chapter 18, Counseling individuals of multi-racial descent (pp. 389-404)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>Activity/Assignment</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>Me, My Sex, and I: Disorders of Sexual Development Video</td>
<td></td>
</tr>
<tr>
<td>Th</td>
<td>Reflection Paper 2</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Sue &amp; Sue, Chapter 23, Counseling Sexual Minorities (pp. 443-452).</td>
<td></td>
</tr>
<tr>
<td>Su</td>
<td>Reading Quiz 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discussion Board posting</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Final Project:</strong> Multicultural Counseling Treatment plan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Due: First day of final exams by 5pm, CST</td>
<td></td>
</tr>
</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): Educational Psychology

2. Course prefix, number and complete title of course: CPSY 602: School Counseling Theories and Techniques

3. Catalog course description (not to exceed 50 words): Broad view of counseling theories and techniques using a microskills approach; modules will include topics pertinent to the school counseling field; opportunities to observe and practice counseling techniques.

4. Prerequisite(s): Graduate Classification; Approval of Department Head

Cross-listed with: stacking with:

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

5. Is this a variable credit course? [ ] Yes [x] No If yes, from _______ to _______

6. Is this a repeatable course? [ ] Yes [x] 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 program(s) (e.g., B.A. in history)

       MED in Educational Psychology - School Counseling Program

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

       Electives will be granted permission to enroll on a case by case basis as course enrollment permits.

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)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPSY</td>
<td>602</td>
</tr>
<tr>
<td>SCHOL</td>
<td>COUNS</td>
</tr>
<tr>
<td>THEO</td>
<td>RY &amp; TECH</td>
</tr>
</tbody>
</table>

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

0 3 0 0 0 3 1 3 1 1 0 0 0 4 0 9 2 0 1 4 - 1 5 0 0 3 6 3 2

Approval recommended by:

Victor Williams, Ph.D. Dec 13
Department Head or Program Chair (Type Name & Sign) Date

George Cunningham, Ph.D. 1/20/14
Chair, College Review Committee Date

George Cunningham, Ph.D. 1/20/14
Dean of College Date

Mark Zoran, Ph.D. 1/20/14
Chair, GC or UCC Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services Date

Effective Date
CPSY 602: SCHOOL COUNSELING THEORIES & TECHNIQUES
Fall 2013
Asynchronous Course: Monday – Sunday 10pm

INSTRUCTOR

Instructor: Linda G. Castillo, Ph.D.
Office: 712 Harrington Tower
Phone: 979-845-0891
Email: On e-campus
Office hours: By appointment only
Teaching Assistant: Natalia Jimenez
Technology Assistant: Trey Armstrong

COURSE DESCRIPTION

The course is designed to provide students with a broad view of counseling theories and techniques using a microskills approach. Modules will cover a range of topics pertinent to the school counseling field and will provide the opportunity to observe and practice counseling techniques. Prerequisites: Graduate Classification; Approval of Department Head

COURSE OBJECTIVES

At the end of the course, students will be able to:
1. Demonstrate an understanding of various counseling theoretical frameworks.
2. Develop a basic idea of how counseling theories guide and inform counseling practices when working with children and adolescents.
3. Increase one’s competence of essential counseling techniques that can be used within a school setting.
4. Practice integrating theories (e.g., solution-focused) with basic counseling techniques and strategies at a beginning level of proficiency.

COURSE MATERIALS

REQUIRED:
   AUTHORS: Ivey/Ivey/Zalaquett ©2012
   http://www.cengagebrain.com/shop/isbn/9781285265063
2. Theories of Counseling and Psychotherapy: A Case Approach, 3/E  
AUTHOR: Nancy L. Murdock ©2013  
ISBN-10: 0132659786  

3. Webcam or digital video camera for recording.

4. Drop box account to hold video files. Get 2GB free at: https://www.dropbox.com/

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**MINIMUM TECHNOLOGY REQUIREMENTS**

To effectively participate and maximize all the benefits of your instruction, students enrolling in distance learning courses should meet the following technology requirements.

<table>
<thead>
<tr>
<th>Internet Connection</th>
<th>Cable Internet or DSL recommended.</th>
</tr>
</thead>
</table>
| Operating System Minimum Requirements | Windows XP/2000 SP3  
Pentium III 450MHz or faster processor (or equivalent)  
Mac OS X 10.2  
PowerPC® G3 500MHz or faster processor  
Intel Core™ Duo 1.83GHz or faster processor  
512 MB of RAM |
| Browser Requirements | See List at:  
https://help.blackboard.com/en-us/Learn/9.1_SP_10_and_SP_11/Instructor/002_Browser_Support_SP_11 |
| Media Hardware | DVD player  
Video card with at least 64MB of dedicated memory  
Webcam (Amazon.com search results)  
Headset (Amazon.com search results)  
Sound card with speakers |
| Media Software | Flash Player 9 or better (download)  
Adobe Reader 8 or better (download)  
VLC (download)  
Java (for most systems use J2SE(TM) Runtime Environment 5.0) (download)  
If you can't view video-streamed presentations email helpdesk@tamu.edu or call 979.845.8300. Also, you should visit the university software store for Microsoft office and other essential software needs: https://software.tamu.edu |
COURSE STRUCTURE, EXPECTATIONS, AND EVALUATION

Participation/Discussion Board Postings (30%)
Students are required to participate online via discussion board postings. Since this is an asynchronous course, students are expected to pay attention to deadlines and complete all assignments and quizzes by the noted deadlines.

Modules are open and available from Monday to Sunday 10pm. Each module contains discussion board topics that must be posted by Sunday 10pm. You are required to write a meaningful post on the discussion board as well as post a meaningful reply to at least one peer's posting to obtain credit. Discussion board threads will be locked on Sunday at 10pm. Late postings are not accepted except in cases of University excused absences. Please see student rule 7 below for more information on excused absences.

Extra credit WILL NOT be offered. So, plan your schedule accordingly. Health issues or emergencies that arise during the course will be dealt with on a case-by-case basis for University excused absences. For more information on the University’s attendance policy please see: http://student-rules.tamu.edu/rule07

If you need help learning about e-campus, the following are useful links.

http://ecampus.tamu.edu/student-help.php
http://hdc.tamu.edu/
Email: helpdesk@tamu.edu
Phone: (979) 845-8300

Quizzes (20%)
Quizzes are located in each of the modules and will cover all readings for a given week. Quizzes are timed (20 minute limit). Quizzes will open Fridays at 10am and close Sundays at 10pm. Late quizzes are not accepted. The lowest quiz grade will be dropped and replaced with the final exam grade.

Final Exam (30%)
The final exam will cover all course readings. Exam opens December 6 at Noon and closes December 11th Midnight. Late exam is not accepted.

Digital Video-Recorded Counseling Demonstrations (20%)
Students are required to record three 30-minute sessions with an adult volunteer. This is a required activity that will give the student a sense of what real counseling is like. Grading for this activity is based on submitting the recordings on time. Digital video recordings will be submitted on e-campus. Students will receive feedback on their microskills and will be able to recognize their counseling strengths and areas of growth as a developing school counselor.

DO NOT ask close friends, family, or current/past romantic partners to be a volunteer client. “Permission to Record” form must be completed and submitted onto e-campus.
### Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
</tr>
<tr>
<td>D</td>
<td>60-69</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60</td>
</tr>
</tbody>
</table>

### Class Schedule

<table>
<thead>
<tr>
<th>Dates</th>
<th>Week</th>
<th>Chapters</th>
<th>Topic</th>
<th>Permission to Record Form Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-Aug</td>
<td>1</td>
<td>1 and 4</td>
<td>Overview of Counseling Theory: Adlerian</td>
<td></td>
</tr>
<tr>
<td>2-Sep</td>
<td>2</td>
<td>5</td>
<td>Person Centered</td>
<td></td>
</tr>
<tr>
<td>9-Sep</td>
<td>3</td>
<td>8 and 9</td>
<td>Behavioral, REBT, Cognitive-Behavioral</td>
<td></td>
</tr>
<tr>
<td>16-Sep</td>
<td>4</td>
<td>10</td>
<td>Cognitive</td>
<td></td>
</tr>
<tr>
<td>23-Sep</td>
<td>5</td>
<td>13</td>
<td>Family Systems</td>
<td></td>
</tr>
<tr>
<td>30-Sep</td>
<td>6</td>
<td>11</td>
<td>Reality Therapy</td>
<td></td>
</tr>
<tr>
<td>7-Oct</td>
<td>7</td>
<td>14</td>
<td>Solution Focused</td>
<td></td>
</tr>
</tbody>
</table>

**Theories of Counseling and Psychotherapy: A Case Approach 3/E**

<table>
<thead>
<tr>
<th>Dates</th>
<th>Week</th>
<th>Chapters</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>14-Oct</td>
<td>8</td>
<td>1, 2, and 3</td>
<td>Attending and Observation</td>
</tr>
<tr>
<td>21-Oct</td>
<td>9</td>
<td>4</td>
<td>Questions</td>
</tr>
<tr>
<td>28-Oct</td>
<td>10</td>
<td>5</td>
<td>Active Listening</td>
</tr>
<tr>
<td>4-Nov</td>
<td>11</td>
<td>6</td>
<td>Reflection of Feelings</td>
</tr>
<tr>
<td>11-Nov</td>
<td>12</td>
<td>7</td>
<td>Conducting an Interview using Listening Skills</td>
</tr>
</tbody>
</table>

**Essentials of Intentional Interviewing: Counseling in a Multicultural World, 2nd + Counseling CourseMate**

<table>
<thead>
<tr>
<th>Dates</th>
<th>Week</th>
<th>Chapters</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-Nov</td>
<td>13</td>
<td>8</td>
<td>Confrontation</td>
</tr>
<tr>
<td>25-Nov</td>
<td>14</td>
<td>9</td>
<td>Focusing the Interview</td>
</tr>
<tr>
<td>2-Dec</td>
<td>15</td>
<td>10 and 11</td>
<td>Reflection of Meaning, Interpretation, Reframing, and Self-Disclosure</td>
</tr>
</tbody>
</table>
Final Exam over all Chapters.

Exam opens December 9 at Noon; Closes December 11th Midnight.

**PROFESSIONALISM**

This is a core course in the Texas A&M University (TAMU) Distance School Counseling Master’s in Education (M.Ed.) Curriculum. It is anticipated that students have elected to participate in this master’s level professional training program and will participate in all scheduled discussions and timeliness in delivery of all required documents is expected.

**ACADEMIC INTEGRITY**

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

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

**AMERICANS WITH DISABILITIES ACT (ADA)**

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
Permission to Record

________________________________________ is enrolled in CPSY 689 School Counseling Theories and Techniques as one of the requirements for earning a master's degree. The course focuses on learning and practicing counseling skills. The purpose of the conversation in which you have been asked to take part is to provide an opportunity for ________________ to practice the use of these skills. The conversation will be video-recorded and the instructor and/or teaching assistant, who is a counseling psychology doctoral student, will view the recording so that ________________'s counseling skills can be evaluated. Please choose a topic to discuss which of importance and/or concern to you. However, the topic that you choose does not have to be a "problem" or a very personal issue in order to provide ________________ with the opportunity to practice the required skills. Each conversation will be 30 minutes for three sessions so that ____________ can adequately demonstrate command of these skills. However, if at anytime you wish to terminate the conversation, please feel free to do so.

Thank you for helping our students as they gain the experience necessary to be effective helping professionals.

I grant permission to video-record this conversation.

________________________________________

Name

________________________________________

Date
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): Educational Psychology

2. Course prefix, number and complete title of course: CPSY 603: School Counseling Group Interventions

3. Catalog course description (not to exceed 50 words): Development of group counseling interventions for children and adolescents in school settings.

4. Prerequisite(s):

   Graduate Classification; Approval of Department Head

   Cross-listed with: Stacked with:

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

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 program(s) (e.g., B.A. in history)

      MED in Educational Psychology - School Counseling Program

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

      Electives will be granted permission to enroll on a case by case basis as course enrollment permits.

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)

   CPSY 603 SCH COUNS GRP INTERVENT

   Lec Lab SCH CIP and Fund Code Admin. Unit Acad. Year HCE Code
   0 3 0 0 0 3 1 3 1 1 0 1 0 0 4 0 9 2 0 1 4 - 15 0 0 3 6 3 2

   Approval recommended by:

   [Signatures and dates]

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

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

   Submitted to Coordinating Board by:

   [Signature] Date

   [Signature] Effective Date

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

CPSY 603: SCHOOL COUNSELING GROUP INTERVENTIONS
COURSE SYLLABUS SUMMER 2014 - Session 2

Instructor: Jamilia Blake, Ph.D.  Office: 706 Harrington Tower Office
Phone: 862-8341  Skype: jjblake25
Email: jjblake@tamu.edu  Office Hours: By appointment

*direct email is the best way to contact me

COURSE DESCRIPTION:
The School Counseling Group Interventions course is designed to provide students instruction in
developing group counseling interventions for children and adolescents in school settings.
Prerequisites: Graduate Classification and Approval of Department Head.

COURSE OBJECTIVES:
The major goal of this course is for students to obtain knowledge and skills related to the
development and implementation of school-based counseling group interventions. Specifically,
the objectives of this course are to:

1. Understand group theory and processes as it pertains to practice in school settings
2. Learn how group dynamics can impact counseling group interventions
3. Understand potential problems encountered when running school-based counseling
group interventions
4. Develop skills to facilitate group interventions with children and adolescents
5. Learn techniques to facilitate different type of group activities, including crisis
   intervention in group contexts, support groups, skilled-based group interventions, and
   process groups
6. Become familiarized with empirically supported group intervention for children and
   adolescents with social anxiety/social phobia, generalized anxiety, depression and
   social skills deficits
7. Learn to facilitate group interventions
8. Develop ideas to produce culturally sensitive group interventions to diverse children
   and adolescents

PROFESSIONAL STANDARDS ADDRESSED IN THIS COURSE
This course is designed to meet the following School Counselor Certificate Standards as
outlined in the Texas Administrative Code Rule §239.15:

Standard II: Learner-centered skills: the certified school counselor applies the
knowledge base to promote the educational, personal, social, and career
development of the learner
   II.3 counsel individuals and small groups using appropriate counseling theories
      and techniques in response to student needs
   II.6 demonstrate proficiency in teaching small and large groups by actively
      engaging students in the learning process

Standard III: Learner-centered process: the certified school counselor participates
in the development, monitoring, and evaluation of a developmental guidance and
counseling program that promotes learners’ knowledge, skills, motivation, and personal growth.

III.3 use both prevention and intervening strategies to address the concerns of learners and to help them clarify problems and situations, set goals, explore options, and implement change

**Standard V. Learner-centered communication:** The certified school counselor, and advocate for all students and the school, demonstrates effective professional and interpersonal communication skills. The certified school counselor must:

V.1 demonstrate effective communication through oral, written, and nonverbal expression
V.2 use knowledge of group dynamics and productive group interaction

This course is also designed to meet the following American School Counselor Association 2012 National Standards for Students:

**Standard A: Students will acquire the knowledge, attitudes and inter-personal skills to help them understand and respect self and others.**
A2: Acquire Interpersonal Skills
- Recognize that everyone has rights and responsibilities
- Respect alternative points of view
- Recognize, accept, respect and appreciate individual differences
- Recognize, accept and appreciate ethnic and cultural diversity
- Recognize and respect differences in various family configurations
- Use effective communications skills
- Know that communication involves speaking, listening and nonverbal behavior
- Learn how to make and keep friends

**Standard B: Students will make decisions, set goals and take necessary action to achieve goals.**
B1: Self-knowledge Application
- Use a decision-making and problem-solving model
- Understand consequences of decisions and choices
- Identify alternative solutions to a problem
- Develop effective coping skills for dealing with problems
- Demonstrate when, where and how to seek help for solving problems and making decisions
- Know how to apply conflict resolution skills
- Demonstrate a respect and appreciation for individual and cultural differences
- Know when peer pressure is influencing a decision Identify long- and short-term goals
- Identify alternative ways of achieving goals
- Use persistence and perseverance in acquiring knowledge and skills
- Develop an action plan to set and achieve realistic goals

**COURSE DELIVERY STRUCTURE**

This course will be taught fully online asynchronously via Elearning: [http://elearning.tamu.edu](http://elearning.tamu.edu). Course readings, supporting materials, and lectures will be accessible via elearning. Students are strongly encouraged to complete the VISTA elearning orientation before the class starts [http://its.tamu.edu/elearning-orientation](http://its.tamu.edu/elearning-orientation). All assignments will be submitted through elearning.
**Time Commitment:**
Students should anticipate devoting 3 to 4 hours per day to completing reading assignments, listening to the course lectures, viewing course videos, and completing other course requirements. This amount of time is standard for any short summer session course.

**Technology Requirements**
To effectively participate and maximize all the benefits of your instruction, students enrolling in distance learning courses should meet the following technology requirements.

<table>
<thead>
<tr>
<th>MINIMUM TECHNOLOGY REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internet Connection</strong></td>
</tr>
<tr>
<td>Cable Internet or DSL recommended. Here's additional information: <a href="http://www.cnet.com">Cnet Review</a></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
</tr>
<tr>
<td>Windows XP/2000 SP3</td>
</tr>
<tr>
<td>Pentium III 450MHz or faster processor (or equivalent)</td>
</tr>
<tr>
<td><strong>Minimum Requirements</strong></td>
</tr>
<tr>
<td><strong>Windows</strong></td>
</tr>
<tr>
<td>Internet Explorer 6.0 or later, Firefox 3 <em>(with the MediaWrap 0.1.7.3 add-on)</em>, Safari 3.2.1 or later, Opera 7.11 or later, or Chrome (which are all free downloads)</td>
</tr>
<tr>
<td><strong>MAC</strong></td>
</tr>
<tr>
<td>Mac OS X 10.2</td>
</tr>
<tr>
<td>PowerPC® G3 500MHz or faster processor</td>
</tr>
<tr>
<td>Intel Core™ Duo 1.83GHz or faster processor</td>
</tr>
<tr>
<td>512 MB of RAM</td>
</tr>
<tr>
<td><strong>Browser Requirements</strong></td>
</tr>
<tr>
<td><strong>Windows</strong></td>
</tr>
<tr>
<td>Firefox 3 <em>(with the MediaWrap 0.1.7.3 add-on)</em>, Opera 6, Safari 3.2.1 or later (which are free downloads)</td>
</tr>
<tr>
<td><strong>MAC</strong></td>
</tr>
<tr>
<td>Firefox 3 <em>(with the MediaWrap 0.1.7.3 add-on)</em>, Opera 6, Safari 3.2.1 or later (which are free downloads)</td>
</tr>
<tr>
<td><strong>Media Hardware</strong></td>
</tr>
<tr>
<td>DVD player</td>
</tr>
<tr>
<td>Video card with at least 64MB of dedicated memory</td>
</tr>
<tr>
<td>Webcam <em>(Amazon.com search results)</em></td>
</tr>
<tr>
<td>Headset <em>(Amazon.com search results)</em></td>
</tr>
<tr>
<td>Sound card with speakers</td>
</tr>
<tr>
<td><strong>Media Software</strong></td>
</tr>
<tr>
<td>Flash Player 9 or better <em>(download)</em></td>
</tr>
<tr>
<td>Adobe Reader 8 or better <em>(download)</em></td>
</tr>
<tr>
<td>Real Player 8* or better <em>(download)</em></td>
</tr>
<tr>
<td>Java *(for most systems use J2SE(TM) Runtime Environment 5.0) <em>(download)</em></td>
</tr>
<tr>
<td>Windows Media Player 9 or better <em>(download)</em></td>
</tr>
<tr>
<td>If you can't view videostreamed presentations email <a href="mailto:helpdesk@tamu.edu">helpdesk@tamu.edu</a> or call 979.845.8300. Also, you should visit the university software store for Microsoft office and other essential software needs: <a href="http://www.software.tamu.edu">https://software.tamu.edu</a></td>
</tr>
</tbody>
</table>

For Technology Assistance
Go to http://elearning.tamu.edu and scroll over “NEED HELP?” and click “ASK FOR HELP” near the top of the page. You will then have several choices, including filling out an online form, searching FAQs, instructions on going to an on campus lab for help, or calling the help desk (24/7) at 979-845-8300

Required Course Materials:

All other course readings will be available on Vista Elearning (http://elearning.tamu.edu/). Below please find a list of the required readings and videos for this course:


Evidenced based interventions for children and adolescents:
http://effectivechildtherapy.com/sccap/?m=sPro&fa=pro_ESToptions#sec6

**Recommended resources (not required for course)**


**COURSE POLICIES**

*Learning Expectations and Respecting the Educational Rights of Others:* You may be doing a number of different activities and assignments during this course. In all of them, I want you to try to understand what you have heard and read, but most importantly to critically analyze what you’ve heard and read and how this information integrates with your previous experiences, professionally and personally, and prior coursework. Therefore, you are encouraged to ask questions and to agree or disagree.

I will also ask you to share your thinking both in class discussion and in writing. Sharing your thinking can feel very risky; we all have felt the fear that we will ask a stupid question, put forward some naive interpretation, or unpopular idea. I will expect you to take those risks anyway. It may help to know that I will not expect you to necessarily agree with me, the instructor, your classmates, or with any of the authors we read. If you find yourself disagreeing, I ask only that you disagree with respect for others’ ideas and do your best to explain why you disagree--that is how you will help the rest of us learn. Thus, I ask that each person exhibit respectful behavior and strive to respect the educational rights of others by exhibiting Netiquette.

“Netiquette”

You may find that students online are much more brash and opinionated than in the traditional classroom setting. The anonymity of the online environment seems to foster freedom of expression. This can be both a benefit and a hindrance. No language or behaviors that make others feel uncomfortable will be tolerated. You are expected to address the instructor, your peers, and guest speakers in a professional tone and manner. When your behavior adversely affects the classroom’s aim to foster educational excellence, disciplinary action in accordance with the Student Rules 21.0 (Classroom Behavior) as revised in 1995 will be instituted.

Below are some tips to keep in mind when communicating via the web:
• In emails, discussion boards, chat rooms, and all electronic communication, please focus comments on the content, not on someone's character.

• Think before you send. In cyberspace, what goes around comes around – fast! Anything you send out can be easily copied and forwarded with the click of a mouse.

• WRITING IN ALL CAPS INDICATES THAT YOU ARE SHOUTING! Please do not shout.

Flaming is the process of expressing strong emotions or opinions via email. Given the content of this course, it is expected that students will be passionate about some topics and have strong emotional reactions to comments and posting of others. Whereas open discussion and disagreement is allowable, flaming wars are prohibited in which two or three individuals send a series of angry letters toward each other which dominate discussion forums and alter the tone of the course.

**Attendance:** The attendance policy for this class will be administered in accordance with Student Rule #7: [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07).

**Readings:** You are expected to complete all of the assigned readings prior to submitting assignments.

**Lectures:** You are expected to read the material provided in the course schedule and then listen to the lectures accessed online at [http://elearning.tamu.edu](http://elearning.tamu.edu).

**Videos:** You are expected to review all assigned videos.

**Assignments:** All assignments must be completed individually, unless otherwise specified by the instructor. Please read the instructions/description for each assignment very carefully. The course requirements and rubrics provide excellent information. Work that does not meet the specific criteria provided will result in lost points. Proofread your work for spelling and mechanics. Assignments are due on the dates listed in this syllabus at the beginning of class unless otherwise specified. If you have questions or need clarification on assignments, I encourage you to seek assistance from me via email, phone, or by setting up an appointment. Late assignments are discouraged and may be assigned a lower score except in cases of University excused absences. Please see students rule 7 (reference above) for more information on excused absences. Please be aware of academic misconduct policies, including plagiarism. If you have any questions about this, visit TAMU’s website at [http://aggiehonor.tamu.edu/Student%20Rules/definitions.html](http://aggiehonor.tamu.edu/Student%20Rules/definitions.html)

**Correspondence:** Correspondence related to the course is sent to your TAMU email account. Consistent with Student Rule 61.2.3 ([http://student-rules.tamu.edu/rule61](http://student-rules.tamu.edu/rule61)) students are expected to regularly check their TAMU email account for course-related communications.

**TOLERANCE STATEMENT**
The faculty of the College of Education and Human Development values and respects diversity and the uniqueness of each individual. The faculty affirms its dedication to non-discrimination in our teaching, programs, and services on the basis of race, color, religion, gender, age, sexual orientation, domestic partner status, ethnic or national origin, veteran status, or disability. The College of Education and Human Development at Texas A & M University is an open and affirming organization that does not tolerate discrimination, vandalism, violence or hate crimes. We insist that appropriate action be taken against those who perpetrate such acts. Further, the
College is committed to protecting the welfare, rights, and privileges of anyone who is a target of prejudice or bigotry. Our commitment to tolerance, respect, and action to promote and enforce these values embraces the entire university community. In the spirit of shared responsibility, each University unit, student organization, and community member is encouraged to help make our campus, and this class, a welcoming place for all. Should you have any concerns related to respect for diversity or feel that you (or any others) are being discriminated against, please contact your departmental Ombudsperson, the Department Head, or the College Ombudsperson.

AMERICANS WITH DISABILITIES ACT
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.

SCHOLASTIC DISHONESTY
As commonly defined, plagiarism consists of passing off as one's own the ideas, words, and writings, etc., that belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. If you have any questions regarding plagiarism, please consult the current issue of the Texas A & M University Student Rules, under the section, “Scholastic Dishonesty.”

ACADEMIC INTEGRITY STATEMENT
As of September 1, 2004, all syllabi shall contain a section that states the Aggie Honor Code and refers the student to the Honor Council Rules and Procedures on the web: aggiehonor.tamu.edu

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: aggiehonor.tamu.edu

COURSE REQUIREMENTS:

Reading Quizzes (35 points). Quizzes will be administered weekly on required readings, videos, and lectures. Each quiz is worth 7 points.

Video Quizzes (20 points): Students will complete quizzes on the content presented in assigned videos. Video quizzes will be short answer questions. Each video quiz is worth 10 points.
Group counseling session plan (45 points). Students will have to develop 2 sessions for a counseling group geared toward elementary, middle, or high school students. Students will be required to

- Identify a target developmental age for your group, how group members will be selected to participate, and the size of your group. Explain how you came to this conclusion, drawing from information you gained from the course content by providing a rationale section. (5 points)
- Describe the nature of your counseling group (what topic/area) you will be choosing and create a list of anticipated treatment goals for the group. Be sure to select one of the group topics covered in the course readings. Provide a rationale for why you believe this particular topic is important for the age group you selected. (10 points)
- Include all of the forms you need to start the group, including parent permission forms, letters to teachers/parents informing them of your group, sample advertisements about the group, sign-up sheets for students etc. (5 points)
- Describe the activities that will be done for the three components of each session and how they relate to the treatment goals you provided. These activities may be drawn from other counseling resources or manuals; however, these resources should be appropriately cited in your session plan. (20 points, with each session description worth 10 points)
- Format of your group counseling plan (5 points):
  - Your group counseling plan should be typed and submitted as a single document in Microsoft Word or as an Adobe PDF
  - Include a table of contents indicating what pages specific information can be found
  - Please appropriately label each section of your group counseling plan with page headers or title pages
  - Please proofread to ensure that no grammatical/spelling errors are present

<table>
<thead>
<tr>
<th>Grading Policy</th>
<th>Grade Determination:</th>
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<tbody>
<tr>
<td>Weekly Reading Quizzes (5)</td>
<td>A = 90 – 100</td>
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<tr>
<td>Video Quizzes (2)</td>
<td>B = 80-89</td>
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<tr>
<td>Group Counseling Treatment Plan (1)</td>
<td>C = 70-79</td>
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<td>F &lt;70</td>
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### COURSE SCHEDULE AND ASSIGNMENTS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Required Readings/Videos</th>
<th>Tasks/Assignments due</th>
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</thead>
<tbody>
<tr>
<td><strong>Week 1: Stages of Group Development</strong></td>
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</tbody>
</table>
Complete and submit the student information survey |
<p>| W | Initial stage of a group | Corey, Corey, &amp; Corey, Ch.5 | |
| Th | | | |
| F | Transition stage of a group | Corey, Corey, &amp; Corey, Ch.6 | |
| Sa | Working stage of a group | Corey, Corey, &amp; Corey, Ch.7 | |
| Su | | Quiz 1 | |
| <strong>Week 2: Getting Started</strong> | | |
| M | Final stage of a group | Corey, Corey, &amp; Corey, Ch.8 | |
| T | Groups for children and adolescents | Corey, Corey, &amp; Corey, Ch. 9 &amp; 10 | |
| Th | | | |
| Sa | | | |
| Su | | | |</p>
<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
<th>Resource</th>
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<tbody>
<tr>
<td>M</td>
<td>Depression</td>
<td>What is evidenced-based practice? <a href="http://effectivechildtherapy.com/sscap/?m=sPro&amp;fa=pro_ESToptions#sec1">link</a></td>
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<tr>
<td></td>
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<td>interventions for depression during childhood: Exemplary programs (pp.</td>
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<td>266-295). In M. Mayer, R. Van Acker, J. E. Lochman, &amp; F. M. Gresham</td>
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<td>(Eds). Cognitive-behavioral Interventions for Emotional and Behavioral</td>
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<td>therapy for anxious youth in school settings: Advances and challenges</td>
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<td>(pp. 173-203). In M. Mayer, R. Van Acker, J. E. Lochman, &amp; F. M.</td>
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<td>Gresham (Eds). Cognitive-behavioral Interventions for Emotional and</td>
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<td>for Anxiety Disorders: Exemplary programs (pp. 204-234). In M. Mayer,</td>
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<td>R. Van Acker, J. E. Lochman, &amp; F. M. Gresham (Eds). Cognitive-behavioral</td>
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<td></td>
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<td>Interventions for Emotional and Behavioral Disorders. Guilford Press: New</td>
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<tr>
<td>Day</td>
<td>Topic</td>
<td>Resource</td>
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</tr>
<tr>
<td>F</td>
<td>Social Skills</td>
<td>Texas Education Code, Chapter 37 Section 37.001</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://www.statutes.legis.state.tx.us/Docs/ED/htm/ED.37.htm">http://www.statutes.legis.state.tx.us/Docs/ED/htm/ED.37.htm</a></td>
</tr>
<tr>
<td>Su</td>
<td>Social Skills</td>
<td>Video Quiz 2</td>
</tr>
</tbody>
</table>

**Week 4: Evidenced-Based Group Interventions Pt 2**

| Day | Topic                                      | Resource                                                                 | |
|-----|-------------------------------------------|--------------------------------------------------------------------------|
| Th  | Interpersonal Violence                   | Resources: Texas School Safety Center Resources |

| Date | Topic                                      | Resource                                                                 | |
|------|-------------------------------------------|--------------------------------------------------------------------------|
| F    | Social Skills                             | Texas Education Code, Chapter 37 Section 37.001                           | Quiz 3     |
|      |                                           | http://www.statutes.legis.state.tx.us/Docs/ED/htm/ED.37.htm               |            |
| Su   | Social Skills                             | Video Quiz 2                                                             |            |

**Week 4: Evidenced-Based Group Interventions Pt 2**

| Day | Topic                                      | Resource                                                                 | |
|-----|-------------------------------------------|--------------------------------------------------------------------------|
| Th  | Interpersonal Violence                   | Resources: Texas School Safety Center Resources |

| Date | Topic                                      | Resource                                                                 | |
|------|-------------------------------------------|--------------------------------------------------------------------------|
| F    | Social Skills                             | Texas Education Code, Chapter 37 Section 37.001                           | Quiz 3     |
|      |                                           | http://www.statutes.legis.state.tx.us/Docs/ED/htm/ED.37.htm               |            |
| Su   | Social Skills                             | Video Quiz 2                                                             |            |

**Week 4: Evidenced-Based Group Interventions Pt 2**

<p>| Day | Topic                                      | Resource                                                                 | |
|-----|-------------------------------------------|--------------------------------------------------------------------------|
| Th  | Interpersonal Violence                   | Resources: Texas School Safety Center Resources |</p>
<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
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<td>Sexting Prevention Education</td>
<td><a href="http://www.txssc.txstate.edu/K12/sexting">Website</a></td>
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<td></td>
<td>Teen Dating Violence</td>
<td><a href="http://www.txssc.txstate.edu/K12/gender-respect">Website</a></td>
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<td>Quiz 4</td>
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<td><strong>Week 5: Crisis Intervention</strong></td>
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<td>Quiz 5</td>
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<td>Su</td>
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<td></td>
<td>Final Project due:</td>
<td>First day of final exams by 5pm, CST</td>
</tr>
</tbody>
</table>
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 Marine Biology

2. Course prefix, number and complete title of course:
   MARB 618 Marine Science of the Pacific Rim

3. Catalog course description (not to exceed 50 words):
   Course intended for students interested in conducting research on the marine biology or fisheries of the Pacific Rim countries; tailored to specific interests of individual students; course involves directed readings, participation in the student's research project, discussions with the Instructor, and final report for possible publication

4. Prerequisite(s):
   Cross-listed with: ________________________________
   Stacked with: ________________________________
   Cross-listed courses require the signature of both department heads.

5. Is this a variable credit course? □ Yes   □ No   If yes, from _________ to _________

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

7. This course will be:
   a. required for students enrolled in the following degree programs(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)
      any master's or doctoral program

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)

<table>
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<tr>
<th>Lec</th>
<th>Lab</th>
<th>SCH</th>
<th>CLI and Fund Code</th>
<th>Admin Unit</th>
<th>Year</th>
<th>Code</th>
<th>Level</th>
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<td>200</td>
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<td>010298</td>
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</tbody>
</table>

   Approval recommended by:
   John Schwarz
   Date

   Chair, College Review Committee
   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 – 3/10
Texas A&M University at Galveston
Marine Biology Interdisciplinary Program

MARB 618 - Course Syllabus
Marine Science of the Pacific Rim

Instructor: Dr. Randall Davis
Email: davisd@tamug.edu
Office: 409-740-4712
Cell: 281-250-7839

Office Hours: By appointment (OCSB 246)
Prerequisites: Permission of the Instructor

Class Details: Summer I and Summer II, 2014- (dates May 14 – Jul 2, Jul 8 – Aug 18, Location: For those students conducting field research, the course will involve directed reading, participation in their respective research project, discussions with the Instructor, and a final report or manuscript suitable for publication. For those students conducting a literature review only while at TAMUG, the course will involve directed reading, discussions with the Instructor, and a final report or manuscript suitable for publication.

Textbook: None required
Prerequisites: Graduate student status in a TAMU or TAMUG graduate program

Course description/objectives: This 3-0 credit hour summer course is intended for graduate students who are interested in conducting research (field or literature based) on the marine biology or fisheries of Pacific Rim countries. The course will be tailored to the specific interests of the individual students. For those students conducting field research, the course will involve directed reading, participation in their respective research project, discussions with the Instructor, and a final report or manuscript suitable for publication. For those students conducting a literature review only, the course will involve directed reading, discussions with the Instructor, and a final report or manuscript suitable for publication.

Course Syllabus

Topics/Discussions – Calendar of Activities

1. Geography and geology of the Pacific Rim
2. Oceanography of the Pacific Rim
3. Biological Oceanography of the Pacific Rim
4. Fisheries in the Pacific Rim
5. Marine Mammals of the Pacific Rim
6. Effect of climate change on the ecology of the Pacific Rim

Learning Outcomes: At the conclusion of the course, students should better understand of the physical and biological oceanography of the Pacific Rim and its influence on marine mammal populations and fisheries.
Evaluation and grading

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Overall Grade Percentage</th>
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<tbody>
<tr>
<td>Independent research &amp; assignments (Final report at end of summer term or to be arranged between Dr. Davis and student.)</td>
<td>75%</td>
</tr>
<tr>
<td>Presentations and discussion</td>
<td>25%</td>
</tr>
<tr>
<td>Total:</td>
<td>100%</td>
</tr>
</tbody>
</table>

A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; F = <60%

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 the director of counseling.

Academic Integrity Statement
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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): College of Engineering

2. Course prefix, number and complete title of course: SYEN 640 Systems Thinking and Analysis

3. Catalog course description (not to exceed 50 words): Introduction to the systems thinking process and the fundamental considerations associated with the engineering of large-scale systems or system of systems.

4. Prerequisite(s): Graduate classification: Math 304 or approval of instructor

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 program(s) (e.g., B.A. in history)
      Master of Engineering in Systems Engineering
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)
      MS or ME in Industrial Engineering, Civil Engineering, Electrical and Computer Engineering, Mechanical Engineering, Aerospace Engineering, Petroleum Engineering and Computer Science and Engineering

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)
   SYEN 640 Systems Thinking and Analysis

<table>
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<tr>
<th>Lect.</th>
<th>Lab</th>
<th>SCH</th>
<th>CIP and Fund Code</th>
<th>Admin. Unit</th>
<th>Acad. Year</th>
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<td>6 9 6 5</td>
<td>1 5</td>
<td>0 3 6 3 2</td>
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</tbody>
</table>

   Approval recommended by:
   Department Head or Program Chair (Type Name & Sign) 1/16/11

   John Criscione

   Chair, College Review Committee 1/16/14
   Department Head or Program Chair (Type Name & Sign) Date
   (if cross-listed course)
   John Criscione
   Dean of College 1/16/14

   Submitted to Coordinating Board by:
   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
COURSE NUMBER: ISEN 640
COURSE NAME: SYSTEMS THINKING AND ARCHITECTURE

COURSE DEVELOPER: Dr. Lewis Ntaimo, 4008 Emerging Technologies Building: 458-2360; ntaimo@tamu.edu

Text books: No Required Text Book, References:


Course Description:
Introduction to the systems thinking process, systems architecture, and the fundamental considerations associated with systems engineering. These include system life cycle models, systems modeling, systems design, and the system development process phases: needs analysis, concept exploration, concept definition, engineering design, integration and evaluation; production, operations and support.

Course Learning Objectives:
Students will learn the concepts and principles of systems thinking; the anatomy of engineered systems and their complex interfaces and interactions; formulating, analyzing, and interpreting issues associated with engineered systems. The student will also learn to use systems thinking techniques and software tools necessary for systems engineering practice and be able to model and analyze engineered systems using systems engineering tools.

Course Overview:
This course will introduce students to systems thinking and engineering and the fundamental considerations associated with the engineering of large-scale, complex systems. The course provides a comprehensive understanding of systems ideas and methods to help students achieve success with their future challenging projects regardless of their discipline. The course is suitable
for students at the master’s level and only requires the student to have linear algebra and basic analytical thinking skills. The course covers, 1) definitions and classification of systems, hierarchical models of complex systems, and systems of systems, 2) systems thinking ideas and systems engineering tools, 3) functional and information modeling for complex systems, 4) engineering and design of large scale systems, including the system development process, system life cycle models, and systems engineering documents, 5) formulation of issues and constraints, from needs analysis, concept exploration, through to concept definition, 6) design and evaluation of system models, from advanced development, engineering design, to system integration and evaluation. The course will draw on case studies and examples from several fields including engineering, ecology, healthcare, and energy. To keep up with modern systems engineering tools, the students will be introduced to Unified Modeling Language (UML) and to Rational systems Developer.. To reinforce the material covered in lectures, students will form semester teams and each team will work on an interesting real-life problem of their choice, and apply the systems engineering approach to model, analyze and design a system model to address the problem. Each team will learn to use systems modeling software to develop the systems engineering documents for the project, write a project report and give a presentation of their project at the end of the semester.

**Topics to be covered**

- **Week 1**...........Introduction to Systems Thinking and Engineering
- **Week 2**.........Functional and Information Modeling
- **Week 3**.........Survey of System Types & Discipline Specific Engineering
- **Week 4**.........Systems Thinking: Concepts
- **Week 5**.........Systems Thinking Tools: Causal Loop Models and N² Charts
- **Week 6**.........Basic Set Theory: Sets, Relations and Functions
- **Week 7**...........Systems Modeling: Continuous and Discrete Event Models
- **Week 8**.........Model Synthesis: Combined Discrete/Continuous models; Applications and examples; Interaction and Output analysis
- **Week 9**.........Systems Design Theory: System Requirements
- **Week 10**........Systems Design Theory: Functional, Buildable and Implementable System Designs
- **Week 11**........Systems engineering tools
- **Week 12**........The System Development Process
- **Week 13 & 14**...Capturing Social and Technical Concerns/Issues; Formulation of Constraints, boundaries and interactions
- ............................Project: Case Study and Report
Evaluation

- Homework
  - Weekly
  - 20% of the grade
- Test 1: After Week 5
  - 20% of the grade
- Test 2: After Week 10
  - 20% of the grade
- Final Exam: As scheduled
  - 20% of the grade
- Project Report: Due last day of class
  - 20% of the grade

The instructor reserves the right to assign written reports on outside topics which will be reviewed and used to determine the individual’s class grade in borderline cases. Class participation will be noted and assessed. Final grades will be assigned as follows. There are no exceptions. GA is the students Grade Average.

<table>
<thead>
<tr>
<th>Average Grade</th>
<th>Course Grade</th>
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<td>100 ≥GA ≥ 90</td>
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<tr>
<td>90 &gt; GA ≥ 80</td>
<td>B</td>
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<tr>
<td>80 &gt; GA ≥ 70</td>
<td>C</td>
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<td>70 &gt; GA ≥ 60</td>
<td>D</td>
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<tr>
<td>60 &gt; GA ≥ 0</td>
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**General Policies:**
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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): College of Engineering

2. Course prefix, number and complete title of course: SYEN 641 Systems Engineering Methods and Frameworks

3. Catalog course description (not to exceed 50 words): Concepts, methodologies, methods and tools for discovery, definition, analysis, design, creation and sustainment of systems involving information, physical and human elements; architecture modeling methods include IDEF/UPDM; systems engineering frameworks include DoDAF/MoDAF, and Zachman, analysis tools include executable architectures to assess consistency, interoperability and performance.

4. Prerequisite(s): Math 304 or approval of instructor

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

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.
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7. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in History)
      Master of Engineering in Systems Engineering
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in Geography)
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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) Lect. Lab SCH CHP and Fund Code Admin. Unit Aacd. Year EEC Code Approval recommended by:

   SYEN 641 SYST ENG R METHODS FR W K

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   John Criscione 1/16/14 John Criscione 1/16/14
   Department Head or Program Chair (Type Name & Sign) Date Chair, College Review Committee Date

   Department Head or Program Chair (Type Name & Sign) Date (if cross-listed course)
   John Criscione 1/16/14
   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 – 3/10
COURSE NUMBER: SYEN 641
COURSE NAME: SYSTEMS ENGINEERING METHODS AND FRAMEWORKS

COURSE DEVELOPER: Dr. Richard J. Mayer, 4068 Emerging Technologies Building: 979-260-5274; rmayer@kbsi.com

Text books: None; Current Literature, Open Source Standards, Instructor handouts.

Course Content:
This course is designed to provide the students with an understanding of the concepts, methodology, methods and tools of systems discovery, definition, analysis, design, creation, and sustainment. The main focus of the course is to develop the students’ critical thinking skills to 1) define and analyze the as-is system, 2) develop and communicate the to-be system requirements, 3) transition these requirements into the design specification of a new or modified system, and 4) evaluate the value, correctness, interoperability, and performance of a system design.

Course Learning Objectives:
The student will learn the component methods for systems architecting including: function modeling, process modeling, information and data modeling, ontology modeling and representation, software and system behavioral and structural design, systems dynamics modeling. The student will also learn the standard frameworks for structuring the systems development process and documenting the resulting artifacts. Finally the student will learn the core techniques for system architecture analysis including: requirements analysis, allocation, assessment, and design traceability, 2) design verification, validation, and completeness (VV&C), 3) cost / performance/risk tradeoff analysis, and 4) simulation based architecture execution.

Course Overview:
This course will start with the study of component systems as simple or complex hybrids, involving information, computation, mechanical, and human elements. Later in the course we will study “capabilities” that are formed as collections of interoperating systems – referred to in the current vernacular as a system of systems, or SOS. We will study the way engineered orchestration of the interoperability and combined performance of the collection will result in a desired capability. Throughout the course we will study methods, languages, and techniques that enable us to ‘view’ and analyze the as-is system, develop and communicate the to-be system requirements, and transition these requirements into the design specification of a new or modified system. The initial modeling methods focus will be the IDEF function, information, process, and ontology modeling methods. Other system design modeling methods and languages to be covered are UML and SysML. In depth review of the language stack for ontology modeling will be covered including RDF, OWL, DL, and Common Logic. Our study will be performed within the context of the systems development life cycle and the use of frameworks for applying the systems engineering discipline. The DoD Architecture Framework (DoDAF) will be the primary structure studied. Other enterprise architectural frameworks such as MoDAF, FEA, and the Zachman AF will be surveyed. The primary analysis tools covered will
be simulation based. Particular focus will be given to the use of systems dynamics models and colored Petri nets. The generation and use of executable architectures as a means to rapidly assess consistency, interoperability and performance will be studied in detail.

**Topics to be covered**

- Week 1 – System Architectures and Function Modeling Introduction
- Week 2 – Function Modeling and Introduction to Architecture Frameworks
- Week 4 – System Discovery, Definition, Design & Process Architectures
- Week 5 – System Creation & Sustainment; Process & Object State Architectures
- Week 6 – Information Architecture Method Theory & Practice
- Week 7 – Data Architectures and Introduction to Ontology Modeling Methods
- Week 8 – Ontology Languages & Logic Based Architecture Analysis Methods
- Week 9 & 10 – UML and SysML Based Architecture Methods
- Week 11 – DoDAF Framework Systems, Services, Data and Information, and Standards View
- Week 12 – Architectures to Executable Models & Systems Dynamics Simulation
- Week 13 – Analysis of Alternatives with Executable Architectures
- Week 14 – Project Presentations

**Evaluation**

- **Homework**
  - Weekly
  - 30% of the grade
- **MidTerm:** After Week 7
  - 30% of the grade
- **Final Exam:** As scheduled
  - 10% of the grade
- **Project Report:** Due last day of class
  - 30% of the grade

The instructor reserves the right to assign written reports on outside topics which will be reviewed and used to determine the individual’s class grade in borderline cases. Class participation will be noted and assessed. Final grades will be assigned as follows. There are no exceptions.
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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): College of Engineering

2. Course prefix, number and complete title of course: SYEN 642 Systems Performance Modeling

3. Catalog course description (not to exceed 50 words): Develop and formulate models to evaluate and improve system performance; Survey of Math Programming; decision trees; simulation models; and economic evaluation of systems. Examples and applications of linear programming, nonlinear programming, integer programming, systems simulation, multi-objective formulations, solution interpretation and sensitivity analysis.

4. Prerequisite(s):

Cross-listed with: ____________________________
Stacked with: ____________________________
Cross-listed courses require the signatures of both department heads.

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Approval recommended by:

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

John Criscione
Chair, College Review Committee Date

John Criscione
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 – 3/10
COURSE NUMBER: SYEN 642
COURSE NAME: SYSTEMS PERFORMANCE MODELING
COURSE DEVELOPERS: Luca Quadrifoglio, PhD
CE/TTI Building, Room 301-I:
458-4171; quadrifo@tamu.edu
Raktim Bhattacharya, PhD
HRBB 727C
862-2914; raktim@tamu.edu

Textbooks: None; current literature, instructor handouts and notes.

Course Description:
Development and formulation of models to evaluate and improve system performance; includes a survey of mathematical programming and simulation models. Solution interpretation and sensitivity analyses. Application from a variety of engineering disciplines.

Course Learning Objectives:
Students will learn the key principles needed to identify and/or develop proper models of real systems in order to enhance their performance.

COURSE OVERVIEW:
Systems engineers require the ability to understand and recognize the complexity of real systems and properly identify and/or develop the correct tools to model them. This course will expose students to a survey of techniques needed to properly develop models of real world large complex systems to evaluate and improve their performance. Rather than focusing on solution techniques, this course is primarily intended to provide students with the ability to formulate the systems’ model, recognize and select variables, objectives, constraints and parameters, identifying the needed trade-offs to make the model detailed enough to be representative of the real system, but also simple enough to be manageable. Students will be exposed to a comprehensive overview of deterministic and stochastic models, methods and tools, including mathematical programming and simulation, in multidisciplinary complex system design. The course will also focus on the interpretation of the models’ outputs and sensitivity analyses, with applications from virtually all engineering disciplines, such as aerospace, mechanical, civil.

Topics to be covered
- Week 1 Systems’ Modeling Framework (Objectives, Variables, Constraints and Parameters)
- Week 2 Examples of Large Scale Modeling and Relevant Domain Models
- Week 3 Linear Programming (LP): Models and Graphical Solution
- Week 4 LP: Output Interpretation and Sensitivity Analyses
- Week 5 System Network Modeling and Graph Theory Overview
- Week 6 Integer/Binary and Nonlinear Programming Formulations
- Week 7  Stochastic Systems: Simulation Models (Continuous, Discrete, Combined)
- Week 8  Model Development and Validation
- Week 9  Model Input/Output Analyses
- Week 10 Hierarchical modeling: System of Systems Models
- Week 11 Descriptive Models: Architecture/ADLs
- Week 12 Behavioral Models: State Machines, Stochastic Models
- Week 13 System Analyses using Model Based Systems Engineering
- Week 14 Case Studies and Applications

**Evaluation and Understanding**

2 Tests  
50% of grade  
1 Final Exam  
25% of grade  
Homework assignments  
15%  
Reading /Report Assignments  
10%

The instructor reserves the right to assign written reports on outside topics which will constitute 10% of the earned grade. Class participation will be noted and assessed. Final grades will be assigned as follows. There are no exceptions. GA is the student’s earned grade average.

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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): College of Engineering

2. Course prefix, number and complete title of course: SYEN 643 Theory of Socio-Technical Systems

3. Catalog course description (not to exceed 50 words): Philosophy, origins, theory, principles, and methodologies of complex socio-technical systems; emphasis on holistic thinking for systems engineering. Systems approach; cybernetics; complexity science; physical and biological systems; social, economic, and political systems; network representations of systems; real-world decision-making; system dynamics; emergent behavior; systems architecture; engineered systems today and in the future.

4. Prerequisite(s): Graduate classification

Cross-listed with: Stacked with:

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

5. Is this a variable credit course? □ Yes ☒ No
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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) Lec Lab SCH CIP and Fund Code Admin Unit Acad Year HICE Code
   SYEN 643 Theory of Socio-Technical Systems 0 3 0 0 0 3 1 4 2 7 0 1 0 0 0 6 0 9 6 5 1 4 - 1 5 0 0 3 6 3 2

Approval recommended by:

John Criscione
Department Head or Program Chair (Type Name & Sign) Date 1/16/14

John Criscione
Chair, College Review Committee Date

John Criscione
Dean of College Date 1/16/14

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

Submitted to Coordinating Board by:

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 – 3/10
Course Number: SYEN 643
Course Name: Theory of Socio-Technical Systems
Course Developer: Mark S. Avnet, 4075 Emerging Technologies Building: 458-2339; avnet@tamu.edu

Textbooks
None required; course material builds on a diverse multidisciplinary body of literature. Some of the most cited material will be drawn from the following:


Course Description:
This course will introduce the student to the philosophy, origins, theory, principles, and methodologies of complex socio-technical systems. The purpose of the course is to develop and foster the type of holistic thinking needed to be an effective systems engineer. To accomplish this, the course covers the foundations of systems thinking, natural systems (physical and biological), social and economic systems, complexity science, and various approaches to systems modeling. Based on these fundamentals of the “systems approach,” students will then apply the general theory and principles learned to the design of human-made engineered systems.

Course Learning Objectives:
The primary objective of this course is to introduce students to the key principles behind the theory of complex socio-technical systems. To achieve this objective, it is essential that students learn about the foundations of complex systems from an interdisciplinary perspective. As such, the course draws on literature from a wide array of fields, including engineering, physics, biology, complexity science, economics, sociology, psychology, political science, and
management. Course topics range from the general and abstract to the applied and immediately relevant. Topics covered include foundations of the systems approach, human/machine interaction and cybernetics, complexity science and chaos theory, natural systems (physical and biological), social and economic systems, network representations of systems, real-world decision-making, system dynamics, emergent behavior in complex systems, system architecture, systems engineering organizations, and the role of complex engineered systems today and in the future. The course provides the student with a holistic view of systems (broadly defined) and an appreciation for the inherent complexity of the modern world.

**Course Overview:**
This course will survey the diverse set of topics related to the general theory of complex socio-technical systems. In the first unit (Weeks 1-3), the theoretical basis and origins of the study of complex systems and the "systems approach" are introduced. In the second unit (Weeks 4-7), the discipline of complexity science is introduced and applied to physical, biological, and social systems, and the tools used for creating and analyzing network representations of systems are discussed. The third unit (Weeks 8-10) provides an overview of modeling approaches for various aspects of complex systems, including decision-making, time dependence, and emergence. The fourth and final unit (Weeks 11-14) focuses on the organizations that design and develop complex engineered systems and discusses the relevance of complex systems in the modern world. The course will involve extensive reading covering both depth and breadth. The instruction will be highly participative and discussion-oriented with lecture being limited to brief introduction of unfamiliar topics. Guest speakers will be invited regularly to demonstrate the real-world relevance of the topics discussed.

**Topics to be covered:**
- Week 1........**Introduction to Socio-Technical Systems**
- Week 2........**Theoretical Basis for the Study of Complex Systems**
- Week 3........**Human/Machine Interaction and Cybernetics**
- Week 4........**Complexity Science and Chaos Theory**
- Week 5........**Physical and Biological Systems**
- Week 6.........**Social, Economic, and Political Systems**
- Week 7.........**Network Representations of Systems**
- Week 8.........**Complexity and Human Decision-Making**
- Week 9.........**Dynamic Modeling of Complex Systems**
- Week 10.......**Emergence and Agent-Based Modeling**
- Week 11.......**Systems Architecting and Social/Organizational Aspects of Design**
- Week 12.......**Complexity in the Design of Human-Made Engineered Systems**
- Week 13.......**Globalization and the World Economy as a Complex System**
- Week 14.......**Predicting the Future in a Complex World**
Evaluation
- No exams
- Weekly one-page reflection papers on assigned readings and in-class discussion on material covered (25% of the grade)
- Three projects
  - The first will be completed by individuals and will involve analyzing a system
    - Due during Week 8
    - 25% of the grade
  - The second will be done in teams of 2 to 3 and will involve modeling a system
    - Due during Week 12
    - 25% of the grade
  - The third will be done in teams of 4 to 6 and will involve designing a system
    - Due during finals week
    - 25% of the grade

Grading Scale
90% - 100%  A
80% - 89%  B
70% - 79%  C
60% - 69%  D
<60%  F

Important Note on Attendance: This is a highly participative and discussion-oriented course. As such, your attendance and thoughtful discussion during class will make up a significant part of your grade. Each week, you will submit and discuss a one-page reflection paper on the assigned readings. Your reflection papers combined with your participation in these discussions will make up 25% of your overall grade for the course.

General Policies:
Plagiarism and “copying” will not be tolerated and will result in a grade of zero (0) for all students involved, regardless of active or passive participation. Students will be expected to have completed any HW assignments and be comfortable with the lecture material covered during the week. General HW assignments will not be graded. A departmental website directory will be maintained on the “cannibal” course drive of the ISEN website. This site will be used to archive all PPT class presentations, selected handout materials and other courseware. Cheating on any Quiz will result in a grade of zero and immediate referral to appropriate University officials.

Class Attendance and Make-Up Policy:
In a course of this nature, class attendance, participation, and the timely completion of assignments is critical. Specifically, class attendance is an individual student responsibility. Absences that permit making up a major examination or the timely fulfillment of a written assignment will be authorized by the instructor. The exception is University Calendar excused
absences or sickness supported by a letter from an authorized physician. A University authorized excused absence is only a holiday posted to the University calendar. Students are referred to the current copy of University Regulations for comprehensive guidelines. It is the responsibility/obligation of the instructor to provide students with realistic due dates for homework assignments and dates for examinations far enough in advance to permit student preparation. Major quizzes will be announced 7-10 days in advance. Class attendance might be kept by the instructor and can affect the final course grade in borderline cases.

Absences will be authorized (and work permitted to be made up or handed in for evaluation) for reasons deemed sufficient by the instructor or by the University. Authorized absences generally cover the following:

- Illness/injury (Requires a doctor’s note)
- Participation in an activity appearing on the University authorized list
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- Religious holy days that are on the University Calendar

**JOB INTERVIEW TRIPS AND SOCIAL EVENTS ARE NOT ALLOWABLE ABSENCES**

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**CONFERENCES ARE NOT ALLOWABLE ABSENCES**

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http://student-rules.tamu.edu/rule07

**Promptness:**

There is no excuse for habitual late arrival to class lectures. The class will start as soon as the instructor arrives and will finish when the instructor dismisses class, within the bounds of the formal class duration. The instructor will make every attempt to arrive on time and the same is
expected of students. If a student arrives more than 15 minutes late, that student can be denied attendance that day. This is not simply being “picky or mean”. Late arrivals disrupt class, cause irritation and interruption, and builds poor character.

**POP QUIZ POLICY:**
Students are expected to attend class on any days that an “authorized” absence is not in effect. To strengthen class participation, the instructor reserves the right to adopt and use a “pop quiz” policy if necessary. Pop quizzes can be administered during the semester at any class time. These quizzes will cover basic material covered in the preceding class period or on the same day the quiz is given. Pop quizzes might be used to determine final grades in “borderline cases”, but will not be averaged into all other semester exercises to determine the final grade assignment.

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If a test is missed, you must have a written authorized excuse. If possible, please let me know before the test; otherwise, I must be notified within two days of your return to school. Make up exams will be given in accordance with University Rules (see Rule 7 at [http://student-rules.tamu.edu](http://student-rules.tamu.edu)).”

**The American Disabilities Act (ADA):**
The ADA is a federal antidiscrimination 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 the Department of Student Life, Service for Students with Disabilities in Cain Hall, Rm. B118, or call 845-1637. (For additional information visit [http://disability.tamu.edu](http://disability.tamu.edu).)

**Academic Integrity**
"An Aggie does not lie, cheat, or steal or tolerate those who do."
It is the responsibility of students and instructors to help maintain scholastic integrity at the university by refusing to participate in or tolerate scholastic dishonesty. (For the Honor Council rules and procedures, see the web site [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu))
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): College of Engineering

2. Course prefix, number and complete title of course: SYEN 644 Decision Making Under Uncertainty in Systems Engineering


4. Prerequisite(s): Graduate classification

Cross-listed with: Stacked with:

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

5. Is this a variable credit course? [ ] Yes [X] No If yes, from ______ to ______

6. Is this a repeatable course? [ ] Yes [X] No If yes, this course may be taken ______ times.
Will this course be repeated within the same semester? [ ] Yes [X] No

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

<table>
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<th>SYEN</th>
<th>644</th>
<th>DECISIONS</th>
<th>RISK &amp; UNCERTainty</th>
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</table>

Lect. Lab SCH CIP and Fund Code Admin. Unit Acad. Year FICE Code
0 3 0 0 0 3 1 4 2 7 0 1 0 0 6 0 9 6 5 1 4 - 1 5 0 0 3 6 3 2

Approval recommended by:

John Criscione [Signature] 1/16/14
Department Head or Program Chair (Type Name & Sign) Date

John Criscione [Signature] 1/16/14
Chair, College Review Committee Date

John Criscione [Signature] 1/16/14
Dean of College Date

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.
COURSE NUMBER: SYEN 644
COURSE NAME: DECISION MAKING UNDER UNCERTAINTY IN SYSTEMS ENGINEERING

Course Developers: Richard Malak, 325 MEOB, 979-845-1919, rmalak@tamu.edu
Don T. Phillips, 4018 Emerging Technologies Building: 458-2347; drdon@tamu.edu

Textbook: Advanced Risk Analysis in Enterprise Systems, Cesar Ariel Pinto; Paul R. Garvey, CRC Press.

Course Description:
Systems engineers are tasked with numerous decisions that are critical to the success of an engineering project. Rarely, if ever, are these decisions free of uncertainty and risk. This course reviews and builds upon the basic principles of probabilistic modeling and statistical analysis to provide systems engineers with an understanding of how to model and reason about uncertainty and risk in large-scale complex systems engineering projects. The course presents both heuristic decision methods and the mathematical foundations of rigorous decision theory and methods. Decision problem formulation is approached from a value-driven perspective and covers topics such as sequential decisions and deferred decisions as formalized using real options theory. Techniques presented in risk modeling and analysis include the risk co-relationship (RCR) index and functional dependency network analysis (FDNA).

Course Learning Objectives:
By the conclusion of this course, students should demonstrate knowledge and/or skill in the following areas: (1) how to model uncertainty, (2) how to reason about uncertain events, (3) how to compute with uncertainty, (4) how to formulate decision problems, and (5) how to reason about risk. The context for applying this knowledge will be large-scale, complex systems that are engineered to function in enterprise-wide environments.

Course Overview:
In this course, students will learn how to formulate and solve decision problems under uncertainty in the context of systems engineering projects. The material covered will include fundamental concepts, rigorous methods, and commonly-used heuristic techniques for decision making and uncertainty analysis. Although there will be a brief review of probability theory and engineering statistical analysis, it is assumed students already have some familiarity with these topics. Students will build on this foundation to learn heuristic and rigorous methods for uncertainty analysis, risk analysis, and decision making. Special attention will be paid to scenarios and issues common in systems engineering, such as updating beliefs based on new evidence (e.g., Bayesian updating), dealing with dependencies in highly networked and complex systems, sequential decisions, and value-driven decision formulations. Students will apply concepts and methods discussed in lecture through project-based assignments. Every student will complete a semester-long project of their choosing.
Topics to be covered

Week 1...... Course introduction; Review of Probability Theory
Week 2...... Review of Probability Theory (continued)
Week 3...... Review of Engineering Statistical Analysis: hypothesis testing & confidence intervals
Week 4...... Uncertainty propagation via Monte Carlo and quasi-Monte Carlo methods
Week 5...... Risk assessment and management (RCR, FDNA, etc.)
Week 6...... Heuristic methods for Decision Making (Pugh selection, AHP, Borda count, etc.)
Week 7...... Heuristic methods for Decision Making (continued); Foundations of Normative Decision Theory
Week 8...... Utility Theory; Formalizing decision preferences under uncertainty
Week 9...... Value-driven decision making
Week 10..... Sequential decisions & Markov Decision Problems (MDPs)
Week 11..... Stochastic behavior and modeling of complex systems
Week 12..... Introduction to Bayesian Inference & belief updating
Week 13..... Economics of Information and decisions to gather information,
Week 14..... Deferred decisions and real options theory

Evaluation

Students will be evaluated through a large semester-long project and smaller assignments.

Regular assignments:
- Due every 1-2 weeks
- Cumulatively 40% of grade

In-class Quizzes:
- Small-scale exams (less than a full class period; usually ~10 minutes long)
- Cumulatively 20% of grade

Project Assignments:
- Proposal, progress report, final report, and presentation
- Cumulatively 40% of grade

Final grades will be assigned as follows. There are no exceptions. GA is the earned grade average.

<table>
<thead>
<tr>
<th>Average Grade</th>
<th>Course Grade</th>
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<tr>
<td>100 ≥GA ≥ 90</td>
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<tr>
<td>90 &gt; GA ≥ 80</td>
<td>B</td>
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<tr>
<td>80 &gt; GA ≥ 70</td>
<td>C</td>
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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): College of Engineering

2. Course prefix, number and complete title of course: SYEN 645 Management of Engineering Systems

3. Catalog course description (not to exceed 50 words): Theory and practice of leadership and management in engineering organizations; focus is on both "hard" skills (systems engineering process, project management, planning, forecasting, financial analysis) and "soft" skills (leadership styles, motivation, teamwork, managing creative people, navigating informal networks); science and technology policy; economic implications of engineering and technology.

4. Prerequisite(s):

Cross-listed with: __________________________

Stacked with: __________________________

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

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)

   Master of Engineering in Systems Engineering

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

   MS or ME in Industrial Engineering, Civil Engineering, Electrical and Computer Engineering, Mechanical Engineering, Aerospace Engineering, Petroleum Engineering, and Computer Science and Engineering

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9. Prefix  Course #  Title (excluding punctuation)

<table>
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<th>Lect.</th>
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<th>Admin. Unit</th>
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</table>

Approval recommended by:

Department Head or Program Chair (Type Name & Sign)  Date: 1/16/14

Chair, College Review Committee  Date: 1/16/14

Dean of College  Date: 1/16/14

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 – 3/10
COURSE NUMBER: SYEN 645
COURSE NAME: MANAGEMENT OF ENGINEERING SYSTEMS
COURSE DEVELOPER: Mark S. Avnet, 4075 Emerging Technologies Building:
458-2339; avnet@tamu.edu

Textbooks:
  ISBN: 978-1-118-02227-6

Course Description:
This course is designed to teach students about the importance of people and organizations in
systems engineering and to provide them with the management skills needed to be effective in
their careers.

Course Learning Objectives:
The student will learn the key principles of leading and managing in systems engineering
organizations. The course will provide both the theoretical underpinnings and the practical tools
needed to effectively lead and manage technical people engaged in complex engineering efforts.
The content will focus on both the “hard” skills (systems engineering process and life cycle,
strategic planning, project selection, decision-making, network scheduling techniques, and
financial analysis) and the “soft” skills (effective leadership styles, psychological type and
motivation, managing creative people, negotiation, and navigating informal organizational
networks). The goal of the course is to equip students with the broad range of knowledge and
skills relevant to leading and managing in the complex organizations of the 21st century.

Course Overview:
This course will survey the theory and practical application of those management skills that are
most relevant to leaders and managers in modern engineering organizations. The course is
divided into three modules. The first module (Weeks 1-4) focuses on people and organizations.
It covers the functions and roles of managers, leadership styles, organizational structure and
culture, motivation of technical professionals, managing teams, creativity, and negotiation and
conflict management. The second module (Weeks 5-8) provides an overview of project
management, including strategic planning and technological forecasting, product life cycle and
product strategies, requests for proposals (RFPs) and contracts, decision-making approaches,
discounted cash flows and real options, work breakdown structure (WBS), Gantt and PERT
charts, project organization and control, and earned value analysis. The third module (Weeks 9-
13) focuses on system development and life cycle management, including the role of government
in research and development, history of system development programs, systems engineering
paradigms and frameworks, stakeholder analysis, requirements definition, systems engineering
life cycle and life cycle properties (also known as “-ilities”), design review, systems engineering
tools, configuration management, systems-of-systems, concurrent engineering (CE), estimation
methods, and financial analysis. In the last week of the course (Week 14), students will have the opportunity to present a project focused on their own careers to the rest of the class.

**Topics to be covered**
- Week 1........*Introduction to Management and Leadership in Engineering Systems*
- Week 2........*Formal Organization and Informal Networks*
- Week 3........*Organizational Culture, Motivation, and Psychological Type*
- Week 4........*Managing Engineering Teams, Negotiation, and Conflict Resolution*
- Week 5........*Strategic Planning and Technological Forecasting*
- Week 6........*Project Selection (RFPs, Contracts, Decision-Making, Real Options)*
- Week 7........*Project Organization, Planning, and Control*
- Week 8........*Cost and Schedule Evaluation*
- Week 9........*Technology Policy and History of Large-Scale System Development*
- Week 10........*Stakeholder Analysis and System Requirements*
- Week 11........*Systems Engineering Life Cycle and Life Cycle Properties*
- Week 12........*Tools/Approaches, Configuration Management, Systems-of-Systems*
- Week 13........*Resource Allocation, Estimation Methods, and Financial Analysis*
- Week 14........*Student Presentations and the Future of Engineering Systems*

**Case Studies**
Several short case studies will be assigned on a sporadic basis either as homework or as in-class exercises. These case studies are intended to assist you in applying the principles and ideas learned in the course.

**Project**
During the semester, each student will submit a report applying the concepts from the course to his/her own current or intended career. The emphasis of the project will be on applying engineering management principles to actual situations that you are likely to encounter during your career.

**Examinations**
The midterm and final exam will cover both the assigned readings and the material presented in class. The exams will consist primarily of problems on specific topics and short essay questions focused on synthesizing concepts covered throughout the semester.
Teams
This course will involve working in teams, primarily on the assigned case studies. The teams will be formed during the first class day of the second week after the roster is stable (no more add/drops). Teams will be formed by the instructor such that individuals may be working in concert with students that they do not know or do not know well. This policy is intended to prepare you for a basic reality of industry – that you will regularly work in teams not of your choosing. In general, the teams will consist of 4-5 individuals.

Evaluation
Midterm Exam: 30%
Final Exam: 30%
Project: 20%
Case Studies: 20%

Grading Scale
90% - 100% A
80% - 89% B
70% - 79% C
60% - 69% D
<60% F

The above scale represents the minimum range necessary to achieve each grade, but the actual grades will likely be based on a curve determined by class average and standard deviation.

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Plagiarism and “copying” will not be tolerated and will result in a grade of zero (0) for all students involved, regardless of active or passive participation. Students will be expected to have completed any HW assignments and be comfortable with the lecture material covered during the week. General HW assignments will not be graded. A departmental website directory will be maintained on the “cannibal” course drive of the ISEN website. This site will be used to archive all PPT class presentations, selected handout materials and other courseware. Cheating on any Quiz will result in a grade of zero and immediate referral to appropriate University officials.

CLASS ATTENDANCE AND MAKE-UP POLICY:
In a course of this nature, class attendance, participation, and the timely completion of assignments is critical. Specifically, class attendance is an individual student responsibility. Absences that permit making up a major examination or the timely fulfillment of a written assignment will be authorized by the instructor. The exception is University Calendar excused absences or sickness supported by a letter from an authorized physician. A University authorized excused absence is only a holiday posted to the University calendar. Students are referred to the current copy of University Regulations for comprehensive guidelines. It is the responsibility/obligation of the instructor to provide students with realistic due dates for
homework assignments and dates for examinations far enough in advance to permit student preparation. Major quizzes will be announced 7-10 days in advance. Class attendance might be kept by the instructor and can affect the final course grade in borderline cases. Absences will be authorized (and work permitted to be made up or handed in for evaluation) for reasons deemed sufficient by the instructor or by the University. Authorized absences generally cover the following:

- Illness/injury (Requires a doctor’s note)
- Participation in an activity appearing on the University authorized list
- Death or major illness in a student’s immediate family (must be documented)
- Participation in legal proceedings that require the student’s presence (Court service, etc.)
- Religious holy days that are on the University Calendar

**Job interview trips and social events are NOT allowable absences**

*Club or organizational trips are NOT allowable absences*

*Conferences are NOT allowable absences*

To qualify as an “authorized” absence, the student is totally responsible for providing written evidence to the instructor to substantiate the reason(s) for any absence. Please note: The **instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unauthorized absence.** Please note that plant trips and travel for purpose of obtaining future employment are not technically authorized absences. However, if the student plans on missing a class, he/she must notify the instructor at least one day in advance of the missed class period, detailing the nature of the absence. Students will usually be permitted a “reasonable” number of absences for this purpose at the discretion of the instructor. Communication is most effective via e-mail at drdon@tamu.edu. It will be the stated class policy that if a student misses a scheduled major examination or fails to meet an assigned project deadline due to an unauthorized absence, the student will receive a “0” for that specific examination/project/assignment. Excessive class absences will result in lowered instructor evaluation. Failure to participate in class discussions may result in lowered instructor evaluation and a lower grade. Any late graded assignments will not be accepted unless specifically approved by the lab instructor. For further information see: http://student-rules.tamu.edu/rule07

**Promptness:**
There is no excuse for habitual late arrival to class lectures. The class will start as soon as the instructor arrives and will finish when the instructor dismisses class, within the bounds of the formal class duration. The instructor will make every attempt to arrive on time and the same is expected of students. If a student arrives more than 15 minutes late, that student can be denied attendance that day. This is not simply being “picky or mean”. Late arrivals disrupt class, cause irritation and interruption, and builds poor character.
POP QUIZ POLICY:
Students are expected to attend class on any days that an “authorized” absence is not in effect. To strengthen class participation, the instructor reserves the right to adopt and use a “pop quiz” policy if necessary. Pop quizzes can be administered during the semester at any class time. These quizzes will cover basic material covered in the preceding class period or on the same day the quiz is given. Pop quizzes might be used to determine final grades in “borderline cases”, but will not be averaged into all other semester exercises to determine the final grade assignment.

Missed Test Policy (Major Test):
If a test is missed, you must have a written authorized excuse. If possible, please let me know before the test; otherwise, I must be notified within two days of your return to school. Make up exams will be given in accordance with University Rules (see Rule 7 at http://student-rules.tamu.edu).”

The American Disabilities Act (ADA):
The ADA is a federal antidiscrimination 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 the Department of Student Life, Service for Students with Disabilities in Cain Hall, Rm. B118, or call 845-1637. (For additional information visit http://disability.tamu.edu.)

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

It is the responsibility of students and instructors to help maintain scholastic integrity at the university by refusing to participate in or tolerate scholastic dishonesty. (For the Honor Council rules and procedures, see the web site http://aggiehonor.tamu.edu)
Course Changes
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
- Submit original form and attachments -

1. Request submitted by (Department or Program Name):
   Department of Ecosystem Science and Management

2. Course prefix, number and complete title of course:
   ESSM 601. Ecosystem Stewardship

3. Change requested
   a. Prerequisite(s): From: __________________________ To: __________________________
   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.

4. For informational purposes only, please indicate course number if this course will be stacked:

5. Complete current course title and current catalog course description:
   Ecosystem Stewardship. (2-0). Credit 2. Integrates ecological concepts of resilience, sustainability, transformation and vulnerability within a framework of cosystem stewardship to support human wellbeing in a rapidly changing world; emphasizes social-ecological systems. adaptive management, and valuation of ecosystem services as mechanisms to strengthen management and policy recommendations supporting ecosystem stewardship. Prerequisite: Graduate classification.

6. Complete proposed course title and proposed catalog course description (not to exceed 50 words):
   Ecosystem Stewardship. (3-0). Credit 3. Integrates ecological concepts of resilience, sustainability, transformation and vulnerability within a framework of cosystem stewardship to support human wellbeing in a rapidly changing world; emphasizes social-ecological systems. adaptive management, and valuation of ecosystem services as mechanisms to strengthen management and policy recommendations supporting ecosystem stewardship. Prerequisite: Graduate classification.

7. a. As currently in course inventory:
   Prefix  Course #  Title (excluding punctuation)
   ESSM 601  Ecosystem Stewardship
   Lect.  Lab  SCI  CP and Fund Code  Admin. Unit  LEC  Code  Level
   02 00 02 03 05 06 00 05 08 41 00 36 32 6
   b. Change to:
   Prefix  Course #  Title (excluding punctuation)
   ESSM 601  Ecosystem Stewardship
   Lect.  Lab  SCI  CP and Fund Code  Admin. Unit  Acad. Year  LEC  Code  Level
   03 00 03 03 05 06 00 05 08 41 14 15 00 36 32

Approval recommended by:
Dr. David Beers
Department Head or Program Chair (Type Name & Sign)  Date

Dr. David Reed
Chair, College Review Committee  Date

Dr. David Reed
Dean of College  Date

Dr. Mark Zoran
Chair, GC or UCC  Date

Submitted to Coordinating Board by:
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 – 02/11
6 December 2013

Dr. Baltensperger, Interim Head
Ecosystem Science and Management
Campus

Dear Dr. Baltensperger:

I am requesting that the graduate course ESSM 601 – Ecosystem Stewardship – be modified from two to three credit hours beginning fall semester 2014. This course has been taught for the second time in its modified format and the course has been well received by graduate students.

The course format is that of a reading - discussion format that requires students to prepare discussion questions from the reading material, lead course discussions, and engage in on-line summaries of weekly take home message with both the instructor and students in the class. Students are required to apply course concepts and frameworks to real life situations by developing two class projects.

The expanding subject matter content and course activities, both in and out of class, could be addressed more effectively if an additional contact hour was added.

Thank you for considering this request. Please contact me if additional information is required.

Sincerely,

David D. Briske
Professor and Research Faculty Fellow

225 Animal Industries Building
2138 TAMU
College Station, Texas 77843-2138

Tel. 979.845.5579
Fax. 979.845.6430
http://essrs.tamu.edu
ECOSYSTEM STEWARDSHIP
ESSM 601
FALL 2014

Objectives:
Complex and unprecedented changes within the earth system require that novel conceptual frameworks for sustainable development, alternative approaches of knowledge production, and innovative social institutions be developed and implemented to support effective stewardship. This course explores these emerging frameworks and their application within the context of resilience and social ecological systems. Adaptive management, social learning and flexible, decentralized institutions will be emphasized as key elements of effective stewardship. Post-normal science will be explored as a means of knowledge production to contend with conditions of high uncertainty, incomplete knowledge, and urgent, high-stakes decisions. The implementation and value of resilience-based stewardship will be investigated in diverse ecosystems including forests, rangelands, agro-ecosystems, oceans, and built environments.

Learning Outcomes:
Course completion will contribute to the following learning outcomes:
- Greater insight into the meaning and value of resilience, sustainability, and vulnerability frameworks.
- Describe the importance of social-ecological systems to continued provisioning of ecosystem services and human well-being.
- Appreciate the need for novel approaches and methodologies to contend with unprecedented changes in the Earth system.
- Understand the critical contributions of social institutions and governance systems to navigate change and promote stewardship.
- Learn how to apply and interpret resilience-based management in diverse ecological and social systems.
- Identify the skill sets and perspectives that are needed for successful application of ‘resilience thinking’.

Instructor:
Dr. David D. Briske
Ecosystem Science and Management
Animal Industries Building (ANIN), Room 328
Phone: 979-845-5581
Email: dbriske@tamu.edu

Meeting Time and Location:
Tuesdays and Thursdays, 2:20 – 3:35 pm; Animal Industries Building, Room 133

Text and Reading Assignments:

Prerequisites:
RENR 205 – Fundamentals of Ecology - or an equivalent ecological background.
Participation Rubric:
Written questions submitted for class discussion and verbal responses in-class are intended to address the central themes of the reading, stimulate group discussion, and promote greater understanding of the content. On-line discussions are to clarify uncertainty, provide insightful analysis or synthesis, and reinforce take home messages.

Questions and responses will be evaluated as follows:
1. No contribution; minimal knowledge of content or concept
2. Minimal contribution; aware of topic and content
3. Substantial contribution; contributes to engagement and learning
4. Major contribution; motivates class and promotes understanding

Make-Up Examinations and Late Assignments:
Make-up examinations and late assignments will be accepted only when students present a documented University-excused absence within 1 week of the scheduled exam or assignment (see TAMU Regulations).

Attendance:
Regular class attendance is expected and will be evaluated as a component of class participation. Students who consistently attend class attain the highest performance.

Americans with Disabilities Act
The Americans with Disabilities Act (ADA) provides comprehensive civil rights protection for persons with disabilities. Contact the Department of Student Life in Room B118 in Cain Hall (845-1637) for information.

Academic Integrity Statement
Upon admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code and the rules of the Honor System.
Curriculum Changes
Texas A&M University
Request for a Change in Curriculum

1. Request change for: □ Degree Program □ Minor □ Certificate

2. Request submitted by (Department or Program Name): Educational Psychology

3. Program Designation and Name
   (e.g., B.A. in History, Minor in History, Certificate in European Union): Graduate Certificate in Applied Behavior Analysis

4. Brief description of change: SPED 602: Ethics and Professional Conduct in Special Education and Applied Behavioral Analysis will become a required course in order to be awarded this certificate. This will increase the certificate from 15 credit hours to 18 credit hours.

5. Rationale for change: The Behavior Analyst Certification Board has increased its requirements to include an Ethics course for all students planning to get Behavior Analyst Certification as of the first examination given in 2015. As such, as students wishing to complete this certification will need the additional course on Ethics and Professional Conduct in order to sit for the national examination.

Use the checkboxes below to make sure that all information is included.

6. a. Proposed curriculum attached. ❑ Yes ❑ No
   b. Current catalog curriculum with handwritten edits attached. ❑ Yes ❑ No
   c. Current Howdy degree evaluation with handwritten edits attached. ❑ Yes ❑ No

Please make sure the attached proposed curriculum, catalog and Howdy degree evaluation match.

7. a. Will degree program hours change (increase/decrease) due to the proposed curriculum changes? ❑ Yes ❑ No
   b. If yes, degree program hours will change from: 15 to: 18
   c. If yes, is the Texas Higher Education Coordinating Board form attached? ❑ Yes ❑ No

   http://www.thech.state.tx.us/index.cfm?objectid=A0F9F7FA-9A92-4F11-2756AD3BBFF01D60

8. If proposed changes affect other unit(s), are letters of support attached? ❑ Yes ❑ No

IMPORTANT NOTE: Curriculum changes submitted through the approval process and fully approved by February (December-UCC/GC, January-Faculty Senate, February-President) will be effective in the next academic year. Changes requiring approval beyond the University should complete the internal approval process early in the fall semester whenever possible in order to ensure timely implementation.

Approval recommended by:

Victor Willson, Ph.D. ❑  George Cunningham, Ph.D.
Department Head or Program Chair (Type Name & Sign) Date  Dean of College Date

George Cunningham, Ph.D. ❑  Mark Zoran, Ph.D.
Chair, College Review Committee Date  Chair, GC or UCC Date

Questions regarding this form should be directed to Curricular Services at 845-8201 or sandra-williams@tamu.edu.
Curricular Services - 07/12
Texas Higher Education Coordinating Board
Request to Change Semester Credit Hours

**Directions:** An institution shall use this form to request a change in the number of semester credit hours (SCH) required for a degree program already on the institution's program inventory in accordance with Coordinating Board Rules, Chapter 5, Subchapter C, Section 5.55 – Revisions to Approved Programs.

**Options:**

1) Revisions that **reduce** the number of SCH require notification of change and affirmation that the reduction does not fall below the minimum requirements of the Southern Association of Colleges and Schools Commission on Colleges, program accreditors, and licensing bodies, if applicable.

2) Revisions that **increase** the number of SCH require detailed written documentation describing the compelling academic reason for the increase in the number of required hours.

**NOTE:** No request or notification is needed if revisions to the degree program curriculum do not result in a change in SCH.

Options 1 and 2 require the signature of the Provost or Chief Academic Officer.

Please submit *Request to Change Semester Credit Hour* via the Online Submission Portal: [https://www1.thecb.state.tx.us/apps/proposals/](https://www1.thecb.state.tx.us/apps/proposals/)

**Information:** Contact the Division of Workforce, Academic Affairs and Research at 512/427-6200.

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**Administrative Information**

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

2. **Program Name** – *Graduate Certificate in Applied Behavior Analysis*

3. **Program CIP Code:** 13.1013.00 04

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

   Name: Dr. Jennifer Ganz
   Title: Associate Professor
   E-mail: jeniganz@tamu.edu
   Phone: 979-862-2823
Notification/Request for Change in Semester Credit Hours (SCH):

Current SCH: __________ 15 __________

Proposed SCH: __________ 18 __________

Implementation Date: __________ January 1, 2014 __________

Complete Option 1 or 2 as appropriate

Option 1: Reduction in Semester Credit Hours

Is the change in the number of SCH compatible with the requirements of accreditation for the program?

a. Southern Association of Colleges and Schools Commission on Colleges
   □ YES □ NO

b. Program Accreditor(s)
   Name of Program Accreditor: __________________________
   □ YES □ NO □ NA

c. Licensing Body(ies)
   Name of Licensing Body(ies): __________________________
   □ YES □ NO □ NA

Option 2: Increase in Semester Credit Hours

Provide detailed documentation, such as changes in accrediting agency or licensing body requirements, workforce needs, or academic professional standards and needs, describing a compelling reason for the change in the number of SCH:

The Behavior Analyst Certification Board has increased its requirements to include an Ethics course for all students planning to get Behavior Analyst Certification as of the first examination given in 2015. As such, as students wishing to complete this certification will need the additional course on Ethics and Professional Conduct in order to sit for the national examination

Signature of Compliance

I hereby certify that all of the above changes have been approved in accordance with the procedures outlined in Coordinating Board Rules, Chapter 5, Subchapter C, Section 5.55.
<table>
<thead>
<tr>
<th>Provost/Chief Academic Officer</th>
<th>Date</th>
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</table>
# Special Education Online Master’s Degree
## Recommended Program of Study

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 1</td>
<td>SEFB 618: Applied Behavior Management**</td>
</tr>
<tr>
<td></td>
<td>SPED 630: Reading</td>
</tr>
<tr>
<td>Spring 1</td>
<td>SPED 609: Autism**</td>
</tr>
<tr>
<td></td>
<td>SPED 617: Adolescent Literacy</td>
</tr>
<tr>
<td>Summer 1</td>
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</tr>
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<td></td>
<td>SPED 628: Consultation in Special Education</td>
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<td></td>
<td>SPED 610: Special Education and the Family</td>
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<tr>
<td></td>
<td>SPED 601: Assessment in School Settings</td>
</tr>
<tr>
<td>Fall 2</td>
<td>SPED 699: Advanced Applied Behavior Analysis**</td>
</tr>
<tr>
<td></td>
<td>SPED 632: Transition from School to Work</td>
</tr>
<tr>
<td>Spring 2</td>
<td>EPSY 630: Single Case Research**</td>
</tr>
<tr>
<td></td>
<td>SPED 620: Bilingual Special Education</td>
</tr>
<tr>
<td>Summer 2</td>
<td>SPED 602: Ethics and Professional Conduct in Special Education and Applied Behavior Analysis**</td>
</tr>
</tbody>
</table>

### Program of Study Notes:
- Each course is 3 credits. The entire Master’s degree is 36 credits and it can be completed in five semesters.
- Courses identified with a double asterisk (**) are associated with the BCBA option. Students participating in the BCBA option only (not the entire Master’s degree) would take these five courses.
- SPED 602 is NOT a requirement to complete the Master’s in Special Education. This course is a requirement ONLY for those students who will be seeking national BCBA certification through the BACB.
### Special Education Online Master's Degree

#### Recommended Program of Study

**OLD VERSION**

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#### Program of Study Notes:

- Each course is 3 credits. The entire Master's degree is 36 credits and it can be completed in five semesters.
- Course syllabi are online for advance understanding of meeting time expectations. Courses during Fall and Spring semesters will be offered from 4:30-7:30. Although all courses will be delivered fully via distance many courses will expect students to be online participating in course activities during the 4:30-7:30 time slot for at least some class sessions. *Summer course times will not be evening time slots but course offering days and times should also be held open for occasional synchronous meetings.*
- Courses identified with a double asterisk (**) are associated with the BCBA option. Students participating in the BCBA option only (not the entire Master's degree) would take these five courses.
- SPED 602 is NOT a requirement to complete the Master's in Special Education. This course is a requirement ONLY for those students who will be seeking national BCBA certification through the BACB.
Special Consideration Items
Texas Higher Education Coordinating Board
New Doctoral Degree Proposal

Directions: While completing this form, institutions should refer to Texas Administrative Code (TAC) 5.46 relating to Criteria for New Doctoral Programs. 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, if applicable, (3) a member of the Board of Regents (or designee), certifying that criteria have been met for Coordinating Board staff-level approval. Additional directions are available in the Guidelines for Institutions Submitting Proposals for New Doctoral Programs document found on the Coordinating Board web site. (www.thecb.state.tx.us/newprograms) certificates

Note: If an institution does not have Preliminary Authority for the proposed doctoral program, it must first submit a separate request for Preliminary Authority. That request shall address criteria set in TAC Section 5.24 (b).

Information: Contact the Division of Workforce, Academic Affairs and Research at (512) 427-6200.

Administrative Information

1. Institution: Texas A&M University Baylor College of Dentistry (TAMBCD)

2. Program Name – Show how the program would appear on the Coordinating Board’s program inventory [e.g., Doctor of Philosophy (Ph.D.) in Electrical Engineering].

Doctor of Philosophy (Ph.D.) in Oral Biology

3. Proposed CIP Code – Include justification if the program title is not already included among the CIP classifications.

51.0503

4. Program Description – Describe the program and the educational objectives.

The College was founded in 1905 and became part of Baylor University in 1918 and was named Baylor College of Dentistry (BCD). Academic graduate education at Baylor College of Dentistry was initiated in the 1960’s with oversight from the Graduate School of Baylor University. At that time, M.S. and Ph.D. degrees were awarded through the Departments Anatomy, Biochemistry, Microbiology, Pharmacology and Physiology. The Ph.D. program was restructured in 1993 with the consolidation of all the basic science departments into a single Department of Biomedical Sciences (CIP 51.1399.50) with focus areas in Craniofacial Biology and Stomatology. The M.S. programs in Anatomy, Biochemistry, Microbiology and Pharmacology/Physiology also were discontinued and combined into the Biomedical Sciences Program. The College also continued to offer an M.S. Degree in Oral Biology (CIP 51.2805.00 which was subsequently changed to CIP 51.0503.00) primarily for postgraduate (post-DDS) students in its clinical specialty programs.

BCD became a free-standing member of the Texas A&M University System (TAMUS) in 1996, and in 1998 became a founding member of the Texas A&M Health Science Center (TAMHSC). The Biomedical Sciences Program then fell under the administrative authority of the TAMHSC Graduate
School of Biomedical Sciences (GSBS), which also provided administrative oversight for the Medical Sciences Program at the College of Medicine (also CIP 26.0102.00). In 2006 the programs at Baylor College of Dentistry and the College of Medicine were combined into a single interdisciplinary Graduate Program in Biomedical Sciences under their common CIP number. Although under the same program heading, both offered different areas of concentration for research and graduate training. Local day-to-day operations of the two components of the Biomedical Sciences Program were designated by the TAMHSC Vice President for Research & Graduate Programs to the Associate Deans for Research and Graduate Studies at TAMBCD and the College of Medicine.

In July 2013, TAMHSC was merged administratively with Texas A&M University (TAMU). The TAMHSC Office of Graduate Programs continues to provide a coordinating role for all academic graduate programs in the Health Science Center.

We are now seeking to have the Ph.D. program operating at TAMBCD placed under the Oral Biology CIP 51.0503.00 with oversight by TAMBCD, coordination by the TAMHSC Office of Graduate Programs, and ultimate authority by the TAMU Office of Graduate and Professional Studies. This action would eliminate the M.S. program in Biomedical Sciences (26.0102.00), and new students would be awarded their M.S. degrees through our currently approved M.S. program in Oral Biology (CIP 51.0503.00).

As noted above, oversight of the College’s Ph.D. programs in the early years was provided by Baylor University. The College then supervised its own Ph.D. program and still later, the GSBS assumed this responsibility after formation of the TAMHSC. However, in practice, the day-to-day oversight of the Ph.D. program since the 1960’s has always been conducted through the TAMBCD Office of the Associate Dean for Research and Graduate Studies. The current Ph.D. program receives local oversight from a TAMBCD Program Director and a TAMBCD programmatic Graduate Committee located in Dallas, which report to the Associate Dean for Research and Graduate Studies and the TAMHSC.

All graduate coursework required of the Ph.D. students is taught by the TAMBCD graduate faculty in Dallas. However, through a memorandum of understanding between the Regents of TAMUS and of the University of Texas, Ph.D. students may take courses at the University of Texas campuses in Arlington and Dallas, and at the UT-Southwestern Medical Center.

The College’s much larger M.S. program in Oral Biology (Code 51.0503), which is exclusively available only for residents in the seven clinical post-graduate clinical programs, has been administered for over 50 years solely through the Office of the TAMBCD Associate Dean for Research and Graduate Studies, i.e., the M.S. program has not been administered by TAMHSC, but rather by the College. Each clinical program has its own Program Director and programmatic graduate committee. The nine clinical residency programs (two of which do not offer the M.S. degree) and the current Ph.D. program are overseen by the TAMBCD Graduate Education Council, which is made up of all Program Directors and chaired by the Associate Dean for Research and Graduate Studies. This committee also includes the Associate Dean for Student Affairs.

The expenses for the Ph.D. and M.S. programs throughout the years have been the sole responsibility of TAMBCD through the budgetary process of TAMHSC.

There will be a seamless exchange of authority and responsibility when initial oversight for the Ph.D.
program is assumed the College. This is the current model for many of the College-based Ph.D. programs at TAMU.

The mission of the current Ph.D. program at TAMBCD is to maintain and continually improve an environment and program of instruction in which our students develop competency in modern oral biology science for application to oral health research questions. The program also provides for the selection, guidance and support of faculty members associated with the program. In support of the mission, the program strives to integrate basic and translational research education leading to a M.S. and/or Ph.D. for dental clinician-scientists and oral biology-oriented basic science scientists. Our ultimate goal is to train future leaders in dental research and education. The outcomes of our previous graduates support our goals of developing an outstanding oral biology program in both basic and clinical research that educates graduate students to contribute to the discovery of fundamental knowledge and its applications for improving human oral health in the United States and around the world.

To achieve our goals, the current Ph.D. program at TAMBCD provides an educational experience that emphasizes the development of a strong basic science background. We give our students a thorough and comprehensive knowledge of oral biology and training in research methods and education. Our graduates have the ability to critically evaluate research problems, as well as to maintain the inquiring attitude necessary to pursue the advancement and innovation in research related to the practice and teaching of specialized oral health care. The final basis for granting the degree is the candidate’s mastery of the subject matter of a broad field of study and the demonstrated ability to do independent research. In addition, the candidate must acquire the ability to express thoughts clearly in written publications and oral presentations.

As noted above, the current Ph.D. program at TAMBCD is devoted to expanding the knowledge of oral biology and training its next generation of researchers and educators. The CIP Code we are seeking is 51.0503, which is the same CIP Code as our current M.S. program. This Code is defined as follows: “A program that focuses on the scientific study of the growth, development, diseases, healing properties, and neurologic components of the oral cavity, related tissues and organs, and associated craniofacial pain, humoral aspects of disease, etiology and histology of caries, plaque, wound healing, oral disease epidemiology, oral manifestations of systemic disease, lesions, normal and pathological physiology, and related molecular and physical studies.” All of the above definitions are dental-oriented, and they totally align with our current program. In contrast, the CIP that the College’s Ph.D. program is currently associated with through the TAMHSC is Code 26.0102, which has the following definition: “A general program that focuses on the integrative scientific study of biological issues related to health and medicine, or a program in one or more of the biomedical sciences that is undifferentiated as to title. Includes instruction in any basic medical sciences at the research level; biological science research in biomedical faculties; and general studies encompassing a variety of the biomedical sciences.” This description is more medically oriented. If one looks at the College’s research portfolio and graduate courses taught, our focus parallels CIP 51.0503 rather than CIP 26.0102.

In addition to the specific course work for each of our current focus areas (Craniofacial Development and Genetics; Mineralized Tissue Biology; Craniofacial Pain; Bioengineering and Regeneration; and Translational and Clinical Research), the Ph.D. graduate students can take advantage of a broad array of resources at TAMBCD. Training occurs in a multidisciplinary training environment that provides: (i) broad knowledge in the biomedical sciences; (ii) orientation to dental and craniofacial
research; (iii) use of state-of-the-art techniques and equipment; (iv) training in data acquisition and statistical interpretation; (v) interactions with faculty co-mentors, visiting scientists, and other trainees; (vi) experience in teamwork in an era where research is conducted by groups; (vii) ongoing training in ethics; (viii) ongoing training in compliance; (ix) teaching skills; (x) information about how academic and industry work administratively; (xi) skills in scientific reviewing, publication, and grant production; (xii) participation in scientific forums, e.g., regional, national and international meetings; and (xiii) focused guidance for career development as part of our ongoing graduate student mentoring program. Each student has a dedicated research advisory committee that meets regularly to direct the student’s research project. Requirements for the degree are the completion of 96 credit hours, successfully passing two preliminary examinations (cognates), defense of the NIH grant-format dissertation proposal (written and oral exercises), and producing and defending a dissertation based on a research project that contributed new knowledge.

The present Ph.D. program was intended to be offered as an individual degree to predoctoral candidates and to DDS graduates with or without specialty training. The emphasis of the program over the years has been primarily directed to candidates who have obtained a dental degree and are more settled and focused in their academic plans. Nevertheless, the program still values students who seek an integrated dental and graduate research program. Thus, a student already accepted into the D.D.S. program may also apply to the Ph.D. program for concurrent study. The primary objective of this combined program has been to create a flagship Oral Biology Program combining the best in scientific and clinical dental research. Our student scholars have received funding from a variety of sources including a College T32 grant and F30 grants, as well as from the Baylor Oral Health Foundation and the College. In 1998, TAMBCD was the first dental college in the United States to be awarded a F30 grant by the National Institute of Dental and Craniofacial Research, which funded a combined D.D.S./Ph.D. Fellowship. The individual receiving that award is now a tenured Associate Professor and a leader in her field.

Our Ph.D. graduates are trained to maintain funded oral health research programs and instilled with the skills to serve as mentors and educators, thus filling the critical need for a new generation of dental educators. In the 2013 U.S. News and World Report of Biomedical Sciences Programs, the College’s Ph.D. program received the highest ranking of any similar program in a dental school.

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 Biomedical Sciences

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

We currently have students in all years of study with a Fall start date.
7. **Contact Person** – Provide contact information for the person who can answer specific questions about the program.

Name: Kathy Svoboda, Ph.D.
Title: Regents Professor; Director, Graduate Program in Biomedical Sciences
E-mail: ksvoboda@bcd.tamhsc.edu
Phone: 214-828-8487

or

Name: Larry L. Bellinger, Ph.D.
Title: Regents Professor, Associate Dean for Research and Graduate Studies
E-mail: lbellinger@bcd.tamhsc.edu
Phone: 214-828-8322

Program Information

I. Need

All proposals must include this section. If preliminary authority for the program was granted within the last four years, include updated information.

A. Job Market Need

Provide short- and long-term evidence of the need for graduates in the Texas and US job markets. Common sources for workforce need and workforce projections include the Bureau of Labor Statistics, the Texas Workforce Commission, and professional associations. If the program is designed to address particular regional or state needs other than workforce demands, please identify those needs.

This Ph.D. program in its present form at the College with a total emphasis on craniofacial biology has been in existence since 1993 and has graduated 38 Ph.D. students. All graduates are employed or are receiving additional clinical training. The 2011 National Science Council report “Research Training in the Biomedical, Behavioral and Clinical Research Sciences” section (Chapter 6) on Oral Health stresses the need for the training of more oral health researchers based in dental schools. This need for a continuous pipeline of oral health researchers is also part of the National Institute for Dental and Craniofacial Research Strategic Plan for 2009-2013. The National Institutes of Health 2012 Biomedical Research Workforce Working Group Report also showed that the unemployment of biomedical Ph.D. researchers is exceptionally low and that there is a need to produce additional well-trained researchers. According to the United States Occupational Outlook Handbook, 2012-2013 edition, medical scientists held about 100,000 jobs with employment
expected to increase by 36% from 2012-2020. Part of the highly favorable employment outcomes of our former graduates happened because they fit into a specialized niche as oral health researchers and educators. In the past 10 years, 12 new dental schools have opened or will soon begin operation. In current dental schools, the number of faculty positions open at any one time amounts to approximately 250-350. Our focus on training Ph.D. candidates with a prior or concurrently received dental degree makes our graduates highly sought-after by dental schools.

B. Existing Programs

*Identify existing programs in the state and nation, provide the number of graduates from these programs in the last five years, and explain how the proposed program would not unnecessarily duplicate them. Provide evidence that existing programs in the state could not accommodate additional students and/or are not meeting current workforce needs.*

The College's current Ph.D. program in its present form was instituted in 1993 as a Craniofacial Biology Ph.D. Program and was later incorporated into a Biomedical Science Program with the College's merger into TAMHSC in 1996. Our program does not duplicate other existing programs because it is one of the few Ph.D. programs in the United States devoted to the study of oral biology. Of the 64 dental schools in the United States, fewer than half have a Ph.D. program and, of those, only 15 have received T32 funding from the National Institute of Dental and Craniofacial Research. TAMBCD is one of those 15 schools receiving a training grant to graduate the next generation of D.D.S./Ph.D. and Ph.D. trainees devoted to the exploration of oral biology, who will become future dental educators. Since our current program has been in existence in the State of Texas for 20 years, it does not duplicate, but rather adds to the programs in Houston and San Antonio that provide the state with dental researchers and educators.

C. Student Demand

*Provide short- and long-term evidence of student demand for the program. Types of data commonly used include increased enrollment in related and feeder programs at the institution, high enrollment in similar programs at other institutions, qualified applicants rejected at similar programs in the state or nation, and student surveys.*

Oral health research is an important area of study because it addresses large gaps in our knowledge. In Texas this type of research is vital because we have large populations of both the very young and the elderly. The necessity for a better understanding of craniofacial biology in order to meet the needs of Texans makes the TAMHSC Ph.D. program very worthwhile. Our emphasis on enrolling qualified applicants interested in oral health research who also have prior dental degrees or are seeking congruent D.D.S./Ph.D. degrees somewhat restricts the size of our program. However, our current long-running Ph.D. program is very vibrant and has produced outstanding graduates. Our students have presented award-winning research at national dental research meetings. This excellence has also been recognized by other dental schools seeking our graduates. In the 2013 U.S. News and World Report of Biomedical Sciences Programs, the College's Ph.D. program received the highest ranking of any similar program in a dental school. The excellence of the Ph.D. program at TAMHSC has placed us in a position of attracting more qualified applicants than the program can accommodate.
D. Student Recruitment
Describe general recruitment efforts, including plans to recruit and retain students from underrepresented groups.

TAMU and TAMBCD have a strong and lasting commitment to educating and training disadvantaged students, as evidenced by past educational and training initiatives, achievements, and performance in assisting these students. In particular, the TAMBCD strategic plan emphasizes the need to recruit, enroll, and retain students who will serve disadvantaged communities and populations. This commitment to diversity is expressed through the identification, recruitment, selection, matriculation, and graduation of qualified health professions students from various racial, ethnic, and/or disadvantaged backgrounds. In 1992, TAMBCD exhibited leadership and foresight by convening a minority recruitment task force to initiate programs that would improve access for underrepresented minority students. Over the past 15 years, TAMBCD has aggressively recruited underrepresented minority students with internal and external funding, and the Health Careers Opportunity Program.

Overall, TAMBCD has been highly successful at recruiting individuals from underrepresented groups, especially Hispanics, and has also improved significantly in recruiting African-Americans. This record is demonstrated by the fact that TAMBCD has one of the highest minority student enrollments for 2013 among all U.S. dental schools without a historically underrepresented minority focus.

Once in dental school, all students and especially underrepresented minorities are encouraged to take part in the TAMBCD Pre-doctoral Research Fellow Program. Approximately 30-35% of the incoming class participates in this research program, which is so successful that almost all the students involved present their findings at national meetings. At the graduate level at the 64 dental schools in the United States, fewer than half have a Ph.D. program and of those, only 15 have received T32 funding from the National Institute of Dental and Craniofacial Research. TAMBCD is one of those 15 schools receiving a training grant to educate the next generation of D.D.S./Ph.D. and Ph.D. trainees devoted to the exploration of oral biology and to becoming future dental educators. This grant and the reputation created over the past years that TAMBCD offers a well-mentored and nationally recognized Ph.D. program are extremely helpful with recruitment. In addition, TAMBCD also received a National Institute of Dental and Craniofacial Research R25 grant. One of the grant's initiatives is the training of a group of Student Scholars over their four years of dental school to pursue a career in academics and become the next generation of dental researchers and educators. The Office of the Associate Dean for Research and Graduate Studies also offers four teaching assistantships that are exclusively used for the Ph.D. program. These recruitment efforts have provided the program with a pipeline of qualified applicants for the combined D.D.S./Ph.D. program. These efforts have also increased the College's visibility because of our programs that strive to meet the needs of underrepresented minorities.

Recruitment efforts are coordinated in part through the Office of the Executive Director for Recruitment and Admissions. During state-wide visits while recruiting for the dental
school, the Director also disseminates information about the Ph.D program. In addition, recruitment efforts are made at national dental meetings such as Experimental Biology by graduate faculty involved in the Ph.D. program. Since many students use the web to search out information on graduate programs the College continuously updates its graduate pages as a recruitment tool.

E. Enrollment Projections
Use this table to show the estimated cumulative headcount and full-time student equivalent (FTSE) enrollment for the first five years of the program. Include summer enrollments, if relevant, in the same year as fall enrollments. Provide explanations of how headcounts, FTSE numbers, and projections for under-represented students were determined.

<table>
<thead>
<tr>
<th>Year 1*</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Students</td>
<td>3-4</td>
<td>3-4</td>
<td>3-4</td>
<td>3-4</td>
</tr>
<tr>
<td>African-American</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cumulative Headcount</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>FTSE</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attrition</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*This is an ongoing Ph.D. program that in 2013 has 15 students enrolled. Two students were awarded the Ph.D. at graduation in May, and another candidate is scheduled for final completion in December 2013. The program strives to enroll three to four new Ph.D. students each year.

II. Academics

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

This discipline does not have a national accrediting body, but TAMBCD and TAMHSC are accredited by the Southern Association of Colleges and Schools.

B. Admissions Standards
Describe the institution's general graduate admissions standards and the program-specific admissions standards for applicants of the program. If relevant, include policies for accepting students transferring from other graduate programs.

The general admission requirements are found in the TAMU Graduate Catalog. The identification, recruitment, retention, and successful training of high-quality candidates are central to the mission. Students seeking a Ph.D. apply through Apply Texas. The TAMBCD
program has had a separate listing within the TAMHSC, providing easy online access for applicants to our Ph.D. program.

Application requirements for those students interested in entering the program include:
- Official transcripts for a baccalaureate, graduate, or clinical degree from an accredited institution.
- A competitive grade point average (GPA) verified by official transcripts.
- International transcripts must be evaluated by an educational credentials evaluation service in the United States that is recognized by TAMU.
- Official Graduate Record Exam (GRE) scores submitted at the time of application.
- At least three letters of reference.

All international applicants must submit a transcript analysis that provides the English translation of their official transcripts as well as a course-by-course listing of U.S.A. grade point equivalencies and diploma/degree statements. International applicants whose native language is not English must fulfill an English proficiency requirement, e.g., acceptable scores on the "Test of English as a Foreign Language" (TOEFL).

The TAMBCD Ph.D. Graduate Committee reviews all applications and accepts 3-4 applicants per year. The selection criteria are based on GRE scores, undergraduate GPA, previous research experience, recommendation letters, and desire to perform research in one of the research areas at TAMBCD. Entering students may request advanced standing if they have completed some graduate work at another institution. The requirements to receive advanced standing are set forth in the TAMU Graduate Education Catalog.

The minimum requirements for the Ph.D. degree in the Graduate Program in Biomedical Sciences include the successful completion of: 1) basic core courses or equivalents, 2) additional elective courses, 3) preliminary examinations, and 4) a dissertation. Students must maintain a grade-point average of 3.0 on a scale of 0 to 4.0. A minimum of 96 semester credit-hours plus dissertation are required for graduation.

C. Degree Requirements
Comment on the similarities and differences between the proposed program and peer programs across the country. Use this table to show the degree requirements of the program. If requirements vary for students entering with a master's degree or comparable qualifications, please explain. (Modify the table as needed. If necessary, replicate the table to show more than one option.)

The program we currently offer is similar to many of the national programs in Oral Biology, including, for example, the Oral Biology Program at the University of California at Los Angeles (UCLA). http://www.dentistry.ucla.edu/admissions/masters-phd/phd. The UCLA program admits 2-5 students a year, while the TAMBCD program aims at admitting 3-4 students per year. The foci of both programs are to train the next generation of leaders in academic dentistry and oral health research. Both programs have required core course and electives courses that are taken during the first two years of study. There is overlap in the core course requirements in both programs, i.e., Biostatistics; Ethics; Molecular and Cellular Biology; Oral Biology Seminar; and Research Method and Design. Then in each program, depending
on the research emphasis of the student, prescribed electives are taken. Both programs require the students to take rotations during the first year in various laboratories, as well as to pass examinations (in our case, both written and oral) to advance to candidacy. In both programs, and most importantly in the Ph.D. program, the students must carry out high-quality original research projects, be able to analyze their findings, have good writing skills to convey their findings, defend their dissertation before graduating and have publications accepted in high-quality journals. Both programs, depending on the nature of the research, can take 4-6 years to complete the Ph.D. degree.

D. Curriculum

1. Describe the proposed educational objectives of the program. If the program has a unique focus or niche, describe it in relationship to peer programs.

The mission of the current Ph.D. program at TAMBCD is to maintain and continually improve an environment and program of instruction in which our students develop competency in modern oral biology science for application to oral health research questions. The program also provides for the selection, guidance and support of faculty members associated with the program. In support of the mission, the program strives to integrate basic and translational research education leading to a M.S. and/or Ph.D. for dental clinician-scientists and oral biology-oriented basic science scientists. Our ultimate goal is to train future leaders in dental research and education. The outcomes of our previous graduates support our goals of developing an outstanding oral biology program in both basic and clinical research that educates graduate students to contribute to the discovery of fundamental knowledge and its applications for improving human oral health in the United States and around the world.

To achieve our goals, the current Ph.D. program at TAMBCD provides an educational experience that emphasizes the development of a strong basic science background. We give our students a thorough and comprehensive knowledge of oral biology and training in research methods and education. Our graduates have the ability to critically evaluate research problems, as well as to maintain the inquiring attitude necessary to pursue the advancement and innovation in research related to the practice and teaching of specialized oral health care. The final basis for granting the degree is the candidate's mastery of the subject matter of a broad field of study and the demonstrated ability to do independent research. In addition, the candidate must acquire the ability to express thoughts clearly in written publications and oral presentations.

As noted above, the current Ph.D. program at TAMBCD is devoted to expanding the knowledge of oral biology and training its next generation of researchers and educators. The CIP Code we are seeking is 51.0503, which is the same CIP Code as our current M.S. program. This Code is defined as follows: “A program that focuses on the scientific study of the growth, development, diseases, healing properties, and neurological components of the oral cavity, related tissues and organs, and associated craniofacial pain, humoral aspects of disease, etiology and histology of caries, plaque, wound healing, oral disease epidemiology, oral manifestations of systemic disease, lesions, normal and pathological physiology, and related molecular and physical studies.” All of the above definitions are dental-oriented, and they totally align with our current program. In contrast, the CIP that the College's Ph.D.
program is currently associated with through the TAMHSC is Code 26.0102, which has the following definition: "A general program that focuses on the integrative scientific study of biological issues related to health and medicine, or a program in one or more of the biomedical sciences that is undifferentiated as to title. Includes instruction in any basic medical sciences at the research level; biological science research in biomedical faculties; and general studies encompassing a variety of the biomedical sciences." This description is more medically oriented. If one looks at the College’s research portfolio and graduate courses taught, our focus parallels CIP 51.0503 rather than CIP 26.0102.

2. Use these tables to identify the required courses and prescribed electives of the program. Note with an asterisk (*) courses that would be added if the program is approved. (Add and delete rows as needed. If applicable, replicate the tables for different tracks/options.)

It should be noted that all of the courses listed below have previously been approved by Graduate Council and have been taught for a number of years as the current Ph.D. program has been in existence and ongoing since 1993.

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Required Courses</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIMS 5190</td>
<td>Seminar: Current Issues in Biomedical Science</td>
<td>1</td>
</tr>
<tr>
<td>BIMS 5221</td>
<td>Research Design and Methodology</td>
<td>2</td>
</tr>
<tr>
<td>BIMS 5222</td>
<td>Applied Biostatistics</td>
<td>2</td>
</tr>
<tr>
<td>BIMS 5V40</td>
<td>Cellular and Molecular Biology of Oral and Craniofacial Tissues I</td>
<td>2</td>
</tr>
<tr>
<td>BIMS 5V42</td>
<td>Cellular and Molecular Biology of Oral and Craniofacial Tissues II</td>
<td>1</td>
</tr>
<tr>
<td>EDHP 5225</td>
<td>Teaching Skills for Health Professions Educators</td>
<td>2</td>
</tr>
<tr>
<td>SGS1 601</td>
<td>Responsible Conduct in Biomedical Research</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prefix and Number</th>
<th>Prescribed Elective Courses</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIMS 5208/5210</td>
<td>Microbiology/Microbiology Laboratory</td>
<td>3/1</td>
</tr>
<tr>
<td>BIMS 5251</td>
<td>Immunology</td>
<td>2</td>
</tr>
<tr>
<td>BMIS 5301</td>
<td>Neuroscience</td>
<td>2</td>
</tr>
<tr>
<td>Prefix and Number</td>
<td>Free Elective Courses</td>
<td>SCH</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>BIMS 5V04</td>
<td>Head and Neck Anatomy</td>
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<tr>
<td>BIMS 5V69</td>
<td>Growth and Mechanisms of Development</td>
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<tr>
<td>BIMS 5V73</td>
<td>Advanced Human Craniofacial Development and Craniofacial Anomalies</td>
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<tr>
<td>BIMS 5V75</td>
<td>Physical Growth and Maturation</td>
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<tr>
<td>BIMS 5V78</td>
<td>Teaching Practicum in Gross Anatomy</td>
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<tr>
<td>BIMS 5V80</td>
<td>Introduction to Evidence-based Dentistry and Clinical Research</td>
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<tr>
<td>BIMS 5V81</td>
<td>Seminar: Current Issues in Bone and Mineralized Tissue Biology</td>
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</tr>
<tr>
<td>BIMS 5V91/92</td>
<td>Special Topics in Biomedical Sciences</td>
<td></td>
</tr>
<tr>
<td>BIMS 5V93/94/95</td>
<td>Directed Readings</td>
<td></td>
</tr>
<tr>
<td>BIMS 5V96/97</td>
<td>Research and Special Problems</td>
<td></td>
</tr>
<tr>
<td>BIMS 5V99</td>
<td>Preparation of Dissertation Defense</td>
<td></td>
</tr>
<tr>
<td>BIMS 5127</td>
<td>Microscopy, Imaging, and Associated Techniques</td>
<td></td>
</tr>
<tr>
<td>BIMS 5128</td>
<td>Nanobiomaterials and Regenerative Medicine</td>
<td></td>
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<tr>
<td>BIMS 5205</td>
<td>Oral Histology</td>
<td></td>
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<tr>
<td>BIMS 5214</td>
<td>Clinical Pharmacology</td>
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<tr>
<td>BIMS 5224</td>
<td>Teaching Practicum in Applied Biostatistics</td>
<td></td>
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<tr>
<td>BIMS 5224</td>
<td>Advanced Biostatistics</td>
<td></td>
</tr>
<tr>
<td>BIMS 5244</td>
<td>Advanced Biology of Mineralized Tissues</td>
<td></td>
</tr>
<tr>
<td>BIMS 5263</td>
<td>Sensory Neurobiology and Pain</td>
<td></td>
</tr>
<tr>
<td>BIMS 5312</td>
<td>Applied Medical Physiology</td>
<td></td>
</tr>
</tbody>
</table>

BIMS 5307 Biochemistry Cellular and Molecular Biology 3
BIMS 5402 General Histology 3
BIMS 5603 Gross Anatomy 4
BIMS 5611 Mammalian Physiology 4
### E. Candidacy/Dissertation

*If the program requires a dissertation, describe the process leading to candidacy and completion of the dissertation.*

**Initial Advisors**
After receiving admission to the graduate program and prior to enrolling for coursework, the student must consult with the Ph.D. Graduate Program Director, who will serve as the student’s Initial advisor. The Graduate Program Director will help the student select coursework and suggests other faculty with whom the student may consult in order to secure a permanent advisor (mentor).

Each student is required to meet with their advisor/mentor and the Graduate Program Director prior to the beginning of each semester to discuss the coursework for the upcoming semester and progress toward the degree. The Ph.D. Graduate Program Committee will review the progress of each student on a regular basis.

In some cases, an advisory committee may be appointed for the student to facilitate construction of the student’s degree plan. The committee will be appointed by the Graduate Program Committee and will most often consist of the student’s proposed mentor, the Graduate Program Director, and one or two other members. Advisory committees will be approved by the Graduate Program Committee and will typically be used when: 1) the student proposes a mentor who is an adjunct faculty member, a part-time faculty member, or a faculty member who does not have much familiarity with the graduate program, or 2) the student’s proposed program is interdisciplinary and could benefit from the input of multiple faculty advisors.

In the case of students pursuing concurrent Ph.D. and D.D.S. degrees, a Dentist/Scientist Committee will be appointed by the Ph.D. Graduate Program Committee. The Dentist/Scientist Committee will consist of the student’s mentor/advisor, the Biomedical Sciences Program Director, and the Clinical Graduate Program Director. Other members may also be appointed by the Ph.D. Graduate Program Committee. Meetings of the Dentist/Scientist Committee will be held at least once a year to review the student’s progress; these meetings will be organized by the student and the mentor. Additional meetings may be held at the request of the student or mentor, or if any issues affecting progress develop. If necessary, the Associate Dean for Research and Graduate Studies will attend the meetings of the Dentist/Scientist Committee to help coordinate the clinical and basic science components of the program.

**Mentors**
By no later than the third semester and preferably by the end of the second semester, each student should select a mentor from among the graduate faculty who will be responsible for helping the student formulate a degree plan. For students entering with a year of advanced standing, a mentor should be selected by the end of
the second semester of residence. The graduate faculty member (mentor) who assumes responsibility for coordinating the student's dissertation research will be a regular faculty member of the graduate faculty. In some circumstances, a mentor from outside the Program may be permitted with the approval of the Ph.D. Graduate Program Committee. In such cases, a graduate faculty member will be appointed as a co-mentor and will serve as the student's advocate who will advise the student in meeting the degree requirements.

The qualities of a good mentor are numerous. The mentor must: 1) produce scholarly activity and be able to establish a close rapport with the graduate student to facilitate excellence in research; 2) have a substantial background in the methodology for the proposed project and be able to guide the student in formulating a credible scientific design; and 3) have time for research and for counsel and supervision of students. Consequently, a mentor typically cannot accommodate more than a relatively small number of students, usually a maximum of three (including both M.S. and Ph.D.) at any particular time.

Initial Degree Plan
After consultation with their mentor, the student will develop an initial degree plan to be submitted to the Ph.D. Program Director by the end of the third semester of residence. For students entering with advanced standing, this document should be prepared and submitted as early as possible.

The degree plan must contain: 1) a listing of completed and ongoing coursework, 2) an approximate listing of future coursework, 3) a statement of the student's overall research area, and 4) a possible specific area for dissertation research. The Ph.D. Graduate Program Committee will review this document and make suggestions for changes, as appropriate.

In the case of students pursuing concurrent Ph.D. and clinical training, the student's clinical advisor (Clinical Program Director) must also approve the degree plan prior to submission to the Ph.D. Graduate Program Committee. If necessary, the Clinical Program Director and the student's mentor will be invited to attend the meeting of the Ph.D. Graduate Program Committee where the degree plan is reviewed. The student should also be available during such meetings in case consultation is requested by the Committee.

Final Degree Plan and Preliminary Examinations
The student, in consultation with their mentor and Advisory Committee, must prepare a final degree plan that includes a plan for preliminary examinations. This plan should be submitted to the Ph.D. Graduate Program Committee by the end of the fifth semester of residence. For students entering with advanced standing, it is expected that this document will be prepared and submitted in the second year of residence.

The final degree plan will include: 1) an update of completed and ongoing coursework and a listing of any future coursework; 2) descriptions and rationale for two cognate areas of study; 3) a listing of the faculty member(s) responsible for each cognate examination; 4) a brief description of the dissertation topic comprising the
major area of study; 5) a list of the members of the dissertation committee; and 6) a tentative schedule for completing the preliminary examinations (written and oral). The Ph.D. Graduate Program Committee, in conjunction with the mentor, approves or suggests modifications.

Students are encouraged to begin the process of taking their preliminary examinations as early in their program as possible, usually by the fifth semester of residence or the third semester for students with advanced standing. The examinations should be completed by the end of the seventh semester of residence, or earlier for students with advanced standing. These schedules will be delayed for students pursuing dual training programs.

Cognate Examinations
Each student will select two cognate areas for examination that are conceptually linked to the major area of study (dissertation topic), but that rely on distinct research technologies and different research literature. The cognate areas should be highly specific, and each should focus on a singular research topic. Two faculty members with advanced knowledge of these fields, other than the student’s mentor, will be chosen by the student to conduct each cognate preliminary examination. Two additional faculty members chosen by the student will serve as secondary readers. The student will assemble annotated bibliographies of approximately 50 or more references for each specific topic. Upon satisfactory completion of each bibliography, as determined by the supervising faculty members, an examination consisting of a series of questions to be completed as a take-home or open-book examination is given to the student. The time period for completion of each cognate examination is not to exceed one week. If deficiencies are found in the examination, the faculty may elect to require written or oral clarification of the answers. This additional portion of the cognate examination must be completed within a maximum of two weeks. The faculty evaluating each examination will consolidate their results and report them to the Biomedical Sciences Graduate Program Committee in the form of a letter.

As an option to the take-home examination, a student – with the permission of the faculty advisors – may elect to produce a review paper. This paper should be of sufficient quality to be submitted for publication.

Major Examinations
The major preliminary examination is based on the dissertation proposal. The student prepares a research proposal according to the NIH format. The student’s Dissertation Committee reads and approves this proposal and, after approval using the form "Proposal for Thesis/Dissertation", gives the student an oral examination. The examiners consist of available members of the Dissertation Committee, and if necessary, other faculty members appointed by the Ph.D. Graduate Program Committee. The format of the oral exam consists of a brief presentation (15 to 30 minutes) of the proposal, followed by questioning by the committee. The questions are based on the content of the dissertation proposal, but may also be more wide-ranging to include topics from the broader area of the student’s proposed research. The student’s mentor synthesizes the opinion of the examining faculty regarding the
proposal and the oral examination, and reports the results to the Ph.D. Graduate Program Committee. The mentor also reports any dissenting opinions. In case of disagreements, a simple majority vote is used to achieve resolution. The results of the oral examination will be reported with the outcome of the dissertation defense on the form entitled "Defense and Oral Examination Outcome".

After the student satisfactorily completes the residency requirements, all formal course work (excluding Dissertation), the two preliminary examinations, and the dissertation proposal, the Biomedical Sciences Graduate Program Committee advances the student to candidacy for the Ph.D. degree. Failure of any portion of the program may require additional work, retaking of examinations, or in some cases, dismissal from the program. In some cases, upon approval of the Graduate Program Committee, a student may advance to candidacy even if one or two formal courses remain to be completed.

**F. Use of Distance Technologies**  
*If applicable, describe the use of any distance technologies in the program.*

Distance technology will not be used for this program, except in very unusual circumstances, e.g., National Institute of Health webinars on compliances issues.

**G. Program Evaluation**  
*Describe how the program will be evaluated.*

In order to assess the effectiveness of the program, a number of evaluation procedures implemented within the current Graduate Program in Oral Biology and Graduate Program in Biomedical Sciences, allowing for concrete analysis of the program, will continue. These evaluation procedures include various measures for assessment with specific target levels that determine success of the program. The general measures that will continue, are as follows:

- Measure 1: Completion of Curriculum
- Measure 2: Completion of elective coursework
- Measure 3: Advisory committee meeting
- Measure 4: Seminar
- Measure 5: Preliminary examination
- Measure 6: Completion of student research
- Measure 7: Laboratory rotations
- Measure 8: Ethics course
- Measure 9: Compliance certifications
- Measure 10: Dissertation

A number of forms have been developed to help evaluate student progress throughout the graduate programs. These forms are based on forms used by the TAMU Office of Graduate and Professional Studies. They are intended for use by a student's advisory committee to monitor the student's advancement through a degree program, analyze their progress in mastering the various student learning objectives (SLO), and track their overall academic
success based on the standards set by TAMHSC. The following forms are used to evaluate the measures listed above:

- Degree Plan
- Transfer Work Evaluation
- Thesis/Dissertation Committee Membership Approval
- Ongoing Research Assessment
- Student Seminar Evaluation
- Oral Preliminary Exam Evaluation
- Written Preliminary Exam Evaluation
- Proposal for Thesis/Dissertation
- Oral Defense Outcome
- Written Defense Outcome

Measurements and performance targets of each SLO are evaluated at the end of every academic year, and adjustments are made based on the findings. Ultimate decisions are made by the Associate Dean for Research and Graduate Studies at TAMBCD, who is advised by the Graduate Education Council (GEC). The GEC is comprised of members who represent each of the professional specialties and the GPBMS. This array of perspectives and the opportunity for a group assessment of the graduate program helps to implement changes that will meaningfully enhance the education and exposure to research provided to the students.

The graduate program is regularly evaluated by the GEC in an attempt to measure the success of individual faculty and students based on the resources and opportunities provided. Input from faculty and students is actively sought, and suggestions for improvements are considered when evaluating the program. Changes to the program are proposed to the GEC for approval; the GEC then assesses how the changes would affect the graduate program as a whole and decides how to proceed.

III. Faculty

A. Faculty Availability

Use these tables to provide information about core and support faculty. Add an asterisk (*) before the names of the individuals who will have direct administrative responsibilities for the program. Add a pound symbol (#) before the name of any individuals who have directed doctoral dissertations or master's theses. Add and delete rows as needed. (Core Faculty: Full-time tenured and tenure-track faculty who teach 50 percent or more in the doctoral program or other individuals integral to the doctoral program who can direct dissertation research. Support Faculty: Other full-time or part-time faculty affiliated with the doctoral program.)

<table>
<thead>
<tr>
<th>Name and Rank of Core Faculty</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>e.g.: Robertson, Assoc. Prof</td>
<td>PhD. in Molecular Genetics</td>
<td>MG200, MG285, MG824 (Lab Only)</td>
<td>50%</td>
</tr>
<tr>
<td>Name</td>
<td>Degree/Institution</td>
<td>Code(s)</td>
<td>Percentage</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------</td>
<td>--------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Bellinger, Larry L.</td>
<td>PhD in Physiology, Univ. California, Davis</td>
<td>BMS5312, BMS5221</td>
<td>50%</td>
</tr>
<tr>
<td>Regents Professor, Associate Dean</td>
<td>BMS55V75, BMS55V75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benson, M. Douglas</td>
<td>PhD in Biological Chemistry, Univ. Michigan, Ann Arbor</td>
<td>BMS6770</td>
<td>50%</td>
</tr>
<tr>
<td>Douglas Assistant Professor</td>
<td>BMS5221, BMS5221, BMS55V75, BMS55V73, BMS5222, BMS5V04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buschang, Peter H.</td>
<td>PhD in Human Growth &amp; Development, Univ. Texas, Austin</td>
<td>BMS5880, BMS55V75,</td>
<td>50%</td>
</tr>
<tr>
<td>Professor</td>
<td>BMS55V42, BMS5222,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheng, Yi-Sheng Lisa</td>
<td>DDS, Kaohsiung Medical Univ., PhD in Biomedical Studies, Baylor Univ.</td>
<td>OP5V21, BMS5251</td>
<td>50%</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>BMS6880, BMS55V75, BMS55V42, BMS5222,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dechow, Paul C.</td>
<td>PhD in Anatomy, Univ. of Chicago</td>
<td>BMS5244</td>
<td>80%</td>
</tr>
<tr>
<td>Professor, Chair</td>
<td>BMS55V42, BMS5222,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feng, Jerry</td>
<td>PhD in Physiology, Univ. of Connecticut</td>
<td>BMS6510</td>
<td>50%</td>
</tr>
<tr>
<td>Professor</td>
<td>BMS55V42, BMS55V42,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groppe, Jay C.</td>
<td>PhD in Biochemistry, Univ. California, Santa Barbara</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Professor</td>
<td></td>
<td>BMS5350</td>
<td>50%</td>
</tr>
<tr>
<td>Honeyman, Allen L.</td>
<td>PhD in Microbiology, Univ. of Kansas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Professor</td>
<td></td>
<td>BMS5341, Bms5V40,</td>
<td>50%</td>
</tr>
<tr>
<td>Kramer, Philip R.</td>
<td>PhD in Biochemistry, Texas A&amp;M Univ.</td>
<td>3340, 6870</td>
<td></td>
</tr>
<tr>
<td>Professor</td>
<td></td>
<td>BMS55V42, BMS55V42,</td>
<td>50%</td>
</tr>
<tr>
<td>Liu, Xiaohua</td>
<td>PhD in Polymer Chemistry, Tsinghua, Univ., China</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assistant Professor</td>
<td></td>
<td>BMS55V42, BMS55V42,</td>
<td>50%</td>
</tr>
<tr>
<td>Lu, Yongbo</td>
<td>PhD in Oral Biology, Univ. of Missouri-Kansas City</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assistant Professor</td>
<td></td>
<td>BMS5221, HPE5225</td>
<td>50%</td>
</tr>
<tr>
<td>McCann, Ann L.</td>
<td>PhD in Educational Studies, Univ. of Nebraska</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Professor</td>
<td></td>
<td>BMS5341, BMS5214,</td>
<td>50%</td>
</tr>
<tr>
<td>Mues, Gabriele</td>
<td>MD, (Germany), USMLE 1, 2, 3 (USA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assistant Professor</td>
<td></td>
<td>BMS5215, BMS55V69</td>
<td>50%</td>
</tr>
<tr>
<td>Opperman, Lynne A.</td>
<td>PhD in Developmental Biology, Univ. of Witwatersrand, S. Africa</td>
<td>BMS55V42, BMS55V</td>
<td>50%</td>
</tr>
<tr>
<td>Professor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qin, Chunlin</td>
<td>DDS PhD in Dentistry, Univ. Okayama, Harbin</td>
<td>BMS55V42</td>
<td>80%</td>
</tr>
<tr>
<td>University of Wisconsin-Madison</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of Support Faculty and Faculty Rank</td>
<td>Highest Degree and Awarding Institution</td>
<td>Courses Assigned in Program or Other Support Activity</td>
<td>% Time Assigned to Program</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
<td>------------------------------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>#Al-Hashimi, Ibtisam Professor</td>
<td>PhD in Oral Biological Univ. New York</td>
<td>BMS5214</td>
<td>5%</td>
</tr>
<tr>
<td>#Berry, Charles W. Professor, Associate Dean</td>
<td>PhD in Microbiology/Biochemistry Baylor Univ.</td>
<td></td>
<td>5%</td>
</tr>
<tr>
<td>#Carlson, David S. Regents</td>
<td>PhD Biological Anthropology Univ. of Massachusetts</td>
<td>BMS5V69</td>
<td>5%</td>
</tr>
</tbody>
</table>

China

<table>
<thead>
<tr>
<th>Name of Support Faculty and Faculty Rank</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program or Other Support Activity</th>
<th>% Time Assigned to Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>#Roesch, Darren Assistant Professor</td>
<td>PhD in Pharmaceutical Sciences Univ. of Florida</td>
<td>BMS7290,BMS8380, BMS9110</td>
<td>50%</td>
</tr>
<tr>
<td>#Ruest, Louis-Bruno Assistant Professor</td>
<td>PhD in Molecular and Cellular Biology Univ. Montreal, Canada</td>
<td>BMS5V69, BMS5V73</td>
<td>50%</td>
</tr>
<tr>
<td>#Schneiderman, Emet Associate Professor</td>
<td>PhD in Anthropology Univ. of Michigan</td>
<td>BMS7400,BMS5V04,BMS5221,</td>
<td>50%</td>
</tr>
<tr>
<td>#Svoboda, Kathy Regents Professor</td>
<td>PhD in Anatomy Univ. of Nebraska, Omaha</td>
<td>BMS6600, BMS5V69,BMS5V73 BMS5E40,BMS5E42</td>
<td>60%</td>
</tr>
<tr>
<td>#Varanasi, Venu Assistant Professor</td>
<td>PhD in Chemical Engineering Univ. of Florida</td>
<td>BMS5V42</td>
<td>70%</td>
</tr>
<tr>
<td>Wang, Xiaofang Assistant Professor</td>
<td>EDS, MDS, PhD in Fourth Military Univ., China</td>
<td></td>
<td>90%</td>
</tr>
</tbody>
</table>

Positions are open for two additional faculty members that will be core faculty in Ph.D. program. These positions will be filled in late 2013 or early 2014.
<table>
<thead>
<tr>
<th>Professor, VPRGS</th>
<th>Degree(s)</th>
<th>Clinical Expertise</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glickman, Gerald N. Professor, Chair</td>
<td>DDS – Ohio State Cert in Endo – Northwestern Univ.</td>
<td>Clinical expert for patient oriented dissertations.</td>
<td>5%</td>
</tr>
<tr>
<td>He, Jianing Assistant Professor</td>
<td>DMD/MDS West China Univ. PhD in Oral Biology Univ. of Conn</td>
<td>BIMS5V42</td>
<td>5%</td>
</tr>
<tr>
<td>Hutchins, Bob Professor</td>
<td>PhD in Anatomy Tulane Univ.</td>
<td>BMS5V04</td>
<td>5%</td>
</tr>
<tr>
<td>Kessler, Harvey P. Professor</td>
<td>DDS – Maryland MS Oral Biology – George Washington Univ.</td>
<td>Clinical expert for patient oriented dissertations.</td>
<td>5%</td>
</tr>
<tr>
<td>Kerins, Carolyn A.</td>
<td>PhD Texas A&amp;M Univ. Health Science Center, DDS Baylor College of Dentistry</td>
<td>Clinical expert for patient oriented dissertations.</td>
<td>5%</td>
</tr>
<tr>
<td>Nagy, William W. Professor</td>
<td>DDS – Ohio State Univ. Cert in Prosth Brooke AMC</td>
<td>Clinical expert for patient oriented dissertations.</td>
<td>5%</td>
</tr>
<tr>
<td>Puttaiah, Raghunath Associate Professor</td>
<td>BDS PhD in Epidemiology Univ. of Alabama</td>
<td>Clinical expert for patient oriented dissertations.</td>
<td>5%</td>
</tr>
<tr>
<td>Spears, Robert Professor</td>
<td>PhD in Biomedical Sciences Texas A&amp;M HSC</td>
<td>BMS6640,BIMS5V42 BMS6820</td>
<td>5%</td>
</tr>
<tr>
<td>Taylor, Reginald W. Associate Professor</td>
<td>DMD – Harvard DMSc – Harvard Cert. in Ortho – Harvard</td>
<td>Clinical expert for patient oriented dissertations.</td>
<td>5%</td>
</tr>
<tr>
<td>Triplett, Gilbert Regents Professor</td>
<td>PhD in Physiology Biophysics Univ. of Georgetown</td>
<td>Clinical expert for patient oriented dissertations.</td>
<td>5%</td>
</tr>
<tr>
<td>Viswanathan, Kavitha</td>
<td>Ph.D. in Oral Biology; M.S. in Oral Biology; BDS, The Tamil Nadu Dr. M.G.R. Medical Univ.</td>
<td>Clinical expert for patient oriented dissertations.</td>
<td>5%</td>
</tr>
<tr>
<td>Wright, John Regents Professor</td>
<td>DDS, MS in Oral Pathology Univ. of Indiana</td>
<td>Clinical expert for patient oriented dissertations.</td>
<td>5%</td>
</tr>
<tr>
<td>Projected New Support Faculty in Year 2014.</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**B. Teaching Load**
Indicate the targeted teaching load for core faculty supporting the program. (Teaching load: Total number of semester credit hours (SCH) in organized teaching courses taught per academic year by core faculty divided by the number of core faculty in the prior year.)

These data were compiled from our students’ coursework from Fall 2012 (65 SCH), Spring 2013 (66 SCH) and Summer 2013 (35 SCH). The total number of hours taken by our students was 166 SCH. There are 21 core faculty so the average teaching load per core faculty member is 7.9 SCH per year.

C. Faculty Productivity
For the most recent five years, indicate the number of discipline-related refereed papers/publications, books/book chapters, juried creative/performance accomplishments, notices of discoveries filed/patents issued per core faculty member, and the number and amount of external grants. Conference papers, reviews, posters, and similar scholarship need not be included. Where relevant to performing arts degrees, major performances or creative endeavors by core faculty should be included.

**Publications by Core Faculty from 2008 through 2012**

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred Manuscripts</td>
<td>468</td>
</tr>
<tr>
<td>Book Chapters</td>
<td>32</td>
</tr>
<tr>
<td>Books</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>504</td>
</tr>
</tbody>
</table>

**Grants**

<table>
<thead>
<tr>
<th>Number of External Grants</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Research Grant Expenditures 2012</td>
<td>$3,474,760.00</td>
</tr>
</tbody>
</table>

IV. Resources

A. Student Financial Assistance
Identify the number of full-time and part-time students who would be funded and the anticipated amounts for each of the first five years. (Add and delete rows as needed.)

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching Assistantships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of students</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Amount per student</td>
<td>$21,960</td>
<td>$22,400</td>
<td>$22,847</td>
<td>$23,304</td>
<td>$23,770</td>
</tr>
<tr>
<td><strong>Research Assistantships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of students</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Amount per student</td>
<td>$21,960</td>
<td>$22,400</td>
<td>$22,847</td>
<td>$23,304</td>
<td>$23,770</td>
</tr>
<tr>
<td><strong>Scholarships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of students</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>students</td>
<td>Amount per student</td>
<td>$21,960</td>
<td>$22,400</td>
<td>$22,847</td>
<td>$23,304</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
</tbody>
</table>

**B. Library Resources**

*Provide the library director’s assessment of both paper and electronic library resources for the program. Describe plans to build the library holdings to support the program.*

The Baylor Health Sciences Library offers a full range of services and resources in support of the educational, research and clinical programs of the College. The Library also serves the Baylor Health Care System (BHCS), a not-for-profit network of hospitals, primary care physician centers and practices, rehabilitation clinics, and senior health centers in the North Texas area. The Library receives separate funding from TAMU-BCD and BHCS; as a result, the Library provides a deeper level of resources than would be possible if funded by only one institution.

The Library maintains a dental and medical collection of over 18,000 print volumes, over 9,000 electronic journal subscriptions, and over 100,000 electronic books. This facility is open seven days per week (90 hours). The Library’s electronic resources are available for use anywhere on campus, with easy remote access provided via proxy. All TAMU-BCD faculty and students have access to all library services, including book checkout, interlibrary loan, mediated database searching, and direct checkout privileges at libraries throughout Texas (including all libraries within the Texas A&M University System) via the TexShare program. All libraries serving the HSC collaborate on the licensing of core resources relevant to all components. Further, the libraries within the Texas A&M University System have been very successful in securing System-wide licensing for online resources such as Elsevier’s Science Direct and Web of Knowledge. Additional electronic databases made available through the Library include Dentistry and Oral Sciences Source, MEDLINE, Cinahl, Lexicomp Online for Dentistry, VisualDX, Anatomy TV-Dentistry, ClinicalKey, Epocrates Online Premium, EndNote, Micromedex, Scopus, Exam Master, Cochrane Library, and others. Further information regarding the Library’s collections and services may be found on its website: [www.bcd.tamhsc.edu/library](http://www.bcd.tamhsc.edu/library).

The Library occupies 3,700 square feet. Study space for 140 people is available. It also houses an instructional computer laboratory with 30 PCs available for student use.

The Library staff includes 6 FTE professional librarians and 5.5 FTE support staff. Graduate students attend a mandatory library orientation prior to their first semester of study, when they are given an overview of library services and a tour of the Library. The Library offers a variety of classes throughout the year, as well as one-on-one and small group instruction sessions. The Library maintains a kiosk of tip sheets and electronic tutorials for those who prefer self-directed learning. Librarians regularly teach sections in a variety of TAMU-BCD courses and are frequently enlisted by faculty to work with individuals or classes on research projects. The Library is committed to ensuring that all TAMU-BCD students learn to effectively access information in a variety of formats; this is the core of the Library’s mission and goals.
C. Facilities and Equipment

Describe the availability and adequacy of facilities and equipment to support the program. Describe plans for facility and equipment improvement or additions.

The Ph.D. program at TAMBCD has been in existence since 1993 and under the auspices of the TAMHSC since 1997. The current facilities and equipment are adequate for the program and will be enhanced if the need arises in the future. TAMBCD has over 32,000 square feet (net) of space dedicated exclusively for research laboratories. Twenty thousand square feet of laboratory space is located in the eight-floor main building and 12,000 in the TAMBCD’s Research Sciences Building located directly across the street from the main TAMBCD site (see photo). In addition, there is another 10,000 square feet of space that houses the Animal Resource Unit in the main building. The Center for Craniofacial Research and Diagnosis supports a Clinical Core Facility and has dedicated clinical operatories. Clinical research is also conducted in the many clinical patient areas in the College. All of the research-oriented faculty members operate well-equipped, modern laboratories with adequate space for basic equipment and trainees. Core resources for oral biology research, including research staff, are supported and maintained primarily by the Office of the Associate Dean for Research and Graduate Studies and the Department of Biomedical Sciences.

The Bioengineering Laboratories occupy approximately 2000 ft² of laboratory space in the Sciences Building. Resources include:

- 3D printer (Robocast Assisted Deposition System EBD-2011-05) system is equipped with a multi-dimension stage controller for the generation of scaffolds for tissue engineering. The system consists of an extrusion-based delivery system that has a syringe pump controlling the inlet and robotic-assisted extrusion of scaffold parts on the outlet.
- ATR-FTIR. The Nicolet iS10 ATR-FTIR system offers an unprecedented level of integration between the spectrometer, software and the accessory with standard features like SPV, QCheck and Advanced ATR correction.
- Nanodrop 2000. The NanoDrop 2000 is a microvolume spectrophotometer for measuring DNA, RNA, and protein. Using the patented sample retention system* the NanoDrop 2000 accurately measures samples as small as 0.5 μL, and reports sample concentration, purity ratios, and full spectral data.
- Fluorometer. The QuantiFluor™-P fluorometer is a lightweight, handheld instrument configured for many of the fluorescent probes commonly used in nucleic acid and protein quantitation.

The Biomechanics/Materials Testing Laboratory occupies approximately 3900 ft² of laboratory space in the Sciences Building. Available resources include:

- Casting, Mechanical Testing, and X-ray Diffraction Porcelain Processing
- Corrosion Testing and Atomic Absorption
- Thermal Analysis
- Atomic Absorption Spectrometry
- Minolta CR-210 Chromameter
- EG&G 273A Potentiostat/Galvanostat (Princeton Applied Research) and a corrosion cell
- Solartron 1280Z Electrochemical Measurement System
- Ticast Super R (Selec Inc., Japan) for casting titanium alloys; Lindberg tube furnace and a Ney Centurion Q200 vacuum furnace
- Nd:YAG laser welding machine (Neo-Laser L, Girrbach, Dental-Systeme, Germany)
- Instron Models 1125 (20,000 lbs. maximum) and 1011 (1000 lbs. maximum) universal test machines; Struers FM-7 digital microhardness tester (load range 50-1000 g).
- Mitutoyo Surf test-401 profilometer to measure surface topography
- 2 Buehler Isomet low-speed saws; Vector-Beta, Simplimet3, Ecomet3, and Vibromet2 polishing stations; and gold, carbon, and nickel coating systems.
- Shimadzu TGA-50 Thermograviometric Analyzer; Shimadzu DSC-50 Differential Scanning Calorimeter; Shimadzu TMA-50H Thermomechanical Analyzer; TMA-50H, a thermomechanical analyzer
- The Rigaku Miniflex CN2005 x-ray diffractometer

The Histology Core Facility located both in the main building and the Sciences Building provides oversight and technical support for 1) a histology laboratory, 2) a scanning electron microscope, 3) confocal and microscopy image analysis, and 4) microcomputed tomography and image analysis. Each component of the core facility is equipped as follows:

1) The Histology Core Laboratory is a 400 ft² facility equipped with regular laboratory hardware, including the following:
   - Leitz 1512 microtome
   - VIP Tissue Tek processing station
   - PELCO Biowave microwave
   - Paraffin embedding station
   - Buehler Isomet low speed saws (2)
   - Buehler grinding/polishing devices
   - Slide warmer
   - Histo – orientator
   - Water bath (2)
   - Light microscopes
   - Knife sharper
   - Dual-headed microscope (2)
   - Slide dryer (2)
   - Paraffin oven

2) The Scanning Electron Microscope, a JEOL JSM-6010LA SEM, uses a field emission gun with cold cathode. The resolution is 1.5 nm in secondary electron imaging (SEI) and 3.0 nm in backscattered electron imaging (BEI) at 30 kV. The airlock specimen chamber allows up to a 32 mm diameter sample, and the size can also be up to 150 mm without the airlock.
   - motorized X-Y stage
   - automatic SEM condition setup based on sample type
   - simultaneous multiple live image and movie capture
   - easy sample navigation at 5x – 300,000x magnification

24
3) **The Microscopy-Image Analysis Facility** contains:
   - Nikon epifluorescent microscope equipped for digital monochrome and color image analysis, an X-Y-Z encoded motorized stage, Pentium computer and Elements software, as well as a second Nikon microscope with a Sony DXC-390 camera and Bioquant NOVA software for bone histomorphometry.
   - Zeiss Axioplan microscope with a SPOT color camera for digital capture.
   - Leica DMRXE microscope with color camera for digital capture.

4) **The Micro-Computed Tomography Facility** consists of a ScanCo MicroCT 35 Scanner with two terminals.
   - Windows-based microcomputer for image analysis.
   - Associated Windows-based software includes Mimics, Geomagic Studio, Strand 7 Finite Element software, Analyse, and Imaris.
   - Windows-based microcomputer set up to use with Bioquant Osteo.

**In addition to these facilities, the Department of Biomedical Sciences (BMS) houses the following core equipment,** located on the fourth floor of TAMBCD and the second floor of the Sciences Building:

- Agilent 2100 Bioanalyzer
- Two BioRad CFX96 real-time PCR instruments
- MJR gradient thermocycler
- Kodak Image Station
- NucleoVision image station
- Beckman L-60 ultracentrifuge
- Two Beckman J2-21 centrifuges
- Beckman GS-6R tabletop centrifuge
- Eppendorf refrigerated micro-centrifuge
- Savant Speed-Vac S200 and lyophilizer
- Labline shaking incubator
- Packard Cobra auto-gamma counter
- Packard 1900 TR liquid scintillation counter
- Perkin Elmer 1450 Luminescence center
- Beckman DU-530 spectrophotometer
- Molecular Devices 96 well plate reader
- Cell culture facilities with a tissue dissection hood, laminar flow biosafety hood, and associated CO₂ incubators and microscopes.
- 4C coldroom
- Microm HM 500 M cryostat
- Complete darkroom with sinks and automated film developer.
- -80C freezers.
- Glassware dishwasher
- UV Crosslinker
- Tissue homogenizers and sonicator

**The Technology Development Office (TDO)** is housed in the Office of the Associate Dean for Research and Graduate Studies. The functions of the TDO are to
facilitate translational research and technology development, from the identification of promising technologies, funding initial research, protecting intellectual property, and aiding in technology transfer and commercialization,
- liaise with BCD alumni and with the dental community at large, encouraging and fostering creativity and ideas regarding novel treatment modalities,
- create and expand the research and development scope of BCD,
- interact and cooperate with outside agencies and companies to develop sponsored research opportunities for translational research, clinical trials and product testing,
- create opportunities for technology transfer from BCD

The Advanced Technology Clinic is housed in separate rooms in the third floor clinic. It contains ITERO and D4D 3D imaging equipment for milling inlay and onlay prosthetics from intraoral images.

The Biopsy Service is an oral histopathology service for clinicians, and currently approximately 8500 cases are processed annually. All specimens have been archived in paraffin blocks, a rich resource of tissue representing a variety of head and neck diseases, including neoplasms. These cases can be retrieved by a variety of parameters, including diagnosis, allowing retrospective analysis of a variety of diseases by immunohistochemistry, PCR, in-situ hybridization, gene rearrangement studies, etc.

The Center for Excellence is a newly established Center of Excellence and builds on the dental school’s longstanding pipeline programs that address issues like access to care and minority enrollment. The program is funded by a five-year, $3.4 million grant from the U.S. Department of Health and Human Services’ Centers of Excellence program, and supports students wanting to earn a master’s degree in education for health care professionals.

The Center for Maxillofacial Prosthodontics Clinic is the only such center in North Texas, providing interdisciplinary treatment for patients with both oral and facial disfigurements. A certified clinical Anaplastologist concentrates on advanced prosthetics solutions and digital technologies in the treatment of patients with acquired or inherited facial defects. This clinic specializes in restoring normal appearance and function to patients with acquired or congenital defects of the dental, oral and facial structures, as a result of disease, trauma, cancer treatment, or birth defects. This treatment can be accomplished by placement of implant-supported devices (artificial noses, ears, eyes, teeth) or other similar procedures. The clinic provides access to a unique population of patients for clinical research and an important retrospective patient database.

The Functional Analysis Facility is a multi-disciplinary center of excellence whose mission is to address the causes, consequences, and treatment of craniofacial deformities through basic and clinical research. It maintains a fully equipped clinical facility dedicated to clinical research and consists of a small waiting room, a reception area, a sterilization area, and three fully-functional dental operatories. The clinic is made available to other investigators conducting clinical craniofacial research. Next to the clinic are two laboratories to support and extend the research conducted in the

AP/Updated 9.6.12
clinical facility. These laboratories include a 300 ft² computer/imaging laboratory and a 500 ft² laboratory dedicated to the collection of data relating to functional parameters of human oral and craniofacial activity. The functional Lab Equipment includes:
- OptotrukOp® 3020 Position Sensor (Northern Digital) for measuring movements
- Bite force transducer w/amplifier and oscilloscope
- Equipment for measuring electromyography - amplifiers, leads, etc.
- Equipment for measuring masticatory performance - templates for Cuttersil tablets, sieves, balance, oven
In addition to this equipment, the lab contains equipment for scanning 3D objects:
- 3D (Motionview®) laser scanner and software for scanning models

The Health Services Research Center consists of a number of offsite clinics, including the dental clinic at the Dallas County Juvenile Detention Center, the Dallas County Jail and several Community Dental Care locations. The center also has ties to the Dallas Independent School District through the school-based dental sealant program, in which approximately 5,000 elementary school students are screened and/or treated each year. With the exception of the Dallas County Jail clinic, these programs serve primarily pediatric populations, and all are excellent settings for clinical and/or health services research. Approximately 15,000 patients are treated per year. Epidemiologic studies of oral health disparities and health care delivery are currently underway at several of these facilities. The department also provides health promotion/disease prevention programs for Dallas County and beyond and is currently beginning a pilot study on alternate approaches to prevention of early childhood caries.

The Oral and Maxillofacial Imaging Center offers sophisticated diagnostic imaging services to diagnose and manage, and conduct clinical research concerning disorders of the head and neck region, including temporomandibular joint dysfunction, dental implant site assessment, orthodontics, craniofacial anomalies, salivary gland dysfunction, trauma, and general pathology. Imaging technology includes digital projection radiography including panoramic radiography, contrast radiography, cone-beam computed tomography, and digital photography, as well as facilities for computerized study and secondary renderings of digital images.

The Pediatric Craniofacial Clinics: Pediatric Dentistry manages a 6-chair graduate clinic at Children’s Medical Center and a 5-chair graduate clinic at Texas Scottish Rite Hospital for Children that provide oral care to a large number of children suffering from genetic and acquired disorders, which include craniofacial and dental malformations. The Department of Pediatric Dentistry also maintains and staffs five community-based clinics for high-risk children from low-income or underserved families at the Bluit Flowers, DeHano-Saldivar, Southeast, Vickery Meadow and East Dallas Community Dental Care Clinics. In addition to these clinics, the Department of Pediatric Dentistry staffs the multidisciplinary craniofacial team at Children’s Medical Center of Dallas.

The Pre-Doctoral Implant Clinic is the diagnostic and treatment center for the Pre-Doctoral program in Implant Dentistry. The clinic consists of a diagnostic and treatment planning section and five clinic chairs for surgical consultations, impression procedures, and final restorative procedures and, as needed, will use additional clinical chairs in the

AP/Updated 9.6.12
3rd and 4th year restorative clinics. Radiographic and surgical guides are made in the adjacent implant laboratory which has a drill press, positive pressure BioSter forming unit and other supportive instrumentation to manufacture the guides. The implants and restorative components are provided from an Educational Grant from Straumann.

The Stomatology Center specializes in a team approach for diagnosis and management of rare and severe diseases and disorders of the oral mucosal tissues that are difficult to diagnose and manage. They include, but are not limited to, mucocutaneous disorders, oral hypersensitivity reactions, candidosis, AIDS-related diseases and disorders, burning mouth and tongue syndrome and problems resulting from chemotherapy, radiation therapy or abuse of illicit drugs or alcohol. Internationally recognized as a unique referral site for patients seeking medical help for rare conditions, doctors are able to utilize sophisticated diagnostics not normally available in dental offices. The Salivary Dysfunction Clinic and Stomatology Research Laboratory enhances collaboration among medical and dental specialists in the care of Sjögren’s patients and offers a unified and organized way of referring patients with Sjögren’s Syndrome to specialists in ophthalmology, rheumatology, gastroenterology, pulmonary medicine, dermatology and psychology as well as oral/salivary dysfunction.

Other clinical facilities
Baylor College of Dentistry Clinics: BCD has a history of over 100 years as a fully accredited dental school with developed programs in all areas of dental education. Approximately 105,000 patient visits per year occur in BCD clinics and nearly 300,000 individuals are seen during community service activities. BCD has complete state-of-the-art clinical operatories, laboratories, diagnostic facilities, and computerized dental simulation laboratories that are available for approved clinical research by faculty and mentored student trainees. BCD clinics, which contain 306 chairs, provide the College’s primary resource for instruction in clinical dentistry. In addition to large clinics devoted to general restorative dentistry and undergraduate dental student instruction, there are graduate clinics in Advanced Education in General Dentistry, Endodontics, Orthodontics, Pediatric Dentistry, Periodontics, Prosthodontics, and Oral and Maxillofacial Surgery as well as graduate programs in Dental Public Health and Oral and Maxillofacial Pathology.

Animal Facilities: The TAMBCD on-site 9300 ft² animal resource unit (ARU) consists of two fully equipped surgery areas (with several gas anesthesia machines), an x-ray area with several x-ray machines for taking digital x-rays, animal preparation area and a surgeon preparation. The unit is also equipped with a multiple use/storage area, 14 dog runs, 11 animal rooms (including BLS-2 fully equipped room), hoods and a walk-in, a cage washing machine. The ARU has caging to hold dogs, cats, chickens, guinea pigs, hamsters, mice, rabbits, rats and non-human primates. Currently the ARU contains over 2,000 mice with knockouts of various craniofacial and skeletal genes. One of the animal rooms contains 32 sound-attenuated mice/rat chambers equipped with photobeam computer-activated pellet feeders that can monitor feeding behavior. The meal duration of feeding behavior has become the gold standard for measuring orofacial (TMJ, muscles of mastication, tooth) pain in mice/rats; these continuous R01 funded projects have extend for over ten years.
Non-TAMBCD Affiliations:
Because of its unique position as a stand-alone school, TAMBCD has worked actively and enthusiastically with the following academic institutions to create a functional collaboration and a unified academic home for dentist-scientist trainees. The State of Texas also strongly encourages interdisciplinary and trans-institutional collaborations among state-supported schools. This mandate and other National Institutes of Health (NIH)-driven initiatives have dissolved traditional barriers and TAMBCD has capitalized on the spectrum of opportunities available in this highly collaborative setting.

For six years TAMBCD worked as a full partner with UTSW in their funded CTSA, which has led to close interactions with TAMBCD faculty and UTSW Clinical Research Department. While TAMBCD has its own in-house statistician, this relationship with SWMS provides the College with an additional resource in experimental design and data analysis. TAMBCD faculty also have a close relationship with faculty in several departments at the University of Texas at Arlington and have submitted grants together, including a funded R01.

D. Support Staff
Describe plans, if any, to increase or reallocate support staff in order to sufficiently provide services for the projected increases in students and faculty.

This Ph.D. program has been in existence since 1993 and the current support staff (1.25 FTE spread over three positions in the Department of Biomedical Sciences and the Office of the Associate Dean for Research and Graduate Studies) is adequate and will not change.

E. Five-Year Costs and Funding Sources Summary
On the attached forms, provide estimates of new costs to the institution related to the proposed program and provide information regarding sources of the funding that would defray those costs. Use the Program Funding Estimation Tool found on the Coordinating Board web site (www.thecb.state.tx.us/newprogrampostcertificates) and attach a saved copy of the completed Excel spreadsheet to your application.

This Ph.D. program has been in existence since 1993; the current funding support from the College is adequate and will not change.

V. Institutional Readiness

A. Strategic Plan
Describe how the proposed doctoral program fits into the institution’s overall strategic plan, and provide the web link to the institution’s strategic plan.

This Ph.D. program has been in existence since 1993. The web link to the College’s 2013-2018 strategic plan is

B. Related and Supporting Programs

AP/Updated 9.6.12
Use this table to list all undergraduate and graduate programs within the same 2-digit CIP code that would support the proposed program. Include enrollment, number of graduates, graduation rate, and average time to degree for the last five years. Calculate the program graduation rate starting at the time a student takes the first course in his or her major outside the core curriculum. (Add and delete rows as needed.)

<table>
<thead>
<tr>
<th>MS in Oral Biology</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>35</td>
<td>46</td>
<td>46</td>
<td>49</td>
<td>43</td>
</tr>
<tr>
<td># of Graduates</td>
<td>15</td>
<td>18</td>
<td>14</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>Graduation Rate</td>
<td>87.5%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Average Time to Degree</td>
<td>3.1</td>
<td>3.1</td>
<td>3.0</td>
<td>3.2</td>
<td>3.2</td>
</tr>
</tbody>
</table>

C. Graduation Rates

1. Confirm that the six-year undergraduate graduation rate is at or above the statewide average, minus the students from Texas A&M University and The University of Texas at Austin. The six-year graduation rate is defined as the percentage of first-time degree-seeking students enrolled in a minimum of 12 SCH their first fall semester who have graduated from the same institution or another Texas public or independent institution in six years. It includes students enrolled in developmental education courses, but it excludes students who transfer in from a community college. The data for each university can be found on the Coordinating Board’s web site at www.thecb.state.tx.us/newprogramscertificates.

   If the graduation rate described above is below the state average, new doctoral programs may still be considered if the institution meets at least two of the following three criteria:

   a. The percent of change in the ratio of baccalaureate degrees awarded to the total undergraduate enrollment is at or above the statewide percent of change over the most recent three years, and the institution has had an increase in productivity over the most recent three years.

   b. The percent of change in the total number of baccalaureate degrees awarded is at or above the statewide percent of change for the most recent three years, and the institution has had an increase in productivity over the most recent three years.
c. The percent of change in the number of baccalaureate degrees awarded to "at risk" students\(^1\) is at or above the state percent of change for the most recent three years, and the institution has had an increase in productivity over the most recent three years.

If the institution meets at least two of the three criteria (a-c above), the institution must submit an action plan to improve the six-year graduation rate and the undergraduate success criteria not met. All subsequent applications for new doctoral programs must include an appendix item with a status report on the action plan and the effectiveness of the initiatives it describes.

The only undergraduate program at TAMBCD is the Dental Hygiene Program. The six-year graduation rate is shown in the table below.

<table>
<thead>
<tr>
<th>Year enrolled in Dental Hygiene Program</th>
<th>New students enrolled</th>
<th>Graduated within 6 years</th>
<th>Percent graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>30</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>2008</td>
<td>31</td>
<td>30</td>
<td>96.8</td>
</tr>
<tr>
<td>2009</td>
<td>30</td>
<td>28</td>
<td>93.3</td>
</tr>
<tr>
<td>2010</td>
<td>30</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>2011</td>
<td>27</td>
<td>26</td>
<td>96</td>
</tr>
</tbody>
</table>

---

\(^1\) "At-risk" includes students who meet any of the following criteria: received a Pell grant, graduated with a GED, were 20 years or older when they first entered college, started as a part-time student taking less than 12 hours, or had an SAT/ACT score less than the national average.

AP/Updated 9.6.12
D. Existing Doctoral Programs

Provide the web link(s) for the 18 Characteristics of Doctoral Programs for each of the institution's existing doctoral programs. Describe how the data represent the current quality of the institution's existing doctoral programs. Describe how existing closely related doctoral programs would enhance and complement the proposed program.

The program we are asking to be moved from TAMHSC to TAMBCD was part of the Biomedical Sciences Program, CIP 26.0102.00. We were part of the 18 Characteristics of http://sgs.tamhsc.edu/18-characteristics-of-texas-public-doctoral-program---bms.pdf Doctoral Programs which can be found at

http://www.tamhsc.edu/assessment-effectiveness/academic-assessment/18-characteristics.html

The 18 Characteristics of Doctoral Programs for all programs at TAMU can be found at http://oas.tamu.edu/prospective-students/programs-and-degrees/doctalprogramcharacteristics/

The mission of the present Ph.D. program is unique compared to any other doctoral program at TAMU in that its focus is on oral health research and education. The Ph.D. program targets students who already have a D.D.S. degree or want to combine the D.D.S. with Ph.D. training. The primary objective of this program has been to build a flagship Oral Biology Program combining the best in scientific and clinical dental research. The graduates of the program will form the next generation of dental researchers and educators.

VI. Required Appendices

A. Course Descriptions and Prescribed Sequence of Courses, if applicable
B. Curricula Vitae for Core Faculty
C. Curricula Vitae for Support Faculty
D. Five-Year Faculty Recruitment Plan/Hiring Schedule
E. Institution’s Policy on Faculty Teaching Load
F. Itemized List of Capital Equipment Purchases During the Past Five Years
G. Librarian’s Statement of Adequate Resources
H. Articulation Agreements (if relevant) with Partner Institutions
I. Action Plan for Improving Undergraduate Success Measures (if relevant)

VII. Recommended Appendices (as applicable)

A. List of Specific Clinical or In-Service Sites to Support the Program
B. Letters of Support

2 "Equipment" has the meaning established in the Texas Administrative Code §252.7(3) as items and components whose cost are over $5,000 and have a useful life of at least one year.

AP/Updated 9.6.12
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 Approval – A member of the Board of Regents or designee shall sign the following statement:

   On behalf of the Board of Regents, I certify that the Board of Regents has approved the program.

   ______________________________  ______________________________
   Board of Regents (Designee)        Date of Approval

3. Board of Regents Certification of Criteria for Commissioner or 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 criteria under Texas Administrative Code (TAC) Section 5.50 (b) and (c). The criteria are:

   TAC §5.50(b):
   
   (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 bachelor’s 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.

   TAC §5.50 (c)

   (1-2) be in a closely related discipline to an already existing doctoral program(s) which is productive and of high quality;
   (3) have core faculty that are already active and productive in an existing doctoral program;
   (4) have received no objections from other institutions during the 30-day comment period; and
   (5) have a strong link with workforce needs or the economic development of the state.

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

   ______________________________  ______________________________
   Board of Regents (Designee)        Date
COSTS TO THE INSTITUTION OF THE PROGRAM/ADMINISTRATIVE CHANGE

*Note:* Use this chart to indicate the dollar costs to the institution that are anticipated from the change requested.

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Cost Sub-Category</th>
<th>Before Approval Year*</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>
<td>201,600</td>
<td>205,632</td>
<td>209,745</td>
<td>213,939</td>
<td>218,218</td>
<td>222,583</td>
<td>1,271,717</td>
</tr>
<tr>
<td></td>
<td>(Reallocated)</td>
<td>1,509,197</td>
<td>1,539,381</td>
<td>1,570,168</td>
<td>1,601,572</td>
<td>1,633,603</td>
<td>1,666,275</td>
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<tr>
<td>Program Administration</td>
<td>(New)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
<td>(Reassignments)</td>
<td>42,988</td>
<td>43,848</td>
<td>44,725</td>
<td>45,619</td>
<td>46,531</td>
<td>47,462</td>
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<tr>
<td>Graduate Assistants</td>
<td>(New)</td>
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<td>113,200</td>
<td>115,464</td>
<td>117,773</td>
<td>120,128</td>
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<tr>
<td></td>
<td>(Reallocated)</td>
<td>211,960</td>
<td>216,199</td>
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<td>229,432</td>
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<tr>
<td>Clerical/Staff</td>
<td>(New)</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<td>(Reallocated)</td>
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<td>33,960</td>
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<td>35,332</td>
<td>36,038</td>
<td>36,759</td>
<td>210,652</td>
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<tr>
<td>Supplies &amp; Materials</td>
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<td>7,500</td>
<td>7,500</td>
<td>7,500</td>
<td>45,000</td>
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<td>Library &amp; IT Resources**</td>
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<tr>
<td>Equipment</td>
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<td>300,000</td>
<td>300,000</td>
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<td>1,800,000</td>
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<td>Facilities</td>
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<td>650,000</td>
<td>650,000</td>
<td>650,000</td>
<td>650,000</td>
<td>3,900,000</td>
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<tr>
<td>Other (Identify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>3,068,149</td>
<td>3,109,720</td>
<td>3,152,764</td>
<td>3,196,668</td>
<td>3,241,450</td>
<td>3,287,131</td>
<td>19,055,882</td>
<td></td>
</tr>
</tbody>
</table>

* Include costs incurred for three years before the proposal is approved by the Board (e.g., new faculty, library resources, equipment, facilities remodeling, etc.).

** IT = Instructional Technology

Explanations:
**ANTICIPATED SOURCES OF FUNDING**

*Note: Use this chart to indicate the dollar amounts anticipated from various sources. Use the reverse side of this form to specify as completely as possible each non-formula funding source.*

<table>
<thead>
<tr>
<th>Funding 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>I. Formula Income*</td>
<td></td>
<td></td>
<td>145,477</td>
<td>145,477</td>
<td>145,477</td>
<td>436,431</td>
</tr>
<tr>
<td>II. Other State Funding*</td>
<td>189,112</td>
<td>192,895</td>
<td>51,275</td>
<td>55,210</td>
<td>59,225</td>
<td>547,717</td>
</tr>
<tr>
<td>III. Reallocation of Existing Resources*</td>
<td>2,790,888</td>
<td>2,827,555</td>
<td>2,664,956</td>
<td>2,903,104</td>
<td>2,942,017</td>
<td>14,328,520</td>
</tr>
<tr>
<td>IV. Federal Funding* (In-hand only)</td>
<td>129,720</td>
<td>132,314</td>
<td>134,960</td>
<td>137,659</td>
<td>140,412</td>
<td>675,065</td>
</tr>
<tr>
<td>V. Other Funding*</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>3,109,720</td>
<td>3,152,764</td>
<td>3,196,668</td>
<td>3,241,450</td>
<td>3,287,131</td>
<td>15,987,733</td>
</tr>
</tbody>
</table>
*For more information, please refer to the accompanying Anticipated Sources of Funding: Explanatory Notes and Examples.
NON-FORMULA SOURCES OF FUNDING

*Note: Use this form to specify as completely as possible each of the non-formula funding sources for the dollar amounts listed on the reverse side of this form.*

<table>
<thead>
<tr>
<th>Funding Category</th>
<th>Non-Formula Funding Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>II. Other State Funding*</td>
<td>During years 1 &amp; 2 we anticipate a smaller number than the one listed as this is an ongoing program so we should continue to receive formula income. If not other funds for the existing grad students will be identified from our regular allocation. Research department is working on gaining approval for additional graduate positions. New Faculty positions have already had funding identified.</td>
</tr>
<tr>
<td>#2</td>
<td></td>
</tr>
<tr>
<td>III. Reallocation of Existing Resources*</td>
<td>Currently the funds we are reallocating are funds that are currently spent on this program.</td>
</tr>
<tr>
<td>#2</td>
<td></td>
</tr>
<tr>
<td>IV. Federal Funding*</td>
<td>Federal funds listed are for current NIH grants that we have secured. Funding on these different grants have been approved for 4-5 year time span.</td>
</tr>
<tr>
<td>#2</td>
<td></td>
</tr>
<tr>
<td>V. Other Funding*</td>
<td>#1</td>
</tr>
<tr>
<td>------------------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>#2</td>
</tr>
</tbody>
</table>

*For more information, please refer to the accompanying Anticipated Sources of Funding: Explanatory Notes and Examples.

Explanations:
ANTICIPATED SOURCES OF FUNDING: EXPLANATORY NOTES AND EXAMPLES

I. Formula Income

A. The first two years of any new program should not draw upon formula income to pay for the program.

B. For each of years three through five, enter the smaller of:

1. the new formula income you estimate the program would generate, based on projected enrollments and formula funding rates; or

2. half of the estimated program cost for that year.

C. Because enrollments are uncertain and programs need institutional support during their start-up phase, it is the Coordinating Board’s policy to require institutions to demonstrate that they can provide:

1. sufficient funds to support all the costs of the proposed program for the first two years (when no new formula funding will be generated); and

2. half of the costs of the new program during years three through five from sources other than state formula funding.

D. When estimating new formula income, institutions should take into account the fact that students switching programs do not generate additional formula funding to the institution. For example, if a new master’s program has ten students, but five of them switched into the program from existing master’s programs at the institution, only five of the students will generate new formula income to help defray the costs of the program.

II. Other State Funding

This category could include special item funding appropriated by the legislature, or other sources of funding from the state that do not include formula-generated funds (e.g., HEAF, PUF, etc.).

III. Reallocation of Existing Resources:

If faculty in existing, previously budgeted positions are to be partially or wholly reallocated to the new program, you should explain in the text of your proposal how the institution will fulfill the current teaching obligations of those faculty and include any faculty replacement costs as program costs in the budget.

IV. Federal Funding

Only federal monies from grants or other sources currently in hand may be included. Do not include federal funding sought but not secured. If anticipated federal funding is obtained, at that time it can be substituted for funds designated in other funding categories. Make note within the text of the proposal of any anticipated federal funding.

V. Other Funding

This category could include Auxiliary Enterprises, special endowment income, or other extramural funding.