Report of the University Curriculum Committee
October 10, 2008

The University Curriculum Committee recommends approval of the following:

1. New Courses

**ARAB 301. Reading and Composition. (3-0). Credit 3.** Advanced Arabic grammar and readings of average difficulty and of different genres, including literary and journalistic texts and other culturally-enriched materials in order to develop awareness of cultural products, perspectives, and practices found in the Arab world. Prerequisites: ARAB 202; junior or senior classification or approval of instructor.

**BESC 367. U.S. Environmental Regulations. (3-0). Credit 3.** Investigation of the legal infrastructure of the U.S. associated with regulating environmental impacts; examination of major U.S. environmental statutes associated with air and water quality, toxic substances, waste and hazardous substance release, energy and natural resources; review the relationship between U.S. policy and international environmental regulations. May be taken 2 times for credit. Prerequisites: BESC 201 and junior or senior classification.

**CHIN 301. Reading and Composition. (3-0). Credit 3.** Development of advanced proficiency in reading and writing through contact with various written and spoken styles of modern Chinese as reflected in newspaper reports, radio and TV broadcasts. Prerequisites: CHIN 202; junior or senior classification or approval of instructor.

**MEEN 434. Dynamics and Modeling of Mechatronic System. (3-0). Credit 3.** Mechatronic interactions in lumped-parameter and continuum systems; review of integral and differential electromagnetic laws, including motions; lumped elements and dynamic equations of motion; linear and nonlinear actuators and transducers; field transformation and moving media; electromagnetic force densities and stress tensors. Prerequisite: MEEN 364.

**NUEN 265. Materials Science for Nuclear Energy Applications. (3-0). Credit 3.** Materials science fundamentals with an emphasis on nuclear applications; topics will include bonding, crystal structures crystalline defects, mechanical properties and radiation effects in metal, ceramic and polymer materials. Prerequisites: CHEM 102, or 104 and 114, or CHEM 107; PHYS 218.

**NUEN 465. Nuclear Materials Engineering. (3-0). Credit 3.** Explore applications of materials science principles in nuclear energy systems; includes crystal structures and defects, metallurgy, and materials thermochemistry; emphasis on nuclear fuel performance, structural material changes, and waste materials; laboratory demonstrations on materials behavior. Prerequisites: NUEN 265, MEEN 222 or equivalent and NUEN 302.

**PHYS 303. Advanced Mechanics II. (3-0). Credit 3.** Classical mechanics of particles and rigid bodies with an emphasis on Lagrangian and Hamiltonian methods; applications to chaos, scattering, coupled oscillations, and continua, including sound in fluids; mechanical implications of special relativity; introduction to drag and turbulence in fluids; introduction to elasticity in solids; Euler buckling instability. Prerequisites: PHYS 302 and 332.
PHYS 331. Theoretical Methods for Physicists I. (3-0). Credit 3. Applications involving vectors; vector and additional methods for advanced electricity and magnetism; relationship and solutions of classical wave equation, heat equation, and Schrödinger equation; harmonic motion on finite or periodic lattice and in continuum; tensor and matrix notation in classical mechanics and electricity and magnetism. Prerequisites: MATH 221 or 251 or 253 and 308; PHYS 208, 218 and 221; restricted to physics majors and minors.

PHYS 332. Theoretical Methods for Physicists II. (3-0). Credit 3. Methods to solve the important equations of theoretical physics, emphasizing the effects of boundary conditions and quantization on their solutions and restricted to the essential physical symmetries associated with free space, spheres, cylinders, and rectangles; if time permits, introduction to symmetries in physics and to asymptotic methods. Prerequisites: PHYS 309 or 222, and 331; restricted to physics majors or minors.

SCSC 201. Great Plains Settlement and Farming. (3-0). Credit 3. American Indian hunting and farming; transformation by Manifest destiny, Homestead Act, railroads, Indian Wars, U.S. Army, crops and farm families; effects of World Wars, Great Depression, Dust Bowl, irrigation, fertilization, pest controls, precision farming.

2. Change in Courses

BIOL 405. Comparative Endocrinology.

Prerequisites
From: BIOL 319; WFSC 416 or BIOL 388 or approval of instructor.
To: BIOL 213 and CHEM 227; BIOL 320 or 388 strongly recommended.


Course description
From: Introduction to the life cycles of structure, composition and viruses; their interaction with host cells; the mechanisms of pathogenicity on cellular transformation; the responses of the host to viral infection and vaccine applications; followed by an indepth study of the life cycles of the major classes of viruses and discussion of emerging viruses.
To: Structure, composition and life cycles of viruses; methods used to study viruses; their interaction with host cells; mechanisms of pathogenicity and cellular transformation; responses of the host to viral infection, and vaccine applications; in-depth study of the life cycles of the major classes of viruses and discussion of emerging viruses.

CVEN 336. Fluid Dynamics Laboratory.

Course prefix
From: CVEN 336.
To: OCEN 336.
HIST 308. History of Native Peoples in the U.S. South.

Course title
From: History of Native Peoples in the U.S. South.
To: History of American Indians in the U.S. South.

HIST 412. Soviet Union 1917-Present.

Course title
From: Soviet Union 1917-Present.

Course description
From: The Russian Revolution, consolidation of Bolshevik power; political and social evolution of the Soviet system from February 1917, through the Civil War, the power struggle among Lenin’s successors, Stalin’s industrial revolution, collectivization and terror, Khrushchev’s de-Stalinization campaign, stagnation under Brezhnev, and Gorbachev’s attempts at radical reform.

To: Political and social evaluation of the Soviet system; the Russian Revolution and consolidation of Bolshevik power; Civil War; power struggles among Lenin’s successors; Stalin’s industrial revolution, collectivization, and terror; Khrushchev’s de-Stalinization campaign, stagnation under Brezhnev; Gorbachev’s attempts at radical reform; the collapse of the Soviet Union.

LBAR 181. Freshman Honors Seminar in the Liberal Arts.

Course title
From: Freshman Honors Seminar in the Liberals Arts.
To: First-Year Seminar in the Liberal Arts.

Course description and prerequisites
From: Freshman seminar on interdisciplinary topics of interest in the humanities and social sciences with an introduction to honors study in the liberal arts. Must be taken on a satisfactory/unsatisfactory basis. Restricted to students in the College of Liberal Arts and the General Studies Program.
Prerequisite: Freshman or sophomore classification.

To: First-year seminar on interdisciplinary topics of interest in the humanities and social sciences. May be taken on a satisfactory/unsatisfactory basis. Prerequisites: Freshman or sophomore classification; approval of the dean of liberal arts.

Course description
From: The intellectual roots and characteristic values and methods of liberal arts studies with emphasis on humanities disciplines. Offered as an honors course only. Restricted to students in the College of Liberal Arts and the General Studies Program.
To: The intellectual roots and characteristic values and methods of liberal arts studies with emphasis on humanities disciplines.

LBAR 204. Foundations of the Liberal Arts: Social Sciences.

Course description
From: The intellectual roots and characteristic values and methods of liberal arts studies with emphasis on social science disciplines. Offered as an honors course only. Restricted to students in the College of Liberal Arts and the General Studies Program.
To: The intellectual roots and characteristic values and methods of liberal arts studies with emphasis on social science disciplines.

LBAR 381. Junior Seminar: Interdisciplinary Honors Seminar.

Course title
From: Junior Seminar: Interdisciplinary Honors Seminar.
To: Junior Seminar: Interdisciplinary Seminar.

Course description
From: Interdisciplinary studies in the humanities and the social sciences. Fulfills the junior seminar requirement of the Liberal Arts Honors Plan. May be repeated for credit. Restricted to students in the College of Liberal Arts and the General Studies Program.
To: Interdisciplinary studies in the humanities and the social sciences. May be repeated for credit.

OCEN 201. Introduction to Ocean Engineering.

Lecture hours, semester credit hours
From: (2-0). Credit 2.
To: (3-0). Credit 3.

Course description
From: Survey of ocean engineering; concepts and theories of wave-structure interaction; sources of technical information; coastal and ocean structures, moorings, laboratory models, underwater systems; naval architecture; recent developments in ocean engineering.
To: Survey of ocean engineering; concepts and theories of wave-structure interaction; sources of technical information; coastal and ocean structures, moorings, laboratory models; underwater systems; naval architecture; ocean instrumentation; materials and corrosion; hydrographic surveying and positioning, recent developments in ocean engineering.

**OCEN 301. Dynamics of Offshore Structures.**

**Course number**
From: OCEN 301.
To: OCEN 403.

**Course description**
From: Prediction of loads due to wind, current and waves; introduction to concepts of linear structural dynamics and to the design of ocean structures; mooring and towing analysis; fluid-structure interactions; vibration of submerged structures.
To: Prediction of loads due to wind, current and waves; introduction to concepts of linear structural dynamics and to the design of ocean structures; mooring and towing analysis; fluid-structure interactions; vibration of submerged structures; offshore pipelines; introduction to risk analysis.

**OCEN 400. Basic Coastal Engineering.**

**Course description**
From: Mechanics of wave motion; wave refraction, diffraction and reflection; wave forecasting; shore processes; planning of coastal engineering projects; design of seawalls, breakwaters and fixed offshore installations; offshore pipelines; dredging; control of oil spills in estuaries and at sea.
To: Mechanics of wave motion; wave refraction, diffraction and reflection; wave forecasting; shore processes; planning of coastal engineering projects; design of seawalls, breakwaters and fixed offshore installations; coastal pipelines; dredging; control of oil spills in estuaries and at sea; introduction to risk analysis.

**OCEN 408. Underwater and Moored System Design.**

**Course description**
From: Basic principles of thermodynamics, fluid dynamics and human respiration physiology applied to design of underwater habitats, submersibles and diving bells; breathing gas supply for diving systems; heat transfer for underwater systems; pressure vessel design; remotely operated vehicles; and design for towed and moored systems.
To: Basic principles of thermodynamics, fluid dynamics and human respiration physiology applied to design of underwater habitats, submersibles and diving bells; breathing gas supply for diving systems; heat transfer for underwater systems; pressure vessel design; remotely operated vehicles; subsea flowlines and manifold systems; and design of towed and moored systems.

**OCEN 462. Hydromechanics.**

Course number
From: OCEN 462.
To: OCEN 362.

**PHYS 302. Advanced Mechanics.**

Course title
From: Advanced Mechanics.
To: Advanced Mechanics I.

Lecture and credit hours
From: (4-0). Credit 4.
To: (3-0). Credit 3.

Course description and prerequisites
From: Motion of a particle in various force fields, systems of particles; rigid body motion, coupled oscillators and accelerated frames of reference. Prerequisites: MATH 308; registration in MATH 311; PHYS 219.
To: Classical mechanics of particles and rigid bodies, both by direct application of Newton’s equations and by Lagrangian methods; applications to gravity and other central forces, coupled oscillators, non-inertial reference frames, and the statics and dynamics of fluids with and without viscosity; introduction to statics of structures. Prerequisites: MATH 221 or 251 or 253; MATH 308; PHYS 208, 218, 222, and 331; concurrent enrollment in PHYS 332; for students with other backgrounds, approval of instructor.

**SENG 422. Fire Protection Facilities Design.**

Course description and prerequisites
From: Design of facilities from a fire protection engineering viewpoint including fire detection and fire control systems; materials, equipment, exposures, occupancies and processes; both public and industrial occupancies studied to determine fire protection design specifications. Prerequisite: SENG 322 or approval of instructor.
To: Fire protection design concepts and considerations for chemical, petrochemical, and hydrocarbon processing facilities; special attention given to fire hazard analysis, fire risk assessment, fire protection features, and emergency response; specific fire protection design considerations studied for various types of facilities and processes. Prerequisite: Senior classification or junior classification with approval of instructor.
3. Change in Curriculum

**Dwight Look College of Engineering**
Zachry Department of Civil Engineering
B.S. in Civil Engineering
4. Change in Curriculum

**Dwight Look College of Engineering**
Zachry Department of Civil Engineering
B.S. in Ocean Engineering
5. Change in Curriculum

Dwight Look College of Engineering
Department of Nuclear Engineering
B.S. in Nuclear Engineering
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. This request is submitted by the Department of: Arabic and Asian Languages

2. Course prefix, number and complete title of course: ARAB 301. Reading and Composition

3. Course description (not to exceed 50 words): Advanced Arabic grammar and readings of average difficulty and of different genres, including literary and journalistic texts and other culturally-enriched materials in order to develop awareness of cultural products, perspectives, and practices found in the Arab world

4. Prerequisite(s): ARAB 202; junior or senior classification 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. Has this course been taught as a 487/489? ☐ Yes ☑ No If yes, how many times? ______
Indicate the number of students enrolled for each academic period it was taught.

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

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

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

10. Prefix Course # Title (excluding punctuation) Reading & Composition

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<th>Admin. Unit</th>
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Approval recommended by:

Head of Department Date

Dean of College Review Committee Date

Dean of College Date

Submitted to Coordinating Board by:

Date Effective Date

Questions regarding this form should be directed to Sandra Williams at 345-8201.
Curricular Services – 11/07
ARAB 301

Reading and Composition

Instructor: Salah Ayari (ayari-s@tamu.edu)
Meetings: MW (3 hours)
Office: ACAD 1038
Telephone: 979-458-1342
Office Hours: MW 3:00 – 4:00

Required Texts:

- Al-Kitaab fii Ta'allum al-Arabiyya – Part Two
- The Concise English-Arabic Dictionary, Oxford University Press
- The Hans Wher Dictionary of Modern Written Arabic, Spoken Language Services, Inc

Recommended Texts

- Major Arab newspapers (Al-Ahram, Annahar, AshShark Alawsat)
- Al-Jazeera Net (Arabic)

Course Description

ARAB 301 is a continuation of a series of Arabic courses offered at Texas A&M University leading to this advanced level course. Students taking this course are those who have successfully completed ARAB 101, 102, 201, 202 or the equivalent, and have reached an intermediate level of proficiency in terms of their ability to read and write at the sentence/short paragraph level as well as an increased ability to conduct day-to-day conversation. This course offers readings in Arabic of average difficulty and of different genres, especially literary and journalistic texts. Preference will be given to texts that are rich in cultural meanings in order to develop awareness of cultural products, perspectives, and practices found in the Arab world. This course also offers review and the study of advanced grammar and the ability to use newly acquired grammatical structures to produce writings at the paragraph level.

Course expectations

Students taking this class are expected to attend and actively participate in class activities. There will be a homework, graded assignment for each class meeting. Readings will consist of print and non-print materials, including passages from the textbook (Al-Kitaab), articles taken from major Arabic newspapers and the Internet, among others. In addition, students will be expected to write short essays and summaries in Arabic in reaction to those readings and in which newly acquired grammar structures will be utilized. Written assignments will need to be typed in Arabic. It is a course requirement to learn how to type in Arabic.
Grading

- Quizzes: 50% (six quizzes, each worth 10% - the lowest grade on your quizzes will be dropped)
- Homework assignments: 25%
- Reaction papers: 25% (a reaction paper consists of a one-page, single-spaced, 11 point font write-up in which you explain the topic at hand and present your point of view)

Attendance and punctuality

In order to gain higher proficiency in Arabic, you need to come to class regularly and on time. If you are late to class more than five minutes, you will be marked absent. Similarly, if you leave early without an approved excuse, you will be counted absent. Any graded assignment you miss will not be made up if you do not have an excused absence. You have at your discretion 3 unexcused absences. After the third unexcused absence, each subsequent unexcused absence will result in your final grade being reduced by 1 percentage point. (No penalty will be incurred in case of a University-excused absence). If you have 10 unexcused absences, you will not pass the course.

Excused absences

Excused absences (see http://student-rules.tamu.edu/rule7.htm) are legitimate but must always be documented. Please provide the explanation of student absence form as outlined in the Texas A&M student attendance rules (see http://shstamu.edu/forms/Explanatory%20Statement%20for%20Absence%20from%20Class.pdf). It is your responsibility to meet with me or with your classmates to see what you have missed.

Homework

Class time will not be enough to meet course objectives. You are therefore expected to put in enough time outside of class to complete your homework assignments, including reading the assigned materials, listening to and understanding the stories in the DVDs. Homework assignments should be completed before you come to class. If you do your homework in class, it will not count (even though I may take it from you). Incomplete and late homework will not count even though it may be collected.

Academic Integrity

You are expected to be aware of the Aggie Honor Code and the Honor Council Rules and Procedures, stating that “an Aggie does not lie, cheat, or steal, or tolerate those who do” (see http://www.tamu.edu/aggiehonor).

Americans with Disabilities Act

The American 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 Office of Support Services for Students with Disabilities in B-118 Cain Hall (845-1637).
COURSE OUTLINE

Weeks 1, 2, 3 (date): lesson 1

- Traveling – geography of North Africa, the Middle East and Central Asia
- Readings from *ibn Batuta's* literature (descriptive writing)
- Grammar: types of verbs
- Culture: A historic figure (*ibn Batuta*); facts about some historic Arab cities
- Writing: Describing a trip; reaction paper to *ibn Batuta*’s international trip

Weeks 4 & 5 (date): Lesson 2

- Holidays and celebration in the Arab World
- Readings: How do people celebrate Islamic and Christian holidays in the Arab World?
- Grammar: active participle & passive participle
- Culture: Religious diversity in the Arab World; weddings; holiday songs
- Writing: Describing an American wedding; reaction paper about holidays in the Arab World

Weeks 6, 7, 8 (date): Lesson 3

- Expressing opinions: Arab newspapers
- Listening to debates (excerpts from Al-Jazeera)
- History: Arab newspapers and Arab reformists (Refa’a Tahtawi, Mohamed Ali)
- Grammar: Passive & active voice; idhafa structure revisited
- Culture: Arab women’s role in written media
- Reaction paper about a topic read in an Arabic newspaper

Weeks 9, 10, 11 (date): Lesson 4

- Role of higher education in the Arab World
- Readings from modern Arab literature
- Arab reformist (Mohamed Abdu)
- Grammar: types of sentences – broken plural – dual
- Culture: history of the Arabian Peninsula
- Reaction paper about higher education in the US and that in the Arab World

Weeks 12, 13, 14 (date): Lesson 5

- Readings: Modern writers and the Arabic novel (Novelist Tawfīq Al-Hakeem)
- The Arab League
- Grammar: comparative and superlative
- Writing a biography
- Research paper about the Arab League (see website of Model Arab League)
- Projects due
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. This request is submitted by the Department of Plant Pathology & Microbiology

2. Course prefix, number and complete title of course: BESC 367 US Environmental Regulations

3. Course description (not to exceed 50 words): Investigation of the legal infrastructure of the U.S. associated with regulating environmental impacts; examination of major U.S. environmental statutes associated with air and water quality, toxic substances, waste and hazardous substance release, energy and natural resources; review the relationship between U.S. policy and international environmental regulations.

4. Prerequisite(s): BESC 201 & Junior or Senior Classification

Cross-listed with: N/A

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. Has this course been taught as a 489/689? □ Yes □ No If yes, how many times? ______

Indicate the number of students enrolled for each academic period it was taught. 19 - 2007C & 24 - 2008C

8. This course will be:

a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)

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

   yes - BESC and ENST

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

10. Prefix Course # Title (excluding punctuation): BESC 367 US ENVIRONMENTAL REGULATIONS

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Approval recommended by:

Head of Department: [Signature] 8/29/08
Chair, College Review Committee: [Signature] 9/1/08
Dean of College: [Signature] 11/9/2008

Submitted to Coordinating Board by:

Dean of College: [Signature] [Date]

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
Syllabus
BESC 367 U.S. Environmental Regulations

Time: 11:30-12:20 pm, M,W,F
Location: Rm. 208 L.F. Peterson

Instructor: Dr. Heather H. Wilkinson
            321A L.F. Peterson Building
            845-1491
            h-wilkinson@tamu.edu
Office Hours: 3-4pm Wednesdays; or by appointment

Description
Investigation of the legal infrastructure of the U.S. associated with regulating environmental impacts; examination of major U.S. environmental statutes associated with air and water quality, toxic substances, waste and hazardous substance release, energy and natural resources; review the relationship between U.S. policy and international environmental regulations.

Prerequisites
BESC 201 and Junior or Senior classification

Textbook
ISBN-10: 0136142168

Learning Outcomes
- Understand the cycle by which policy is established
- Follow the path of a bill through the legislature
- Compare civil, criminal and administrative law
- Define legal terminology necessary for comprehension of particular regulations
- Judge the effectiveness of litigation in environmental issues
- Identify and describe the major regulations associated with air quality, water quality, controlling toxic substances, waste management and hazardous releases, energy and natural resources
- Analyze court cases by breaking down the arguments on either side of the issue
- Consider the reasons why international treaties and global institutions have or have not been successful

Grading
There will be a mid-term exam (35%) and a final exam (35%). The exams will be based on material from the text and class lectures. Make-up exams require evidence of an excused absence (http://student-rules.tamu.edu/rule7.htm). Attendance and participation will account for 5% of your grade. (Each unexcused absence results in -0.5% off your grade (up to 3.0%: 6 absences). Participation will be the other 2%). An annotated bibliography will be worth 20%.
Late annotated bibliographies (without permission of the instructor) will lose 1 point (out of 20) per day. A detailed description of the annotated bibliography will be provided during class.

### Schedule

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<th>Date</th>
<th>Day</th>
<th>Topic</th>
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<td>8/25/08</td>
<td>Monday</td>
<td>Course Introduction</td>
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<td>8/27/08</td>
<td>Wednesday</td>
<td>The American Legal System: The Source of Environmental Law</td>
<td>Chapter 1</td>
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<td>9/3/08</td>
<td>Wednesday</td>
<td>The Litigation Process and Other Tools for Resolving Environmental Issues</td>
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<td>9/17/08</td>
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<td>An Introduction to Environmental Law and Policy</td>
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<td><strong>Mid-Term Exam (chapters 1-6)</strong></td>
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<td>Controlling Toxic Substances</td>
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<td>Wednesday</td>
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<tr>
<td>11/7/08</td>
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<td>11/10/08</td>
<td>Monday</td>
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<tr>
<td>11/12/08</td>
<td>Wednesday</td>
<td>International Environmental Law</td>
<td>Chapter 11</td>
</tr>
<tr>
<td>11/14/08</td>
<td>Friday</td>
<td></td>
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<tr>
<td>11/21/08</td>
<td>Friday</td>
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<td>11/24/08</td>
<td>Monday</td>
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<td>11/26/08</td>
<td>Wednesday</td>
<td>no class; annotated bibliography due</td>
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<td>Friday</td>
<td>Thanksgiving</td>
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<td>12/1/08</td>
<td>redefined Friday</td>
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<td>12/10/08</td>
<td>Wednesday</td>
<td><strong>Final Exam 10:30-12:30</strong></td>
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</table>
Americans with Disabilities Act (ADA) Policy Statement

The Americans with Disabilities Act (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, Services for Students with Disabilities in Room B118 of Cain Hall or call 845-1637.

Academic Integrity Statement
Aggie Honor Code “An Aggie does not lie, cheat, or steal or tolerate those who do.”
Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: www.tamu.edu/aggiehonor/
Re: new course number

From: f-smeins@tamu.edu
To: c-kenerley@neo.tamu.edu

Chuck,

I don't believe there should be any significant conflict with my RENR 470 course.

My course is about 40% NEPA and the NEPA process and the remainder deals more specifically with waters of the U.S., wetlands, endangered species, cultural/historical, CAFOs and other land related issues and the primary focus is on regulations and the permitting process as they relate to making things work in the real world. Your course would seem to be complimentary to mine.

Fred

>>> "Kenerley, Charles M" <c-kenerley@neo.tamu.edu> 8/20/2008 3:41 PM >>>
Hello Fred,

For many years, David Appel taught an environmental regulations course in our Department (switched between BESC 489 and FLPA 489). In the last two years, Heather Wilkinson took over the course, and now we really need to get it numbered as a BESC course. I spoke to Bob Knight (head of the COALS Undergraduate Program Council) about submitting the course. He recommended that I check with you for RENR 470 and Ron Kaiser for RENR 420 to assure that BESC 367 is sufficiently different from these courses. I am attaching a syllabus for the proposed BESC 367. While there may be some overlap, I think BESC 367 is a broad survey of many laws whereas RENR 420 is more specific. Ron has given his ok for us to continue pursuit of a number. We will continue to recommend that our students interested in a management option to take RENR 420 and 470. Please let me and Bob Knight know if you feel we can go forward with BESC 367. Bob needs to be in the loop as I am trying to get BESC 367 on the 11 Sept UFC meeting agenda. If you would prefer that either I or Heather contact you to chat about the course, just let me know.

Cheers,

Chuck Kenerley
Associate Dept. Head
Re: BESC syllabus

From: rkaiser@ag.tamu.edu
To: c-kenerley@neo.tamu.edu; bob-knight@tamu.edu
Cc: GEllis@ag.tamu.edu

Hi Bob:

I have reviewed the syllabus for proposed BESC 367 relative to it’s overlap with RENR 420 Natural Resources Law and while there is some overlap on learning objectives and course content I have no objections to the course. As I understand the BESC 367 course, there is more of a focus on administrative rules, which I do not cover, and there is substantial coverage on Air Quality, Toxic Waste, Energy, Solid Waste Management which I don’t cover in RENR 420.

I am supportive of the BESC 367 course and endorse its approval.

Ron

Ronald Kaiser
Texas A&M University
Chair, Graduate Water Program
Professor in Department of Recreation, Park & Tourism Sciences. TAMU 2261
College Station, Texas 77843
Voice: (979) 845-5303 Fax: (979) 845-0446
Email: rkaiser@tamu.edu
WEBSITES: http://waterprogram.tamu.edu
http://texaswater.tamu.edu
http://rakwater.tamu.edu

>>> "Kenerley, Charles M" <c-kenerley@neo.tamu.edu> 8/15/2008 11:54 AM >>>
Hello Ron,

I have attached the syllabus for our proposed BESC 367. I think it is much broader than what you teach in 420. For our kids that are seeking more of a environmental policy direction, we would have them take 367 and 420 as well. Thanks for your support.

Cheers,
Chuck
1. This request is submitted by the Department of Arabic and Asian Languages

2. Course prefix, number and complete title of course: CHIN 301. Reading and Composition

3. Course description (not to exceed 50 words): Development of advanced proficiency in reading and writing through contact with various written and spoken styles of modern Chinese as reflected in newspaper reports, radio and TV broadcasts

4. Prerequisite(s): CHIN 202; junior or senior classification or approval of instructor

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. Has this course been taught as 489/689? [ ] Yes [x] No If yes, how many times? _____

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

9. Undergraduate general academic

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

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Course #</th>
<th>Title (excluding punctuation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHIN</td>
<td>301</td>
<td>READING &amp; COMPOSITION</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lect.</th>
<th>Lab</th>
<th>SCH</th>
<th>CIP and Fund Code</th>
<th>Admin. Unit</th>
<th>Acad. Year</th>
<th>FICE Code</th>
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<tbody>
<tr>
<td>0</td>
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<td>01</td>
<td>11735</td>
<td>09 - 10</td>
<td>003632</td>
</tr>
</tbody>
</table>

Approval recommended by:

Head of Department: [Signature] 8/21/08

Chair, College Review Committee: [Signature] 9/24/08

Dean of College: [Signature] 9/24/08

Submitted to Coordinating Board by:

Associate Director, Curricular Services: [Signature] Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.

Curricular Services – 11/07
CHIN 301: Chinese Reading and Composition

Fall, 2009

Instructor: Weidong Shi
Office: ACDA 103AB
Tel: 979-862-4878
E-mail: shiweidong@tamu.edu
Office Hours: M,W 2:00pm-3:00pm

- **Textbook**

- **prerequisite**
  Junior or senior classification or approval of instructor.

- **Course Description and Objectives**
  This 3-credit course is designed for students who have completed CHIN 202 or equivalent. The class is conducted mainly in Chinese. Students will learn 400 new characters, 800 new vocabulary words and 100 key sentences in this course. The goal of this course is to help students develop advanced proficiency in reading, listening, speaking, and writing, to solidify and further their communicative ability in Chinese through contact with various written and spoken styles of modern Chinese on cultural topics, newspaper reports, radio, and TV broadcasts.

- **Course Requirements**
  Except in the case of university-excused absence, students are required to attend ALL classes and prepare for EVERY class. Students in the class need to be ready to make a commitment of spending at least 6 hours per week studying outside of class, including previewing, preparing, and reviewing assignments. Group projects and other assigned teamwork will require additional time for collaboration. Daily preparation is critical to this course and students’ preparation efforts will be evaluated and graded EVERY CLASS for In-class Performance. Strong motivation and daily preparation will ensure a successful learning experience in this class.

- **Grading**
  Grade points are based on the following:
  
<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class participation and preparation</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Quiz</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm</td>
<td>25%</td>
</tr>
<tr>
<td>Final</td>
<td>25%</td>
</tr>
</tbody>
</table>

  Grading scale is as followed:
  
<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
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<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>0-59%</td>
</tr>
</tbody>
</table>
- **Attendance and class participation:**
  
  Please see [http://student-rules.tamu.edu/rule7.htm](http://student-rules.tamu.edu/rule7.htm) for current policy on university-excused absences.
  
  ★ Students are expected not only to speak up when called on but to actively participate in class and to communicate in Chinese whenever possible with their instructor and with classmates. Students' efforts in expressing themselves in Chinese will be evaluated as part of their class participation grade.
  
  ★ You are expected to be in class on time every day unless an emergency prevents. Being 15 minutes late (without a valid excuse) counts as an absence.
  
  ★ You are allowed TWO unexcused absences per semester. THREE or more unexcused absence will adversely affect your final grade. THREE unexcused absences will prevent you from receiving an A, SIX will prevent you from receiving a B, and TEN will prevent you from receiving a C. Whenever possible, ask permission in advance for classes you will have to miss and make appropriate arrangements for missed work. In case of illness- or injury-related absences, only those who provide documentation will be excused.
  
  ★ If you know that you will miss a class, contact your instructor before class to facilitate any make-up arrangement. You or a friend can stop by the office to pick up handouts that you missed.
  
  ★ It is your responsibility to obtain class notes and prepare any work assigned or due during the period of your absence. If you are not able to reach the instructor to check for missed work, contact a classmate to obtain the information you need.

---

- **Homework:**

  All homework should be completed before coming to class. If you have to miss a class when an assignment is due, ask someone to bring it to the class. You can also drop it off at the instructor's office. Late homework turned in within 48 hours after the due date will be accepted and corrected, but penalized a half grade. After 48 hours, no homework will be accepted and a grade of zero will be assigned. No penalty will be assessed for late homework in case of a university-excused absence.

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- **Quizzes:**

  Quizzes will be given to ensure that everyone keeps up with the material. As such, they will cover only information already presented in class.

- **Mid-term and Final Examination:**

  A review lesson will be given before each exam. The exam will contain both oral and written parts. The oral part may take the form of personal interviews or role-playing. The written part may include reading comprehension, character writing, translations, filling the blanks, answering questions in Chinese, etc. Changes will be made whenever it’s necessary.

- **Make-up Policy**

  In case of officially documented medical emergencies or unplanned incidences, please contact your instructor for make-up work as soon as possible. Make-up tests must be
arranged with the instructor in advance of the scheduled test time. All make-ups must be taken before graded tests are returned to the class except in the case of university-excused absences. Please see http://student-rules.tamu.edu/rule7.htm for current policy on university-excused absences. Make-up tests are granted only at the discretion of the instructor except in case of university-excused absences.

■ The 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 the Office of Support Services for Students with Disabilities B-118 Cain Hall (845-1637).

■ Academic Integrity
"An Aggie does not lie, cheat or steal, or tolerate those who do." As commonly defined, plagiarism consists of passing off as one’s ideas, words, writings, etc. which belong to another. In accordance with the definition, you are committing plagiarism if you copy the work of another 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 latest issue of the Texas A&M University Regulations, under section “Scholastic Dishonesty.” Student rules are available online at http://student-rules.tamu.edu. Check with the Aggie Honor System Office at http://www.tamu.edu/aggiehonor.

■ Useful Resources

Dictionary

Books on China
3. Lonely Planet: China

Classical Chinese Literary Works
1. The Analects, Confucius
2. The Art of War, Sunzi
3. Dao De Jing, Laozi
4. A Dream of Red Mansions, Cao Xueqin
5. Romance of the Three Kingdoms, Luo Guanzhong

**Documentaries**
1. BBC Wild China.
2. PBS China From The Inside.

**Learning Chinese Online**
2. [http://www.csulb.edu/~txie/online.htm](http://www.csulb.edu/~txie/online.htm) (Learning Chinese Online)
6. [http://zhongwen.com](http://zhongwen.com) (Chinese Characters and Culture)
# Syllabus

<table>
<thead>
<tr>
<th>Time</th>
<th>Lesson</th>
<th>Topic</th>
<th>Grammar</th>
<th>Culture</th>
</tr>
</thead>
</table>
| 8/24-9/2 | 27. 入乡随俗 | Expressing one's opinion / giving an example | 1. “把” sentence(3) 把+O+V+到/在/成/  
2. adverbs “最” and “更”  
3. the construction”一边, 一边”  
4. the construction”来+NP  
5. ”the construction”对……来说” | When in China, do as Chinese do |
| 9/3-9/11 | 28. 礼轻情义重 | Presenting and appreciating a gift/comparing/asking in retort/worrying about sth. | 1. using “有/没有” to express comparisons  
2. rhetorical questions “不是……吗”  
3. sentences containing a series of verbs.  
4. 上、开 as the resulting complements | Gift exchanging in China |
| 9/11 | Quiz one | 27 课, 28 课 |
| 9/14-9/22 | 29. 请多提意见 | Describing things/emphasizing an affirmation / expressing modesty | 1. the structural particle“地”  
2. sentences indicating existence or emergence (2)  
3. the reduplication of adjective  
4. “把” sentence(4) | Chinese modesty and humility |
| 9/23-10/2 | 30. 他们是练太极剑的 | Indicating changes / making a summary/describing activities | 1. sentences indicating existence or emergence (3).  
2. using “了” to indicate a change of situation(2).  
3. the complement of state(2).  
4. the construction “又…又”. | Recreational activities in China |
| 10/2 | Quiz two | 29 课, 30 课 |
| 10/5-10/13 | 31. 中国人叫她“母亲河” | giving encouragement / Asking about something /describing a scenery | 1. approximate numbers.  
2. pivotal sentences(2).  
3. the construction “只要…就”.  
4. enumeration and paraphrasing. | Yellow river, Yangzi River, Mount Everest and Mount Huang |
<table>
<thead>
<tr>
<th>10/13</th>
<th>Midterm-exam</th>
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</thead>
<tbody>
<tr>
<td>10/14-10/23</td>
<td>32. 这样的问题也不能问了  Making a guess/ giving a vague response/ explaining</td>
</tr>
<tr>
<td>10/14-10/23</td>
<td>Grammar Review 1. structural particles“的，得，地“. 2. Summary of the “把” sentence. 3. the adverbs “就” and “还”</td>
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<tr>
<td>10/26-11/3</td>
<td>Chinese view on “privacy”</td>
</tr>
<tr>
<td>10/26-11/3</td>
<td>33. 保护环境就是保护我们自己.  Indicating a possibility/expressing concern/conversational openers</td>
</tr>
<tr>
<td>10/26-11/3</td>
<td>1. potential complement(1). 2. extended use of “出来”。 3. the reduplication of nouns, measure words, and numeral-measure words phrase. 4. the construction of “既…又”</td>
</tr>
<tr>
<td>11/3</td>
<td>Environmental issues in China</td>
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</tbody>
</table>

| 11/3 | Quiz Three  32 课、33 课 |
| 11/4-11/13 | 34. 神女峰的传说  Stressing a point/telling a story |
| 11/4-11/13 | 1. the subjectless sentence. 2. the construction of ”连…”都/也“. 3. 者 and 住 as the resultative complements. |
| 11/16-11/23 | Reproaching and questioning/ Refusing/making an explanation |
| 11/16-11/23 | 1. interrogative pronouns of general denotation. 2. fractions, percentages and multiples. 3. the construction of “一…也/都+没/不”. 4. the construction of “就是…也” |
| 11/23 | Generation gap |

| 11/23 | Quiz Four  34 课、35 课 |
| 11/30-12/8 | 36. 北京热起来了  Talking about the climate/making a suggestion/expressing possibility |
| 11/30-12/8 | 1. potential complement(2) 2. extended use of “起来” 3. the construction of “一…就”. 4. the construction of “除了…以外，还/也/都…” |
| 12/16 | Climate of China |

* Note: Changes to the syllabus will be made whenever necessary.
Texas A&M University  
Departmental Request for a New Course
Undergraduate ♦ Graduate ♦ Professional  
Submit original form and attach a course syllabus.

1. This request is submitted by the Department of **Mechanical Engineering**

2. Course prefix, number and complete title of course: **MEEN 434 - Dynamics and Modeling of Mechatronic Systems**

3. Course description (not more than 50 words): Mechatronic interactions in lumped-parameter and continuum systems, Review of integral and differential electromagnetic laws, including motions, Lumped elements and dynamic equations of motion, Linear and nonlinear actuators and transducers, Field transformation and moving media, Electromagnetic force densities and stress tensors.

4. Prerequisite(s) **MEEN 364**  
   Cross-listed with
   Cross-listed course 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 the course be repeated within the same semester/term? ☑ Yes ☐ No

7. Has this course been taught as a 289/489/689? ☑ Yes ☐ No  
   If yes, how many times? 2  
   Indicate the number of students enrolled for each academic period it was taught. 2/3 -Stacked with MEEN 634

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

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

   B.S. in engineering - Stacked with MEEN 634

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

10. **Prefix** | **Course #** | **Title (excluding punctuation)** | **Lect.** | **Lab** | **SCH** | **Subject Matter Content Code** | **Admin. Unit** | **Acad. Year** | **FICE Code** | **Level**

    MEEN 434 | DYN & MOD MECH TRO SYS |

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

**Approval recommended by:**

Head of Department: **Kraig A. Lef**  
Date: 7/28/08

Chair, College Review Committee:  
Date: 9/16-08

Head of Department (if cross-listed course):  
Date:  

Dean of College:  
Date: 9/16-08

**Submitted to Coordinating Board by:**

Director of Academic Support Services:  
Date:  
Effective Date:  

Questions regarding this form should be directed to Sandra Williams at 845-8836.  
OAR/AS – 04/07
MEEN 434 - Dynamics and Modeling of Mechatronic Systems

Mechatronic interactions in lumped-parameter and continuum systems. Review of integral and differential electromagnetic laws, including motions. Lumped elements and dynamic equations of motion. Linear and nonlinear actuators and transducers. Field transformation and moving media. Electromagnetic force densities and stress tensors. Three credit hours (3-0)

Instructor:

Won-jong Kim, Ph.D.
Associate Professor & Holder of the
Dietz Career Development Professorship II
221 Engineering/Physics Building
845-3645, phone
wjkim@tamu.edu, e-mail
http://alum.mit.edu/www/wjkim, webpage

Lectures:

MWF 10:20 AM–11:10 PM at 205 ENPH (T)

Office Hours:

MW 12:20 PM–2:00 PM at 221 EPB or 205 ENPH (T), or by appointments

Text (required):


References:


Course Objectives:

• Understand dynamics and modeling of lumped-parameter and continuum electromechanical systems.
• Analyze and design linear and nonlinear actuators and transducers as crucial elements in electromechanical systems.
Prerequisites:

- Dynamic systems and controls (MEEN 364)

Grading:

- Two in-class quizzes for 50% total
- Final examination for 35%
- Homework for 10% total
- Class participation 5%

The final exam will be held from ?:00 to ?:00 AM on ??? day, December ?, 2008. In-class quiz dates are to be announced. A formula sheet will be provided for each exam. There will be nine homework sets. You will be usually given 10 days to work on each homework. **No late homework will be accepted.** Class participation includes participation in discussion in class and the instructor’s office hours, volunteering to answer/solve problems, and asking intelligent questions to enhance the class’s understanding of the course material. This class participation will not be quantified, but affect the final grades for those on the grade borderlines.

Upon successful completion of this course, you will be able to:

- Understand and model mechanical-electrical interactions with dynamics and electromagnetics principles using lumped elements.
- Determine force using force-energy and force-coenergy relations in lumped electromechanical systems.
- Analyze and model magnetic circuits. This will enable you to design linear and nonlinear actuators including voice-coil actuators, electromagnets, etc.
- Analyze and design rotary and linear DC and AC motors.
- Understand dynamics of mechatronic systems.
- Calculate force using Maxwell stress tensor in stationary and moving continuum media.
- Understand dynamics of electromechanical continua, and derive equations of motion of magnetizable elastic strings/membranes under the influence of time-varying field.

Applications:

Conventional linear/rotary motor design/analysis, sensor/actuator modeling and characterization, magnetic bearing/levitation, electromagnetic launcher, specialty (piezoelectric, magnetostrictive, magnetoelastic, electrostatic, electrochemical, ionic etc.) actuators and sensors, and so forth.

ADA Statement:

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

Aggie Honor Code: “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 (Student Rule 20. Scholastic Dishonesty, http://student-rules.tamu.edu). New procedures and policies have been adopted effective September 1, 2004. Details are available through the Office of the Aggie Honor System (http://www.tamu.edu/aggiehonor/). An excerpt from the Philosophy & Rationale section states: “Apathy or acquiescence in the presence of academic dishonesty is not a neutral act -- failure to confront and deter it will reinforce, perpetuate, and enlarge the scope of such misconduct. Academic dishonesty is the most corrosive force in the academic life of a university.”

Following is a tentative schedule. The pace will be adjusted as the semester progresses.

Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Overview of the course, review of vector calculus, review of electric field theory</td>
</tr>
<tr>
<td>2</td>
<td>Review of magnetic field theory, quasistatic approximations</td>
</tr>
<tr>
<td>3</td>
<td>Constitutive laws, energy conservation, force-energy relations</td>
</tr>
<tr>
<td>4</td>
<td>Coenergy, force-coenergy relations, magnetic circuits</td>
</tr>
<tr>
<td>5</td>
<td>Energy conversion cycles, systems with multiple terminals, variable-reluctance actuators</td>
</tr>
<tr>
<td>6</td>
<td>Permanent magnets, coupled mechanical and electromagnetic systems</td>
</tr>
<tr>
<td>7</td>
<td>Static equilibria, linearization about static equilibria</td>
</tr>
<tr>
<td>8</td>
<td>Dynamic equilibria and linearized dynamics, active stabilization, magnetic levitation example</td>
</tr>
<tr>
<td>9</td>
<td>Field transformations, conduction conservative laws, field transformation examples</td>
</tr>
<tr>
<td>10</td>
<td>DC Machines, magnetic diffusion</td>
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<tr>
<td>11</td>
<td>Magnetic diffusion in sinusoidal steady state and in convective media, charge relaxation</td>
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<tr>
<td>12</td>
<td>Quasistatic stress tensor, stress tensor examples</td>
</tr>
<tr>
<td>13</td>
<td>One-dimensional elastic continua, dynamics of electromechanical continua</td>
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<tr>
<td>14</td>
<td>Electromechanical dynamics with convection, introduction to continuum electromechanics</td>
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</table>
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. This request is submitted by the Department of Nuclear Engineering
2. Course prefix, number and complete title of course: NUEN 265 Materials Science for Nuclear Energy Applications

3. Course description (not more than 50 words): Materials science fundamentals with an emphasis on nuclear applications; topics will include bonding, crystal structures crystalline defects, mechanical properties and radiation effects in metal, ceramic and polymer materials.

4. Prerequisite(s) ____________ Cross-listed with N/A
   CHEM 102, or 104 and 114, or CHEM 107; PHYS 218
   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 the course be repeated within the same semester/term? ☐ Yes ☑ No

7. Has this course been taught as a 289/489/689? ☐ Yes ☑ No If yes, how many times? _______ Indicate the number of students enrolled for each academic period it was taught. (Offered as a 289 in the Fall 2008)

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

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

<table>
<thead>
<tr>
<th>Prefix</th>
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<th>Title (excluding punctuation)</th>
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<tr>
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<td>265</td>
<td>MATL SCIENCE NUCLEAR ENERGY</td>
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<th>Admin. Unit</th>
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Approval recommended by:
Head of Department ______________________ Date 8/18/08
Head of Department (if cross-listed course) ______________________ Date

Chair, College Review Committee ______________________ Date 9-16-08
Dean of College ______________________ Date 9-16-08

Submitted to Coordinating Board by:
Dean of College ______________________ Date

Director of Academic Support Services ______________________ Date

Questions regarding this form should be directed to Sandra Williams at 845-8836.
OAR/AS -- 04/07

CURRICULAR SERVICES
NUEN 265: Materials Science for Nuclear Energy Applications

Instructor: Sean M. McDeavitt
ZACHRY 122F
Email: mcdeavitt@tamu.edu

Course Description: Materials science fundamentals with an emphasis on nuclear applications; topics include bonding, crystal structures, crystalline defects, mechanical properties and radiation effects in metal, ceramic and polymer materials.

Course Web Page: WebCT
(Lectures, HW information, selected readings and grades posted here)

Schedule: Lecture MWF TBD
Instructor Office Hours: TBD
Open door policy (better check by email)

Prerequisite: CHEM 102, or 104 and 114, or CHEM 107; PHYS 218


Reference Texts:


References: Online Table of the Nuclides, http://atom.kaeri.re.kr/
Online Periodic Table, http://www.webelements.com/
Grading: The course grade will be based upon homework assignments, two in class exams and a final exam. The first two exams will be taken in class and the last exam will be taken during the scheduled final exam period.

- Homework 20%
- Exam I 25%
- Exam II 25%
- Final Exam 30%

Grading is expected to be on a straight 90/80/70/60 scale.

Exams: Exams may consist of true/false questions, multiple choice questions, short answer problems, and problem solving calculations.

Homework: Homework will be assigned in-class with a 1-week turnaround time. Late papers will be accepted for one week with a 10% penalty unless prior arrangements are made with the instructor or the lateness results from a reason that is excused under university policy.

Homework solutions will be posted approximately one week after the due date. Homework will not be accepted for credit after the solutions are posted on WebCT.

Guidelines for homework preparation:

- Show all work, not just the final answer.
- Present your work neatly (extremely “messy” work will not be graded)
- Staple all pages together (2% penalty)

Scholastic Dishonesty and the Aggie Honor Code: "An Aggie does not lie, cheat, or steal or tolerate those who do." The Code forbids the following:

- **Cheating:** Attempting to use unauthorized materials, information, notes, study aids or other devices or materials in any academic exercise.
- **Fabrication:** Making up data or results; submitting fabricated documents.
- **Falsification:** Manipulating results such that research is not accurately represented in the research record.
- **Multiple Submissions:** Submitting substantial portions of the same work (including oral reports) for credit more than once without authorization from instructors.
- **Plagiarism:** Using another person’s ideas, work, processes, results, writings, words, etc. without giving appropriate credit.
- **Complicity:** Intentionally or knowingly helping, or attempting to help, another to commit an act of academic dishonesty.

Violation of the Aggie Honor Code may result in a 0 for the assignment or exam, failure of the course, and reports Aggie Honor System Office.

**Professional Behavior:** An important attribute of your professional development is that you act and speak in a manner that will not offend others giving particular care to diversity issues.

**Americans with Disabilities Act (ADA):** The Americans with Disabilities Act (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 tell your instructor or contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall, or call 845-1637.

**Religious Holidays:** If you are a member of a religious faith that has one or more holidays which require you to be absent from any class listed above, please tell your instructor at least two weeks in advance of your absence and make arrangements to make-up the class.

**Copyrights:** The handouts used in this course are copyrighted. "Handouts," refers to all materials generated for this class, which include but are not limited to syllabi, lecture notes, problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless the author expressly grants permission.
DRAFT List of Course Topics

1. Materials Science in Nuclear Engineering
2. Atomic Structure and Chemical Bonding
3. Crystal lattices and unit cells
4. Complex crystal structures, stacking of atomic planes, Miller indices
5. Ceramic structures
6. Crystalline defects – Thermal vibrations
7. Crystalline defects – Point defects
8. Crystalline defects – Alloying
9. Crystalline defects – Dislocations
10. Crystalline defects – Grain boundaries and surfaces
11. Dislocation theory – physical metallurgy
12. Dislocation theory – mechanical properties
13. Solid state diffusion – physical science
14. Solid state diffusion – engineering application
15. Solid state diffusion – advanced modeling (nuclear fuel behavior)
16. Phase diagrams – basics
17. Phase diagrams – the Fe-C system
18. Phase diagrams – nuclear energy applications
19. Phase transformation – science
20. Temperature-time-Transformation diagrams
21. Stainless Steel
22. Ferrous and non-ferrous alloys
23. Mechanical properties – elasticity theory
24. Mechanical properties – elasticity theory (3-D)
25. Mechanical properties – elasticity theory (Tresca and VonMises yield criteria)
26. Mechanical properties – plasticity (dislocations, resolved shear stress, stress transformations)
27. Solution strengthening
28. Anelasticity, anisotropy, and dislocation behavior in deformation
29. Failure mechanism overview
30. Fracture and fatigue
31. Creep
32. Particle-matter interactions (pre-radiation damage)
33. Radiation effects in solids
34. Radiation damage introduction
35. Nuclear fuel development
36. Roadmap for reactor materials and radiation effects
Texas A&M University

Departmental Request for a New Course
Undergraduate • Graduate • Professional

• Submit original form and attach a course syllabus.

1. This request is submitted by the Department of Nuclear Engineering

2. Course prefix, number and complete title of course: NUEN 465 Nuclear Materials Engineering

3. Course description (not more than 50 words): Explore applications of materials science principles in nuclear energy systems; includes crystal structures and defects, metallurgy, and materials thermochemistry; emphasis on nuclear fuel performance, structural material changes, and waste materials; laboratory demonstrations on materials behavior.

4. Prerequisite(s) Cross-listed 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 the course be repeated within the same semester/term? □ Yes ☑ No

7. Has this course been taught as a 289/489/689? ☑ Yes □ No If yes, how many times? 2 Indicate the number of students enrolled for each academic period it was taught. Spring 2007 (9) and Spring 2008 (18)

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

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

10. Prefix Course # Title (excluding punctuation) 
    NUEN 465 Nuclear Materials Eng r
    Lec. Lab SCH Subject Matter Content Code Admin. Unit Acad. Year FICE Code
    0 3 0 0 0 3 1 4 2 3 0 1 0 0 6 2 0 9 0 9 - 1 0 0 0 3 6 3 2
    Level 4

Approval recommended by:

Head of Department Date

Chair, College Review Committee Date

Head of Department (if cross-listed course) Date

Dean of College Date

Submitted to Coordinating Board by:

Director of Academic Support Services Date

Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8836.
OAR/AS – 04/07

SEP 26 2008
NUEN 465: Nuclear Materials Engineering

Instructor: Sean M. McDeavitt  
Office: ZACH 122F  
Email: mcdeavitt@tamu.edu

Course Description: This course will review materials science principles and explore their application in nuclear energy systems; this will include crystal structures and defects, metallurgy, and materials thermochemistry. Special emphasis will focus on nuclear fuel performance, structural material changes, and waste materials. Laboratory demonstrations will demonstrate materials behavior.

Prerequisites: NUEN 265 or MEEN 222 or equivalent and NUEN 302

Reference Texts:  

Course Web Page: WebCT  
(Lectures, HW information, selected readings and grades posted here)

Schedule: Lecture TBD  
Office Hours: open door policy and by appointment

References: Online Periodic Table, http://www.webelements.com/  
Online Table of the Nuclides, http://atom.kaeri.re.kr/
Course Policies:

Grading: The course grade will be based upon homework assignments and three exams. The first two exams will be taken in class and the last exam will be taken during the scheduled final exam period.

- Homework 10%
- Exam I 30%
- Exam II 30%
- Exam III 30%

Grading is expected to be on a straight 90/80/70/60 scale.

Exams: Exams may consist of true/false questions, multiple choice questions, short answer problems, and problem solving calculations.

Homework: Homework will be assigned in-class with a 1-week turnaround time. Late papers will be accepted for one week with a 10% penalty unless prior arrangements are made with the instructor or the lateness results from a reason that is excused under university policy.

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- Staple all pages together (2% penalty)

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- **Complicity**: Intentionally or knowingly helping, or attempting to help, another to commit an act of academic dishonesty.

If you have questions regarding scholastic dishonesty and the Aggie Honor Code, please visit [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor) for the Honor Council Rules and Procedures, and [http://student-rules.tamu.edu](http://student-rules.tamu.edu) for the Texas A&M University Student Rules.
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List of Course Topics

1. Nuclear Materials Introduction
2. Review of Crystal Structures and Crystallography
3. Review of Crystal Defects and Diffusion
4. Materials Thermochemistry (Application of the Laws)
5. Materials Thermochemistry (Free Energy and Stability) **
6. Phase Diagrams (Calculation and Use)
7. Phase Transformations (Time-Temperature-Transformation Diagrams)
8. Metal Alloys (Ferrous, Non-Ferrous, and Nuclear Grade)
9. Metal Alloys (Zircaloy Degradation in Light Water Reactors)
10. The Ellingham Diagram / Oxide, Nitride, and Carbide Ceramics
11. Oxide Fuel (Fabrication to Reprocessing) **
12. Advanced Actinide Fuels
13. Corrosion (General)
14. Corrosion (Electrochemistry and Passivation) **
15. Corrosion (Localized Corrosion)
16. Corrosion (Irradiation Assisted Stress Corrosion Cracking)
17. Corrosion (EBR-II Sodium Removal)
18. Radiation Effects (Interactions with Matter)
19. Radiation Effects (Void Swelling) **
20. Radiation Effects (Behavior changes)
21. Fuel Performance (Overview)
22. Fuel Performance (Fission Gas Swelling)
23. Fuel Performance (Modeling)
24. Nuclear Waste Materials (Overview)
25. High Level Waste Forms

** Indicates topics to be illustrated using laboratory demonstrations and reports.
Texas A&M University  
Departmental Request for a New Course  
Undergraduate • Graduate • Professional  
*Submit original form and attach a course syllabus.*

1. This request is submitted by the Department of  
   Physics  

2. Course prefix, number and complete title of course:  
   PHYS 303 Advanced Mechanics II  

3. Course description (not to exceed 50 words):  
   Classical mechanics of particles and rigid bodies with an emphasis on Lagrangian and Hamiltonian methods; applications to chaos, scattering, coupled oscillations, and continua, including sound in fluids; mechanical implications of special relativity; introduction to drag and turbulence in fluids; introduction to elasticity in solids; Euler buckling instability.  

4. Prerequisite(s):  
   PHYS 302 and 332  
   Cross-listed with:  
   N/A  

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

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

7. Has this course been taught as a 489/689?  
   ☑ Yes  
   ☑ No  
   If yes, how many times?  

   Indicate the number of students enrolled for each academic period it was taught.  

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

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

10. Prefix  
    Course #  
    Title (excluding punctuation)  

    PHYS 303 ADVANCED MECHANICS II  

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

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    Approval recommended by:  
    Head of Department  
    Date  
    Head of Department (if cross-listed course)  
    Date  
    Dean of College  
    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.  
Curricular Services – 11/07
**Proposed Syllabus**  
**Physics 303 - Advanced Mechanics 2**

**Physics 303, Spring 2010 (3 lecture hours per week)**

**Instructor:** Prof. Wayne M. Saslow

**Text:** Classical Dynamics of Particles and Systems, by Marion and Thornton.

**Grading:** Regularly-graded homework (30%), one midterm (30% each) and a Final (40%).

**Course Description- 303 - Advanced Mechanics II.** Classical mechanics of particles and rigid bodies, with an emphasis on Lagrangian and Hamiltonian methods. Applications to chaos, scattering, coupled oscillations, and continua, including sound in fluids. Mechanical implications of Special Relativity. Introduction to drag and turbulence in fluids. Introduction to elasticity in solids; Euler buckling instability.

**Prerequisites:** Physics 302 and Physics 332.

**Learning Outcomes:** The student will be able to recognize the conditions under which chaos occurs, will be able to apply both Lagrangian and Hamiltonian methods, will be able to describe coupled oscillator motion in terms of normal modes, will be familiar with radiation of sound emitted by a point source, will be familiar with the relativistic version of Newton's equations of motion, will be familiar with the primary two types of fluid drag, and will be conversant with the elements of elasticity.

**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 Department of Student Life, Services for Students with Disabilities, in Room B118 of Cain Hall, 979-845-1637.

**Academic Integrity Statement:** The Aggie Honor Code is “An Aggie does not lie, cheat, or steal or tolerate those who do.” For more information, refer to the Honor Council Rules and Procedures on the web at http://www.tamu.edu/aggiehonor.

**Description for Course Catalog**

**Physics 303 - Advanced Mechanics II.** Classical mechanics of particles and rigid bodies, with an emphasis on Lagrangian and Hamiltonian methods.Applications to chaos, scattering, coupled oscillations, and continua, including sound in fluids. Mechanical implications of Special Relativity. Introduction to drag and turbulence in
fluids. Introduction to elasticity in solids; Euler buckling instability.

****************************

Additional Material

Course Motivation: The traditional undergraduate curriculum in Physics had six credit hours of Classical Mechanics. We are returning to that format after an experiment that lasted about fifteen years, of only having a single course with four credit hours. The longer format will enable us to teach certain difficult topics in more depth, will permit us to teach certain essentials of Fluid Mechanics and Statics that have been neglected.

Detailed Syllabus

(FM=Fluid Mechanics, S=Statics)
Based on Text by Marion and Thornton

For the 1st time around, no matter who teaches the rest of the course, Saslow agrees to teach the FM and S lectures; he has been developing material that he is using for the graduate Classical Mechanics course, and will simplify it for the undergraduate course.

Physics 303 - Advanced Mechanics II (41 lectures)
Chapter 4 - Nonlinear Oscillations and Chaos (5 lectures)
Chapter 6 - Calculus of Variations (3 lectures)
Chapter 7 - Lagrangian and Hamiltonian Dynamics (7 lectures)
Chapter 8 - Central Force Motion (2 lectures; 8.9-8.10)
Chapter 9 - Dynamics of a System of Particles (2 lectures; 9.9 and 9.10)
Chapter 12 - Coupled Oscillations (2 lectures; 12.8-12.9)
Chapter 13 - Continuous Systems; Waves (Sound Radiation from L&L) (5 lectures)
Chapter 14 - Special Theory of Relativity (5 lectures -use tensor notation)
Chapter FM3 - Stokes and Newton Drag in Fluids, Turbulence (5 lectures)
  Poiseuille flow along tube.
  Stokes drag for small particles.
  Newton drag for fans, windmills, pendulum damping, turbulence.
  Boundary layer with and without vorticity.
Chapter S2 - Elasticity (5 lectures)
  Torsional, Bending, and Longitudinal Response of Rods.
  Euler Instability.
Texas A&M University

Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and attach a course syllabus.

1. This request is submitted by the Department of
   Physics

2. Course prefix, number and complete title of course:
   PHYS 331 Theoretical Methods for Physicists I

3. Course description (not to exceed 50 words):
   Applications involving vectors; vector and additional methods for advanced electricity and magnetism; relationship
   and solutions of classical wave equation, heat equation, and Schrodinger equation; harmonic motion on finite or
   periodic lattice and in continuum; tensor and matrix notation in classical mechanics and electricity and magnetism.

4. Prerequisite(s):
   MATH 221 or 251 or 253 and 308; PHYS 218, 208, and 221; restricted to physics majors and minors.

5. Cross-listed with:
   N/A

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

6. Is this a variable credit course? □ Yes ☑ No
   If yes, from ______ to ______

7. 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

   Has this course been taught as a 489/689? ☑ Yes □ No
   If yes, how many times? _____
   Indicate the number of students enrolled for each academic period it was taught. requested for 09A

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
      BA in physics; BS in physics
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S. Ph.D. in geography)

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

10. Prefix Course # Title (excluding punctuation)
    PHYS 331 THEORETICAL METHODS FOR

    Lect. Lab SCH CIP and Fund Code Admin. Unit Acad. Year FICE Code
    0 3 0 0 0 3 4 0 0 8 1 0 0 0 0 2 3 0 0 0 9 - 1 0 0 3 6 3 2

    Approval recommended by:
    Head of Department ___________________________ Date 09/15/08
    Chair, College Review Committee ___________________________ Date 09/16/08
    Head of Department (if cross-listed course) ___________________________ Date
    Dean of College ___________________________ Date

    Submitted to Coordinating Board by:
    ___________________________ Date
    ___________________________ Date

    Associate Director, Curricular Services ___________________________ Date
    Date Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
Proposed Syllabus
Physics 331 - Theoretical Methods for Physicists

Physics 331, Spring 2009 (3 lecture hours per week)

Instructor: Prof. Bhaskar Dutta

Text: Mathematics for Physicists, by Susan Lea (Department of Physics, San Francisco State University).

Grading: Regularly-graded homework (20%), two midterms (25% each) and a Final (30%).


Prerequisites: Three terms of Calculus and one term of Ordinary Differential Equations. Physics 218, 208, and 221. Restricted to Physics majors.

Learning Outcomes: After four weeks students will be able to solve the most difficult introductory-level problems in Electricity and Magnetism, and will be prepared for the advanced vector methods needed in Physics 304 (Electromagnetism 1). By the middle of Physics 331 students will be able to solve the time-dependent Schrodinger equation in one dimension with step potentials, which they will study in Physics 309 (Modern Physics) at the same time. They will understand the relationship between, and solutions of, the classical wave equation, the heat diffusion equation, and the Schrodinger equation. They will also be able to solve for the principal axes and principal moments of inertia of a rigid body, in preparation for Physics 302 (Classical Mechanics 1), and to solve for the oscillation frequencies and normal modes of oscillation for systems with two and more degrees of freedom, in preparation for Physics 303 (Classical Mechanics 2).

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 Department of Student Life, Services for Students with Disabilities, in Room B118 of Cain Hall, 979-845-1637.

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lie, cheat, or steal or tolerate those who do.” For more information, refer to the Honor Council Rules and Procedures on the web at http://www.tamu.edu/aggiehonor.

Description for Course Catalog

331 - Theoretical Methods for Physicists 1. Review of freshman Physics, especially applications involving vectors. Vector and additional methods for advanced Electricity and Magnetism. Relationship between and solutions of the classical wave equation, the heat equation, and the Schrodinger equation. Harmonic motion on a finite or periodic lattice, and in the continuum. Tensor and matrix notation applications in Classical Mechanics and in Electricity and Magnetism.

Additional Material

Course Motivation: This course is intended for students in their fourth semester. It will follow three terms of Physics and four terms of Mathematics. Its purpose is to provide Physics majors a more uniform background in Physics (especially in Electricity and Magnetism) and in appropriate Theoretical Methods. This course is intended to improve the retention rate of Physics majors at the junior level (fifth semester), both by determining those who should choose other majors and by improving the background of those who continue as Physics majors. During this fifth term a large number of students drop out of Physics, largely because they are not prepared for the intense combination of vector calculus and advanced physical reasoning associated with Electricity and Magnetism. This course will be restricted to BA and BS Physics majors.

Detailed Syllabus

(E&M=Electricity and Magnetism, CM=Classical Mechanics, QM=Quantum Mechanics, SMT=Statistical Mechanics-Thermodynamics)

Brackets [ ] denote possible source of lecture material

Physics 331 - Theoretical Methods in Physics 1 (14 weeks)


1 week - More vector calculus, as in the first chapter of Griffiths' E&M book and in Marion and Thornton's Classical Mechanics book. [Lea 17-37.] This includes the general line element and various operators in curvilinear coordinates. Rotations via tensor notation. [Lea 1-17.] MOTIVATION: Preparation for E&M1 and CM1.
1 week - Application of complex variables to the Schrodinger equation and to ac circuit response.  [Lea 75-101.]
   MOTIVATION: Preparation for Modern Physics, E&M1 and QM1.

1 week - Methods in one dimension to solve diffusion equation (for heat and for impurity or tracer particles), classical wave equation, and Schrodinger equation in locally uniform potentials.  [Lea 219-243.]
   MOTIVATION: Preparation for Modern Physics, E&M1, CM1 and QM1.

1 week - Methods in one and higher dimensions to solve various equations of Theoretical Physics, including harmonic motion, bending of a beam, electric circuits, diffusion, and classical and quantum-mechanical waves.  [Lea 169-197.]
   MOTIVATION: Preparation for E&M1, CM1, and QM1.

3 weeks - Restatement of equations for moment of inertia tensor and coupled coordinates as matrices, for determination of principal axes and principal moments of inertia, and normal modes and their oscillation frequencies.  [Lea 37-65; 439-447.]
   MOTIVATION: Preparation for CM1

1 week - Harmonic motion on a finite or periodic lattice.  [Fetter&Walecka's Theoretical Mechanics 108-119.]
   MOTIVATION: Preparation for E&M1, CM1, and QM1.

1 week - Dirac delta function [Lea 287-318.]
   MOTIVATION: Preparation for QM1.

1 week - Fourier integrals, with applications to classical and Schrodinger waves.  [Lea 323-351.]
   MOTIVATION: Preparation for E&M1 and QM1.

1 week - Restatement of the equations of relativistic mechanics and of electromagnetism in tensor form.  [Lea 447-460.]
   MOTIVATION: Preparation for E&M1 and CM1.
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and attach a course syllabus.

1. This request is submitted by the Department of

Physics

2. Course prefix, number and complete title of course:

PHYS 332 Theoretical Methods for Physicists II

3. Course description (not to exceed 50 words):
Methods to solve the important equations of theoretical physics, emphasizing the effects of boundary conditions and quantization on their solutions and restricted to the essential physical symmetries associated with free space, spheres, cylinders, and rectangles; if time permits, introduction to symmetries in physics and to asymptotic methods.

4. Prerequisite(s):

PHYS 309 (or 222) and 331; restricted to PHYS majors or minors

Cross-listed with:

N/A

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. Has this course been taught as a 489/689? □ Yes  □ No  If yes, how many times? ______

Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:

a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)

BS in physics

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

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

THEOR METH PHYSICISTS II

10. Prefix - Course # - Title (excluding punctuation)

<table>
<thead>
<tr>
<th>PHYS</th>
<th>332</th>
<th>THEORETICAL METHODS FOR</th>
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Approval recommended by:

Head of Department  Date

Chair, College Review Committee  Date

Head of Department (if cross-listed course)  Date

Dean of College  Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services  Date

Effective Date
Proposed Syllabus
Physics 332 - Theoretical Methods for Physicists

Physics 332, Fall 2009 (3 lecture hours per week)

Instructor: Prof. Bhaskar Dutta

Text: Mathematics for Physicists, by Susan Lea (Department of Physics, San Francisco State University).

Grading: Regularly-graded homework (20%), two midterms (25% each) and a Final (30%).

Course Description - 332-Theoretical Methods for Physicists 2. Methods to solve the important equations of Theoretical Physics, emphasizing the effects of boundary conditions and quantization on their solutions, and restricted to the essential physical symmetries associated with free space, spheres, cylinders, and rectangles. If time permits, introduction to symmetries in Physics and to asymptotic methods.

Prerequisites: Physics 331 and 309 (or 222). Restricted to Physics majors.

Learning Outcomes: By the middle of Physics 332 students will have studied the various special functions that will be needed for the concurrently-taken Physics 304 (Electromagnetism 1). By the end of Physics 332 student should be prepared with all the theoretical methods needed for Physics 303 (Classical Mechanics 2), Physics 305 (Electromagnetism 2), Physics 408 (Statistical Mechanics and Thermodynamics), Physics 412 (Quantum Mechanics 1), and Physics 414 (Quantum Mechanics 2).

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 Department of Student Life, Services for Students with Disabilities, in Room B118 of Cain Hall, 979-845-1637.


Description for Course Catalog

332 - Theoretical Methods for Physicists 2. Methods to solve the important equations of Theoretical Physics, emphasizing the effects of boundary conditions
and quantization on their solutions, and restricted to the essential physical symmetries associated with free space, spheres, cylinders, and rectangles. If time permits, brief introduction to symmetries in Physics and to asymptotic methods.

********************

**Additional Material**

**Course Motivation:** This is to be a followup course, for Physics majors in their fifth semester, of Physics 331, Theoretical Methods for Physicists 1. It is intended to provide students with methods needed to solve for the energy spectrum and wavefunctions of the Schrodinger equation in a number of physically encountered geometries and potentials (for Physics 412); (2) study of solutions to Laplace’s equation (electrostatics and magnetostatics) and the diffusion equation (for Physics 304 and Physics 305); (3) study of retarded and advanced solutions to the scalar wave equation (for proposed Physics 303 and for Physics 305); (4) more generically, the study of methods needed to solve the time-dependent and time-independent equations of Theoretical Physics, which include, but are not restricted to, the diffusion equation, Laplace’s equation, Poisson’s equation, the scalar wave equation, and the Schrodinger equation. Such a course is needed to ensure a higher retention rate among Physics majors. This course will be restricted to BA and BS Physics majors.

**Detailed Syllabus**

(E&M=Electricity and Magnetism, CM=Classical Mechanics, QM=Quantum Mechanics, SMT=Statistical Mechanics-Thermodynamics)

Brackets [ ] denote possible source of lecture material

**Physics 332 - Theoretical Methods in Physics 2 (14 weeks)**

5 weeks - Effect of boundary conditions, symmetry, and quantization on solutions of the equations of Theoretical Physics, with applications in E&M and QM. Potentials with the symmetries associated with open space, spheres, cylinders, and rectangles will be studied. [Lea 208-211, Lea 357-427.]

**MOTIVATION:** Preparation for E&M1 and QM1.

1 week - Concept of stationary path and derivation of Euler-Lagrange equation of motion in CM. Legendre transformations in CM and SMT. [Lea 541-552.]

**MOTIVATION:** Preparation for CM2 and SMT.

3 weeks - Applications of complex analysis to potential problems in 2d: fluid flow (CM2) and E&M. [Lea 97-159.]

**MOTIVATION:** Preparation for CM and E&M

1 week - Laplace transforms. Application to temporal response of electric circuits, beams with loads, 1d diffusion. [Lea 251-273.]

**MOTIVATION:** Preparation for E&M1, CM.
2 weeks - Green's functions. Response of physical systems to unit sources in space and/or time, applications to 1d diffusion and to radiation. [Lea 495-526]
   MOTIVATION: Preparation for E&M1, CM1, and QM1.

2 weeks - Applications of translational and rotational symmetry to problems in CM, E&M, and QM [Lea 465-490]. Applications of stationary phase and steepest descents to ensemble averaging in SMT [Lea 531-537].
   MOTIVATION: Preparation for CM, E&M, QM, and SMT.
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

1. This request is submitted by the Department of ________________________

2. Course prefix, number and complete title of course: SCSC 201 Great Plains Settlement and Farming

3. Course description (not to exceed 50 words): American Indian hunting and farming; transformation by Manifest destiny, Homestead Act, railroads. Indian Wars, U.S. Army, crops and farm families; effects of World Wars, Great Depression, Dust Bowl, irrigation, fertilization, pest controls, precision farming

4. Prerequisite(s): None

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. Has this course been taught as a 489/689? □ Yes □ No If yes, how many times? __________

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

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

   all Undergraduate Degree Programs for students interested in Soil and Crop Sciences

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

   Attach approval letters.

10. Prefix Course # Title (excluding punctuation)

    | SCSC | 201 | GRT | PLNS | SETL | MNT & FARMING |
    |------|-----|-----|------|------|--------------|
    | Lect | Lab | SCH | CIP and Fund Code | Admin. Unit | Acad. Year | HICE Code |
    | 0    | 3   | 0   | 03 01 11 10 20 00 | 02 00 05 | 09 10 00 | 36 32 |

Approval recommended by: ____________________________
Head of Department Date 9-16-08

Chair, College Review Committee Date 9/22/08
Dean of College Date 23 Sep 2008

Submitted to Coordinating Board by: ____________________________
Associate Director, Curricular Services Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
Great Plains Settlement and Farming
SCSC 201

Course Description: American Indian hunting and farming; transformation by Manifest destiny, Homestead Act, railroads, Indian Wars, U.S. Army, crops and farm families; effects of World Wars, Great Depression, Dust Bowl, irrigation, fertilization, pest controls, precision farming.

Professor: Harry Cralle
Room 217 HEEP Center
Office phone: 845-9634
Home phone: 693-7293
E-mail: hcralle@aol.com; hcralle@tamu.edu

Class: M W F from 12:40 to 1:30 pm in Room 103 of the HEEP Center
Attendance is required as an expression of the Spirit of Aggieland. The Team nature of the daily projects and exams calls forth the attention and loyalty of each individual student. Failure to attend class without an official university excuse or permission of the professor will result in a "0" for the daily project. Makeup projects and exam will be different from those taken in class.

Teams: Each student must become a permanent member of a Team before the completion of the first assignment. These teams must have 3 students. If enrollment does not evenly divide into teams of three, one team will consist of 2 students.

Grading:
4 Team Lecture exams (a minimum of 100 points each)
Team daily projects (a minimum of 10 points each)

A = 90 to 100%
B = 80 to 89%
C = 70 to 79%
D = 60 to 69%
F = less than 60%

The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation provides 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, Services for Students with Disabilities, Cain Hall, or call 845-1637.

The expected conduct in this course should conform to the Honor Code: "An Aggie does not lie, steal, or cheat, or steal, or tolerate those who do." See the following web site for further guidance:
http://www.tamu.edu/aggiehonor/faq.html.
SCSC 201: Great Plains Settlement and Farming

Week 1. The North American Prairie, grasslands, bison, and prairie dogs
Week 2. American Indian hunting
Week 3. American Indian agriculture
Week 4. Manifest Destiny and the Westward Expansion of the USA
Week 5. The transformation of the Great Plains into farms and ranches: Homestead Act of 1862, transcontinental railroads, Indian Wars, and the broader role of the U.S. Army
Week 6. Farming the frontier: crops, animals, and tools
Week 7. World War I: mechanization, commodity prices, the Great Plow-up, and farm size increases
Week 8. The Great Depression and farm failures; the Dust Bowl and soil conservation
Week 9. World War II and global demands
Week 10. Irrigation
Week 11. Fertilization
Week 12. Weed and Grasshopper Control
Week 13. Precision Farming
Week 14. The future of farming in the Great Plains
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
• Submit original form and attachments •

1. This request is submitted by the Department of Biology

2. Course prefix, number and complete title of course: BIO 405, Comparative Endocrinology

3. Change requested
   a. Prerequisite(s): From approval
   b. Withdrawal (reason):
   c. Cross-list with:

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

4. Complete current course title and current course description:

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

6. a. As currently in course inventory:

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<td>COMPAR ENDOCRINOLOGY</td>
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b. Change to:

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<th>Admin. Unit</th>
<th>Acad. Year</th>
<th>FICE Code</th>
</tr>
</thead>
</table>

Approval recommended by:

Head of Department Date
Chair, College Review Committee Date

Head of Department (if cross-listed course) Date
Dean of College Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
MEMORANDUM

TO: Undergraduate Curriculum Committee
FROM: Dr. Duncan MacKenzie
Chair, Biology Undergraduate Programs Committee

SUBJECT: Justification for changes in Biology 405 description

The course prerequisites have been modified for two reasons: First, as the science of endocrinology has become more dependent on understanding of molecular processes, Biology 213 has been added to assure that students have adequate background in cellular and molecular biology. Second, Wildlife and Fisheries Sciences 416 has been eliminated because the course is no longer being taught.
BIOLOGY 405  
Comparative Endocrinology  
Fall, 2008  

Tues., Thurs., 12:45-2:00  
Heldenfels 120  
Website: elearning.tamu.edu  

Duncan MacKenzie  
325 BSBE  
Phone: 845-7701  
E-mail: duncan@mail.bio.tamu.edu  
Office Hours: after class; M, W 9-10; or by appointment  

Zoology 405 presents an introduction to endocrinology for students with some prior background in physiology and anatomy. The objective of Zoology 405 is to provide an understanding of the biology of chemical mediation in animals through study of:  

1. The structure and mechanism of action of hormones.  
2. The techniques used to study endocrine function.  
3. The cellular and organismal functions of hormones.  
4. The physiological mechanisms regulating hormone production and degradation.  
5. The evolution of hormone systems.  

GRADING: There are 550 points possible for this course. Letter grades will be assigned based on the total number of points earned. Your 550 point grade in the course will comprise:  

1. Three lecture exams, worth 100 points each. These exams will be fill-in/short answer/problem solving/essay type.  
   EXAM 1: September 27  
   EXAM 2: November 1  
   EXAM 3: Wednesday, December 12, 8-10 AM  

2. Twenty Questions. To stimulate your thinking about material presented in lecture, you will be required to turn in 20 questions during class (one question per class period). Questions are worth up to 5 points each for 100 points total. See the back of this page for more information.  

3. Three CPR exercises worth 50 points each.  

20 Questions

The objective of 20 Questions is to stimulate you to think about the class material as it is being presented by encouraging you to ask questions. At the end of each class period, you will turn in an index card with a question. The question will be answered, graded, and returned at the beginning of the next class period.

Questions will be graded on the following scale:

- 0 points: No question.
- 1 point: Vapid, irrelevant, incomprehensible, confusing, asleep.
- 2 points: Vague, unfocused, ambiguous, superficial, frivolous.
- 3 points: Thoughtful, attentive, intelligent, observant, re-explanations.
- 4 points: Creative, perceptive, insightful, unusual, corrections.
- 5 points: Penetrating, masterful, synthetic, challenging, brilliant.

RULES:

1. Only 1 question per class period.

2. Questions must be turned in as you leave class. I will not accept questions in my office.

3. You may submit a question that you asked during class period. You will get a bonus point if you asked the question during class. Note on the card that you asked it (I sometimes forget).

4. You may not submit a question that somebody else asked during class period.

5. You may turn in more than 20 questions, but only the best 20 will count towards your grade.

6. Valid corrections of something I said count as 4 points.

7. Put your NAME on the back, question on the front.

STATEMENT ON DISABILITIES: 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 for their disabilities. If you believe you have a disability requiring an accommodation, please contact Disabilities Services in Room B118 of Cain Hall. The phone number is 845-1637.

STATEMENT ON PLAGIARISM: The materials used in this course are copyrighted. By "materials," I mean all materials generated for this class, which include but are not limited to syllabi, lecture notes, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy them, unless I expressly grant permission. As commonly defined, plagiarism consists of passing off as one's own ideas, words, writing, etc., which 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 should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues that allows information to be honestly communicated. If you have any questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section "Scholastic Dishonesty."
# COURSE SCHEDULE

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<th>Topic</th>
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<td>Lecture 1</td>
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<td>Introduction to Comparative Endocrinology</td>
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<tr>
<td>Lecture 2</td>
<td>August 30</td>
<td>Hormone Chemistry, Hydrophilic Hormones</td>
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<td>Lecture 3</td>
<td>September 4</td>
<td>Hormone Chemistry, Hydrophobic Hormones</td>
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<td>Lecture 4</td>
<td>September 6</td>
<td>Endocrine Techniques</td>
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<td>Lecture 5</td>
<td>September 11</td>
<td>Hormone Receptors</td>
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<td>Lecture 6</td>
<td>September 13</td>
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<td>September 18</td>
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<td>Lecture 8</td>
<td>September 20</td>
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<td>September 25</td>
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<td>Lecture 11</td>
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<td>Neuroendocrinology</td>
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<td>The Pituitary Gland</td>
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<td>Lecture 13</td>
<td>October 9</td>
<td>Hypothalamic-Pituitary Interactions and Evolution</td>
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<td>Lecture 14</td>
<td>October 11</td>
<td>Hormones of the Pars Nervosa</td>
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<td>Lecture 15</td>
<td>October 16</td>
<td>Growth Hormone</td>
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<td>Lecture 16</td>
<td>October 18</td>
<td>Growth Hormone Actions</td>
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<td>October 23</td>
<td>Growth Hormone Uses</td>
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<td>Lecture 19</td>
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<td>Thyroid Function</td>
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<td>November 8</td>
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<td>Lecture 23</td>
<td>November 13</td>
<td>Adrenal Cortex, Steroidogenesis</td>
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<td>Lecture 24</td>
<td>November 15</td>
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<td>December 12</td>
<td>EXAM 3, 8-10 AM</td>
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Texas A&M University

Departmental Request for a Change in Course
Undergraduate • Graduate • Professional

1. This request is submitted by the Department of __________

2. Course prefix, number and complete title of course: BIOL445, Biology of Viruses

   Attach a brief supporting statement for changes made to items 3a thru 3d, and 5 below.

3. Change requested
   a. Prerequisite(s): From: __________ To: __________
   b. Withdrawal (reason): __________
   c. Cross-list with: __________

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

   d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.

   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description: BIOL445, Biology of Viruses-Introduction to the life cycles of structure, composition and viruses; their interaction with host to viral infection and vaccine applications; followed by an in depth study of the life cycles of the major classes of viruses and discussion of emerging viruses. Prerequisite: BIOL213 or 351 or approval of instructor.

5. Complete proposed course title and proposed course description (not to exceed 50 words): BIOL445, Biology of Viruses-Introduction to the structure, composition and life cycles of viruses; the methods used to study viruses; their interaction with host cells; the mechanisms of pathogenicity and cellular transformation; the responses of the host to viral infection, and vaccine development. This will be followed by an in-depth study of the life cycles of the major classes of viruses and discussion of emerging viruses. Prerequisite: BIOL 213 or 351, or approval of instructor.

6. a. As currently in course inventory:

   Prefix  | Course #  | Title (excluding punctuation)
   --------|-----------|-------------------------------
   BIOL    | 445       | BIOLOGY OF VIRUSES

   Lect.  | Lab  | SCH  | CIP and Fund Code | Admin. Unit | FICE Code | Level |
   03     | 00   | 03   | 2605040020440003632 | 4 |

   b. Change to:

   Prefix  | Course #  | Title (excluding punctuation)
   --------|-----------|-------------------------------
   BIOL    | 445       | BIOLOGY OF VIRUSES

   Lect.  | Lab  | SCH  | CIP and Fund Code | Admin. Unit | FICE Code |
   "      | "     | "    | "                  | "           | "        |

   Approval recommended by:

   Head of Department __________ Date __________
   Chair, College Review Committee __________ Date __________
   Head of Department (if cross-listed course) __________ Date __________
   Dean of College __________ Date __________

   Submitted to Coordinating Board by:

   Associate Director, Curricular Services __________ Date __________
   Dean of College __________ Date __________
   " __________ Date __________

   Questions regarding this form should be directed to Sandra Williams at 845-8201.
   Curricular Services – 11/07
July 24, 2008

MEMORANDUM

TO: Undergraduate Curriculum Committee

FROM: Dr. Duncan MacKenzie
Chair, Biology Undergraduate Programs Committee

SUBJECT: Course description change for BIOL445

We are requesting the attached course description changes for BIOL445, Biology of Viruses, as it better reflects the topics and current terminology used in the course.
Microbiology 445 Biology of Viruses  
Tues/Thurs. 2:20 - 3:35 pm  
Scoates 214

Instructor: Dr. Deborah Bell-Pedersen (Please call me Dr. Pedersen)

Office hours:  
Wed 10:00 am to 2:00 pm, or by appointment  
Office - 210 BSBW (in the back of the lab)  
phone - 847-9237  
e-mail - dpedersen@mail.bio.tamu.edu

Course Description: This course will provide an introduction to the structure, composition and life cycles of viruses; the methods used to study viruses; their interaction with host cells; the mechanisms of pathogenicity and cellular transformation; the responses of the host to viral infection, and vaccine applications. This will be followed by an in depth study of the life cycles of the major classes of viruses and a discussion of emerging viruses.

Course Objectives: Upon successful completion of this course, the student will be able to:

- Understand the mechanisms of virus infection and spread.
- Describe general molecular principles of virus replication.
- Understand the different mechanisms used by virus families to replicate and infect.
- Understand the underlying molecular basis for viral disease.
- Discuss approaches to treating and combating virus infection.
- Display an appreciation for the broader impact of viruses and viral disease on science and society.
- Think like a scientist

Text:  
Basic Virology, eds. Wagner, E.K. and Hewlett, M.J.

Note: the arrangement of material in the text is such that you will need to be flexible in finding and reading the appropriate parts. The chapters listed will direct you to most, but not all, of the related information. Use the index.

Useful websites include the U.S. Centers for Disease Control and Prevention http://www.cdc.gov/ (including its journal Emerging Infectious Diseases and its Morbidity and Mortality Weekly Report), the World Health Organization http://www.who.int/en/, and a site called All the Virology on the WWW http://www.virology.net/, which has links to pictures and background information.

Web:  
Lecture material that is presented using powerpoint will be available on VISTA before each lecture. Important: These may cover more that we will have time to discuss during class. They are to be used as a guide only. The powerpoint files will not include everything I discuss in
class, and they will not reveal my emphasis. Thus, it is in your best interest to attend and pay attention to the lectures.

**Evaluation method**

- 3 exams (70%)
- 1 final assignment (20%)
- Random quizzes (10%)

**Exams:** Exams will be comprised of short answer questions and will be designed to make you apply the knowledge you have obtained from class and reading material. While the exams will focus on material covered since the last exam, it is assumed that basic information from the previous lectures will be retained.

**Quizes:** Four quizzes will be given at random times throughout the semester to help you learn for the exams. The lowest grade on one of these will be dropped (in other words, you may miss one quiz without consequence).

**Exam absences:** Only University approved absences will be accepted. The Texas A&M University Explanatory Statement for Absence from Class form is available at http://attendance.tamu.edu

**Final written assignment:** The final project will be in the form of a written review of a research paper from the Journal of Virology.

First, you will choose a virus that you wish to learn more about (this can be a virus that is discussed in class, or another virus of your choosing). Then, you will identify and read research papers that were published within the year (2007) in the Journal of Virology (http://jvi.asm.org/) that includes research on your virus. This will take time to read and comprehend the recently published papers – do not wait until the end of the semester to begin this project. From your readings, you will choose one paper of interest. You will carefully read and understand the a) hypothesis being tested, b) experimental design, c) results, and d) discussion of the paper. In order to do this well, you will probably need to read many of the references in the paper. Lastly, you will write a summary of the paper, in your own words, highlighting the purpose, experimental design, and data that led to the main conclusions. Finally, you will indicate how this research has increased our level of understanding of the virus – in other words, how does this work further the field? Bonus points will be given to those who suggest what the next logical experiment would be. You may, but are not required to, turn in a draft of the final project by Nov. 13 for editing and revision. In the past, students who took advantage of this opportunity received higher grades on the final. The draft and final are limited to 5 pages (1 inch margins; 12 point font), including citations. You must include a copy of the paper that you are summarizing. The style of reference will be according to the Journal of Virology (http://jvi.asm.org/misc/ifora.shtml). The final written version of the project is due in my office on Dec 12th at 3pm (the scheduled time for the final exam) without exception.

**Classroom etiquette:**
Please turn off cell phones, refrain from talking while I am speaking, and refrain from reading magazines or newspapers. Please make every effort to be on time.

**Organization of lectures:** Lectures are organized into 2 phases: 1) introduction to the major principles relating to the study of viruses including viral classification, structure, gene expression strategies, pathogenesis, and host responses, and concluding with 2) an in depth look at representative virus life cycles, beginning with the smallest and simple RNA viruses, and then progressing to successively more complex viruses and emerging viruses. It is to your advantage to read the material from the text before the lecture.

**Course Outline:**

8/28 Course syllabus and Introduction to Viruses (Chapter 1); Review the central dogma of molecular biology.

8/30 Introduction to Virus Genomes and Replication, constraints of host cells (Chapters 2 and 13)

9/4 Viral Transmission and Pathogenesis (Chapter 2)

9/6 Viral Infection, Persistence and Latency (Chapter 3/4)

9/11 Viral Classification and Structure (Chapter 5),

9/13 Host Cell Interactions - Entry and Exit from the Cell (Chapter 6).

9/18 Cellular Transformation (Chapter 6)

9/20 Host Responses to Viral Infection (Chapter 7/8)

9/25 Vaccines/antiviral therapies (Chapter 7/8)

9/27 **Exam 1**

10/2 How to find, read, and cite scientific literature; Methods to Study Viruses (Chapters 9/10/11/12/14)

10/4 Methods to Study Viruses (Chapters 9/10/11/12/14)

10/9 Positive-Sense RNA Viruses e.g. Picornavirus, Flavivirus, Coronavirus (Chapter 15)

10/11 Negative Sense RNA Viruses e.g. Paramyxovirus, Orthomyxovirus (Chapter 16)

10/16 dsRNA viruses e.g. Reovirus (Chapter 16)

10/18 Small DNA Viruses e.g. Polyomavirus (SV40)/ Adenovirus (Chapter 17)
10/23  Large DNA Viruses (nuclear replication) e.g. Herpesvirus, Baculovirus (Chapter 18)

10/25  Large DNA Viruses (nuclear replication) e.g. Papillomavirus (Chapter 18)

10/30  **Exam 2**

11/1  Large DNA Viruses (cytoplasmic replication) e.g. Poxvirus, T4 and ss DNA viruses e.g. Parvovirus (Chapter 19)

11/6  Subviral Agents (defective interfering viruses, satellite viruses, viroids and virusoids) (Chapter 16)

11/8  Prions; Video: The brain eaters (NOVA)

11/13  Bacteriophage λ (Chapter 19)  
**Drafts of final due**

11/15  Retroviruses (Chapter 20)

11/20  HIV

11/22  No class, Thanksgiving holiday

11/27  Hepadnaviruses (Chapter 21)

11/29  **Exam 3**

12/4  Emerging viruses; Using Viruses for gene therapy

**Final due in my office by December 12, Wednesday 3 p.m.**

*******************************************************************************

**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:  
www.tamu.edu/aggiehonor/

**The 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 Room B118 of Cain Hall or call 845-1637.
Copyright Policy
All materials used in this class are copyrighted; this means you do not have the right to copy the handouts, unless permission is expressly granted. These materials include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and problem sets.
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
Submit original form and attachments •

1. This request is submitted by the Department of Civil Engineering

2. Course prefix, number and complete title of course: CVEN 336 Fluid Dynamics Laboratory

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 4; enter proposed course title and proposed course description in item 5.
   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description:

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

6. a. As currently in course inventory:

<table>
<thead>
<tr>
<th>Prefix</th>
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<td>FLUID DYNAMICS LAB</td>
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<td>Lect.</td>
<td>Lab</td>
<td>SCH</td>
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b. Change to:

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<th>Course #</th>
<th>Title (excluding punctuation)</th>
</tr>
</thead>
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<td>336</td>
<td>FLUID DYNAMICS LAB</td>
</tr>
<tr>
<td>Lect.</td>
<td>Lab</td>
<td>SCH</td>
</tr>
<tr>
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<td>0 1 1</td>
<td>4 1 1 0 1 0 0 0 6 0 6 3 0 0 9 1 0 0 0 3 6 3 2 3</td>
</tr>
</tbody>
</table>

Approval recommended by: ______________________________________________________________________
Head of Department Date _______________________________________________________________________
Head of Department (if cross-listed course) Date ______________________________________________________________________

Submitted to Coordinating Board by: ______________________________________________________________________
Associate Director, Curricular Services Date ______________________________________________________________________

Chair, College Review Committee Date ______________________________________________________________________
Dean of College Date ______________________________________________________________________

Date Effective Date
Request: Change CVEN 336 to OCEN 336

Reason: Only OCEN students are required to take CVEN 336 for degree requirements. Change will increase number of credit hours in major for OCEN students.
Course Syllabus

Lab Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Experiment</th>
<th>Report</th>
<th>Lab Manual Reading</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>None</td>
<td>Pages 1-6</td>
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<tr>
<td>2</td>
<td>Coordinate Papers</td>
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<td>Pages 7-14</td>
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<tr>
<td>3</td>
<td>Pressure Gauge Calibration</td>
<td>Informal</td>
<td>Pages 15-20</td>
</tr>
<tr>
<td>4</td>
<td>Center of Pressure</td>
<td>Formal</td>
<td>Pages 21-30</td>
</tr>
<tr>
<td>5</td>
<td>Discharge through an Orifice</td>
<td>Informal</td>
<td>Pages 31-38</td>
</tr>
<tr>
<td>6</td>
<td>Flow over Weirs</td>
<td>Formal</td>
<td>Pages 47-54</td>
</tr>
<tr>
<td>7</td>
<td>Impact of a Water Jet</td>
<td>Informal</td>
<td>Pages 55-64</td>
</tr>
<tr>
<td>8</td>
<td>Minor losses in Pipe Systems</td>
<td>Formal</td>
<td>Pages 81-84</td>
</tr>
<tr>
<td>9</td>
<td>Flow through a Venturi Meter</td>
<td>Informal</td>
<td>Pages 39-46</td>
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<td>10</td>
<td>Friction Loss along a Pipe</td>
<td>Formal</td>
<td>Pages 73-80</td>
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<td>11</td>
<td>Centrifugal Pump Test</td>
<td>Informal</td>
<td>Pages 65-72</td>
</tr>
<tr>
<td>12</td>
<td>Open Channel Flow</td>
<td>Formal</td>
<td>Pages 85-94</td>
</tr>
<tr>
<td>13</td>
<td>Laboratory Demonstration</td>
<td>None</td>
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</tr>
<tr>
<td>14</td>
<td>Review</td>
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</tr>
<tr>
<td>15</td>
<td>Exam</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

Course Information

Instructor: Ning Xu  
Email: delpjeroxu@tamu.edu (preferred)  
Office: 808 B CE/TTI  
Phone: 845-4595  
Office Hours: Thursday ~ 3:00-5:00 pm

Classroom: Room 109 Civil Engineering Laboratory Building (CVLB 109)  
Required Text: Fluid Dynamics Laboratory Manual  
(Available at TEES Copy Center on 2nd floor of WERC)  
Prerequisites: CVEN 311 or concurrent registration

Grading:  
Formal Reports: 40%  
Informal Reports: 30%  
Laboratory Exam: 20%  
Attendance: 10%

Objectives

(1) Demonstrate principles of fluid mechanics,  
(2) Learn techniques and use modern equipment for making fluid measurements,  
(3) Gain experience in the interpretation and presentation of experimental data,  
(4) Improve communication through the writing of technical reports.
ABET Outcomes

(b) To design and conduct experiments and to analyze and interpret data
(g) To communicate effectively.
(k) To use the techniques, skills, and modern engineering tools necessary for engineering practice.
(l) To apply hydrostatics, water wave mechanics, underwater acoustics, basic oceanography, and probability and statistics.

Additional Notes

Lab Reports : Lab reports will be submitted at the beginning of the next lab class. All reports must be completed using a word processor and all graphs must be computer generated. Each lab report has a maximum of 100 points. Late reports will receive a deduction of up to 50 points. Data collection will be performed by groups, but each student must write their own report. Each group member must submit reports unique from other classmates. Group members should be credited in the reports.

Report Grading:

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Content</td>
<td>60%</td>
</tr>
<tr>
<td>Grammar</td>
<td>20%</td>
</tr>
<tr>
<td>Format</td>
<td>20%</td>
</tr>
</tbody>
</table>

Final Exam : The laboratory exam is a one-hour comprehensive written exam that involves all the concepts explored during the course of the laboratory class.

Attendance : Attendance is mandatory and vital to each student’s laboratory course grade. Only university excused absences will be accepted without prior approval of the instructor. If a student is absent for a lab, the instructor will not accept a lab report until that student talks with the instructor about the particular lab missed (a grade of zero will be given for non-university excused absence on that lab).

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 the Department of Student Life, Services for Students with Disabilities in Room B118 of Cain Hall, or call 845-1637.

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Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
Submit original form and attachments

1. This request is submitted by the Department of History

2. Course prefix, number and complete title of course: HIST 308, History of Native Peoples in the U.S. South

3. Change requested
   a. Prerequisite(s): From: ___________________________ To: ___________________________
   b. Withdrawal (reason):
   c. Cross-list with: ___________________________

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

   d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.

   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description: History of Native Peoples in the U.S. South. Examination of the role of indigenous populations in the history and formation of the U.S. South; cultural values and social practices; impact of European exploration and African slavery, trade patterns, imperial wars, and removal policies.

5. Complete proposed course title and proposed course description (not to exceed 50 words): History of American Indians in the U.S. South. Examination of the role of indigenous populations in the history and formation of the U.S. South; cultural values and social practices; impact of European exploration and African slavery, trade patterns, imperial wars, and removal policies.

6. a. As currently in course inventory:

   Prefix  Course #  Title (excluding punctuation)
   HIST 308  NATIVE PEOPLES US SOUTH

   Lect.  Lab  SCH  CIP and Fund Code  Admin. Unit  FICE Code  Level
   0 3 0 0 0 3 5 4 0 1 0 1 0 0 0 1 1 4 5 0 0 0 3 6 3 2 3

   b. Change to:

   Prefix  Course #  Title (excluding punctuation)
   HIST 308  AMERICAN INDIAN US SOUTH

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

   Approval recommended by: ___________________________
   Date: ___________________________

   Head of Department

   Head of Department (if cross-listed course)
   Date

   Submitted to Coordinating Board by:
   Date
   Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
September 24, 2008

Supporting statement for a proposed change in course title for HIST 308.

This is a new course in the 08-09 Catalog taught by a second-year assistant professor. Both she and the department believe that the new title better reflects the content of the course as well as the currently accepted language of the discipline.

Thank you,

David Vaught
Associate Department Head
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
• Submit original form and attachments •

1. This request is submitted by the Department of History

2. Course prefix, number and complete title of course: HIST 412, Soviet Union 1917-Present

3. Change requested
   a. Prerequisite(s): From: ________________________________ To: ________________________________
   b. Withdrawal (reason): ________________________________
   c. Cross-list with: ________________________________

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

   d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.

   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description: Soviet Union 1917-Present. The Russian Revolution, consolidation of Bolshevik power; political and social evolution of the Soviet system from February 1917, through the Civil War, the power struggle among Lenin’s successors, Stalin’s industrial revolution, collectivization and terror, Khrushchev’s de-Stalinization campaign, stagnation under Brezhnev, and Gorbachev’s attempts at radical reform.

5. Complete proposed course title and proposed course description (not to exceed 50 words): Soviet Union 1917-1991. Political and social evolution of the Soviet system; the Russian Revolution and consolidation of Bolshevik power; Civil War; power struggles among Lenin’s successors; Stalin’s industrial revolution, collectivization, and terror; Khrushchev’s de-Stalinization campaign; stagnation under Brezhnev; Gorbachev’s attempts at radical reform; the collapse of the Soviet Union.

6. a. As currently in course inventory:

<table>
<thead>
<tr>
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<th>Course #</th>
<th>Title (excluding punctuation)</th>
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<tr>
<td>HIST</td>
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<td>SOVIET UNION 1917 - PRESENT</td>
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<td>1 4 5 0</td>
<td>0 0 3 6 3 2</td>
<td>4</td>
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<td>HIST</td>
<td>412</td>
<td>SOVIET UNION 1917 - 1991</td>
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<th>Acad. Year</th>
<th>FICE Code</th>
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<td>1 4 5 0</td>
<td>0 9 - 1 0 0 3 6 3 2</td>
<td>4</td>
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   Approval recommended by: ____________________________ Date: 7/14/08

   Chair, College Review Committee ____________________________ Date: 8/16/08

   Dean of College ____________________________ Date: 9/24/08

   Submitted to Coordinating Board by:

   Dear of College ____________________________ Date: ____________________________

   Effective Date ____________________________

   Questions regarding this form should be directed to Sandra Williams at 845-8201.
   Curricular Services – 11/07
August 11, 2008

Supporting statement for changes made to both the title and course description for HIST 412.

The new title and description reflect the fact that the Soviet Union collapsed in 1991.

Thank you,

David Vaught  
Associate Department Head
Purpose:

This course provides an understanding of the historical and related social, cultural, economic, and political processes that led Russia into revolution in 1917, shaped socialist society under the Soviet Union, and finally led to the collapse of communism in Russia and the disintegration of the Soviet empire.

Prerequisites:

Junior or senior classification

W-Course:

This is a university-approved “W” Course, meaning that writing instruction will receive special emphasis. Through a wide range of methods, approaches, and strategies—lecture, discussion, in-class laboratories devoted exclusively to the difficult process of crafting successful papers, and one-on-one meetings during office hours—students will have the opportunity to greatly enhance their writing abilities. History majors entering the program under the 2007-2008 catalog are required to take two “W” courses—this course meets one of those requirements. History majors entering the program earlier and students in other majors are more than welcome as well.

Requirements:

1) There will be three tests including the final. All the tests consist of two parts, essay questions over the lecture material, and essays on the books.

   Test #1 will be February 16
   Test #2 will be March 30
   Test #3 (see university final exam schedule)

2) Each student will write a 2500-3000 word (10-12 pages) research paper.

   Paper topics are due on February 2
   First drafts are due on March 9
   Final drafts are due on April 20
Grading:

The first two tests are each worth 20% of the course grade, while the final is worth 25%. The research paper is worth 35%.

Final Grading Scale (based on points):

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<th>Points</th>
<th>Grade</th>
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<tr>
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<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>59 &amp; below</td>
<td>F</td>
</tr>
</tbody>
</table>

Attendance Policy:

Attendance is mandatory. Students will be penalized after more than three absences, except in the case of university-excused absences. For each unexcused absence after that, your final grade will be dropped by ten percentage points. Assignments that are submitted late will receive a grade of zero except in the case of university-excused absences or by prior arrangement with the instructor.

Please see http://student-rules.tamu.edu/rule7.htm for current policy on university-excused absences. For illness- or injury-related absences of fewer than three days, a note from a health care professional confirming date and time of visit will be required in order to count the absence as university-excused; for absences of three days or more, the note must also contain the medical professional’s confirmation that absence from class was necessary (see Rule 7.1.6.1).

Required Texts:

Ronald Suny, *The Soviet Experiment*
Fitzpatrick and Slezkine, *In the Shadow of Revolution*
Robert Thurston, *Life and Terror in Stalin’s Russia*
Nicolas Werth, *Cannibal Island*
Vojtech Mastny, *The Cold War and Soviet Insecurity*

Writing Laboratories:

Three Writing Laboratories are scheduled over the course of the semester to help guide students through the three critical stages of a term paper: pre-writing, drafting, and revision.

Writing Laboratory I: Pre-Writing

How does one begin? In this lab, we will discuss how to choose a topic that will be of sustained interest to you, how to find appropriate primary and secondary
sources on that topic that will inform your thinking about and provide evidence for your final paper, how to take notes while reading (an extremely important but often neglected strategy and skill), and how, in general, to stay focused while still being unsure of the paper’s central theme and supporting statements.

Writing Laboratory II: Drafting

Now that you have your evidence, how do you begin writing? In this lab, we will discuss the value of outlining, writing rough drafts, and developing strong thesis statements. The thesis statement (or central claim or central theme) is the crucial part of your paper. Stated properly and forcefully, it will provide structure to your essay and offer a ‘preview’ of essay’s argument and organization. We will also discuss common problems that occur in undergraduate student papers –especially verb/noun and noun/adjective agreement, proper use of punctuation, and the perils of relying on computerized spell-checker programs. We will also discuss appropriate citation formats for historical papers.

Writing Laboratory III: Revision

If you are in the habit of writing your papers in a single sitting just before they are due, you are denying yourself the pleasure of discovering your true writing abilities. Everything happens after the first draft, especially the emergence of a strong thesis. Often a writer only figures out his/her central argument after completing a first draft. Indeed, it is not unusual for the thesis statement to emerge in the conclusion of a first draft. Writing Laboratory III is intended to help students understand exactly how to convert their first drafts into the best possible paper.

Study Guide and Class Schedule

For the first test read: Suny, *The Soviet Experiment*, chapters 1 & 2; Fitzpatrick and Slezkine, *In the Shadow of Revolution*.

Week 1; Jan 17, 19: Pre-Revolution Society and government
   Jan 19: **Writing Workshop I**

Week 2; Jan 24, 26: The Revolutionary Movement; The February Revolution

Week 3; Jan 31, Feb 2: Dual Power and the build up to October.
   Feb 2: **Paper topics due**

Week 4; Feb 7, 9: The October Revolution; the civil war

Week 5; Feb 14: Establishing Bolshevik power, War Communism
   Feb 16: **TEST #1**

Week 6; Feb 21: The New Economic Policy; the Power Struggle, 1921-28
   Feb 23: **Writing Workshop II**

Week 7; Feb 28, March 2: Power struggle, 1921-1928, First Five-Year Plan, 1928-32
Week 8; March 7, 9: Collectivization, 1929-38.
   March 9: **First draft of paper due**

Week of March 13-17: Spring Break
Week 9; March 21, : The purges and the party under Stalin
   March 23: **Writing Workshop III**

Week 10; March 28: Foreign policy, 1922-1939; World War II
   March 30: **TEST #2**

For the final exam read: Suny, *The Soviet Experiment*, chapters 11-22; Mastny, *The Cold War and Soviet Insecurity*.

Week 11; April 4, 6:; Post-war Stalinism; Khrushchev Era, 1953-64
Week 12; April 11, 13: The Khrushchev Era continued
Week 13; April 18, 20: The Brezhnev Era, 1964-85
   April 20: **Rewrite of paper due.**

Week 14; April 25, 27: Gorbachev and the collapse of the USSR, 1985-91

**Final exam:** see university final exam schedule

**Plagiarism:**

Academic Integrity: “*An Aggie does not lie, cheat, or steal, or tolerate those who do.*”
You are expected to be aware of the Aggie Honor Code and the Honor Council Rules and Procedures, stated at http://www.tamu.edu/aggiehonor.

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Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
Submit original form and attachments.

1. This request is submitted by the Department of ___ College of Liberal Arts

2. Course prefix, number and complete title of course: LBAR 181: Freshman Honors Seminar in the Liberal Arts

3. Change requested
   a. Prerequisite(s): From: Freshman or Sophomore Classification
       To: Freshman or Sophomore Classification
   b. Withdrawal (reason): 
   c. Cross-list with:

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

   d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.

   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description: LBAR 181: Freshman Honors Seminar in the Liberal Arts
   Freshman seminar on interdisciplinary topics of interest in the humanities and social sciences with an introduction to honors study in the liberal arts. Must be taken on a satisfactory/unsatisfactory basis. Restricted to students in the College of Liberal Arts and the General Studies Program. Prerequisite: Freshman or sophomore classification.

5. Complete proposed course title and proposed course description (not to exceed 50 words): LBAR 181: First-Year Seminar in the Liberal Arts.
   First-year seminar on interdisciplinary topics of interest in the humanities and social sciences. May be taken on a satisfactory/unsatisfactory basis. Prerequisite: Freshman or sophomore classification; approval of the Dean of Liberal Arts.

6. a. As currently in course inventory:

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<th>Title (excluding punctuation)</th>
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</table>

Approval recommended by: 

[Signature]

Head of Department Date

Chair, College Review Committee Date

Dean of College Date

Head of Department (if cross-listed course) Date

Submitted to Coordinating Board by:

[Signature]

Associate Director, Curricular Services Date

Dean of College Date

Date Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
TO: University Curriculum Committee

THROUGH: Dr. Pamela Matthews
Associate Dean

FROM: Dr. Donald J. Curtis, Jr.
Assistant Dean

DATE: August 12, 2008

RE: Request for Change in Course

The College of Liberal Arts is requesting a change in the following courses: LBAR 181, LBAR 203, LBAR 204, and LBAR 381. We are removing the requirement that they must be taken as Honors courses. For LBAR 181, we are also asking that the course have the option of being offered for a grade in future semesters.
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
Submit original form and attachments.

1. This request is submitted by the Department of ____________________________
   College of Liberal Arts

2. Course prefix, number and complete title of course: LBAR 203 Foundations of the Liberal Arts - Humanities
   Attach a brief supporting statement for changes made to items 3a thru 3d, and 5 below.

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 4; enter proposed course title and proposed course description in item 5.
   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description:
   LBAR 203 Foundations of the Liberal Arts - Humanities

The intellectual roots and characteristic values and methods of liberal arts studies with emphasis on humanities disciplines. Offered as an honors course only. Restricted to students in the College of Liberal Arts and the General Studies Program. Prerequisite: Approval of the Dean of Liberal Arts.

5. Complete proposed course title and proposed course description (not to exceed 50 words):
   LBAR 203 Foundations of the Liberal Arts - Humanities

The intellectual roots and characteristic values and methods of liberal arts studies with emphasis on humanities disciplines. Prerequisite: Approval of the Dean of Liberal Arts.

6. a. As currently in course inventory:

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Approval recommended by: ____________________________
Head of Department Date: ______________
Chair, College Review Committee Date: ______________
Head of Department (if cross-listed course) Date: ______________
Dean of College Date: ______________

Submitted to Coordinating Board by: ____________________________
Dean of College Date: ______________

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
TO: University Curriculum Committee

THROUGH: Dr. Pamela Matthews
Associate Dean

FROM: Dr. Donald J. Curtis, Jr.
Assistant Dean

DATE: August 12, 2008

RE: Request for Change in Course

The College of Liberal Arts is requesting a change in the following courses: LBAR 181, LBAR 203, LBAR 204, and LBAR 381. We are removing the requirement that they must be taken as Honors courses. For LBAR 181, we are also asking that the course have the option of being offered for a grade in future semesters.
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
• Submit original form and attachments •

1. This request is submitted by the Department of College of Liberal Arts

2. Course prefix, number and complete title of course: LBAR 204 Foundations of the Liberal Arts - Social Science

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 4; enter proposed course title and proposed course description in item 5.
   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description:
   LBAR 204 Foundations of the Liberal Arts - Social Science
   The intellectual roots and characteristic values and methods of liberal arts studies with emphasis on social science disciplines. Offered as an honors course only. Restricted to students in the College of Liberal Arts and General Studies Program. Prerequisite: Approval of the Dean of Liberal Arts.

5. Complete proposed course title and proposed course description (not to exceed 50 words):
   LBAR 204 Foundations of the Liberal Arts - Social Science
   The intellectual roots and characteristic values and methods of liberal arts studies with emphasis on social science disciplines. Prerequisite: Approval of the Dean of Liberal Arts.

6. a. As currently in course inventory:

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Approval recommended by: __________________________
Head of Department __________________________ Date 8/18/05
Chair, College Review Committee __________________________ Date 8/15/05

Head of Department (if cross-listed course) __________________________ Date
Dean of College __________________________ Date 9/24/05

Submitted to Coordinating Board by: __________________________
Associate Director, Curricular Services __________________________ Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
TO: University Curriculum Committee

THROUGH: Dr. Pamela Matthews  
Associate Dean

FROM: Dr. Donald J. Currier  
Assistant Dean

DATE: August 12, 2008

RE: Request for Change in Course

The College of Liberal Arts is requesting a change in the following courses: LBAR 181, LBAR 203, LBAR 204, and LBAR 381. We are removing the requirement that they must be taken as Honors courses. For LBAR 181, we are also asking that the course have the option of being offered for a grade in future semesters.
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
• Submit original form and attachments •

1. This request is submitted by the Department of College of Liberal Arts

2. Course prefix, number and complete title of course: LBAR 381 Junior Seminar: Interdisciplinary Honors Seminar

3. Change requested
   a. Prerequisite(s): From: ____________________________ To: ____________________________
   b. Withdrawal (reason): ____________________________
   c. Cross-list with: ____________________________

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

   d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.

   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description:

   LBAR 381 Junior Seminar: Interdisciplinary Honors Seminar

   Interdisciplinary studies in the humanities and the social sciences. Fulfills the junior seminar requirement of the Liberal Arts honors Plan. May be repeated for credit. Restricted to students in the College of Liberal Arts and the General Studies Program. Prerequisite: Approval of the Dean of Liberal Arts.

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

   LBAR 381 Junior Seminar: Interdisciplinary Seminar

   Interdisciplinary studies in the humanities and the social sciences. May be repeated for credit. Prerequisite: Approval of the Dean of Liberal Arts.

6. a. As currently in course inventory:

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   b. Change to:

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</table>

   Approval recommended by: ________________ Date ________________

   Chair, College Review Committee
   Date ________________

   Head of Department
   Date ________________

   Dean of College
   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.
Curricular Services – 11/07
TO: University Curriculum Committee

THROUGH: Dr. Pamela Matthews
Associate Dean

FROM: Dr. Donald J. Curtis Jr.
Assistant Dean

DATE: August 12, 2008

RE: Request for Change in Course

The College of Liberal Arts is requesting a change in the following courses: LBAR 181, LBAR 203, LBAR 204, and LBAR 381. We are removing the requirement that they must be taken as Honors courses. For LBAR 181, we are also asking that the course have the option of being offered for a grade in future semesters.
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
Submit original form and attachments •

1. This request is submitted by the Department of
   Civil Engineering

2. Course prefix, number and complete title of course: OCEN 201 Introduction to Ocean Engineering

3. Change requested
   a. Prerequisite(s): From: ___________________________ To: ___________________________
   b. Withdrawal (reason): ___________________________
   c. Cross-list with: ___________________________

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

d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.

c. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description: Introduction to Ocean Engineering. Survey of ocean engineering; concepts and theories of wave-structure interaction; sources of technical information; coastal and ocean structures, moorings, laboratory models; underwater systems; naval architecture; recent developments in ocean engineering.

5. Complete proposed course title and proposed course description (not to exceed 50 words): Introduction to Ocean Engineering. Survey of ocean engineering; concepts and theories of wave-structure interaction; sources of technical information; coastal and ocean structures, moorings, laboratory models; underwater systems; naval architecture; ocean instrumentation; materials and corrosion; hydrographic surveying and positioning, recent developments in ocean engineering.

6. a. As currently in course inventory:

   Prefix | Course # | Title (excluding punctuation) | Lec. | Lab | SCH | CIP and Fund Code | Admin. Unit | FICE Code | Level |
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   b. Change to:

   Prefix | Course # | Title (excluding punctuation) | Lec. | Lab | SCH | CIP and Fund Code | Admin. Unit | Acad. Year | FICE Code | Level |
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Approval recommended by: [Signature] Aug 15, 2008

Head of Department Date

Chair, College Review Committee Date

Dean of College Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services

Date  Effective Date
Request: Change OCEN 201 (2 credit hours) to OCEN 201 (3 credit hours)

Reason: Make the course more technical and less survey. Add topics of hydrographic surveying, ocean instrumentation, and materials and corrosion.
OCEN 201 INTRODUCTION TO OCEAN ENGINEERING

Lectures: MW 4:10-5:25 pm CE 110
Lecturer: Dr. Jun Zhang E-mail: jzhang@civil.tamu.edu
CE/TTI 808E Telephone: 845-2168
Office hours: (3:00 – 4:00 pm MW, 4:00 – 5:00 pm F)


Objectives: Learn various aspects and issues of Coastal and Ocean Engineering, learn fundamentals of engineering principles applied to Coastal and Ocean Engineering problems, learn various projects, research topics, societies, regulations and rules, design recommendations, and model and field testing etc.

Course Description: Credits (3-0) Introduction to Ocean Engineering. Survey of ocean engineering; concepts and theories of wave-structure interaction; sources of technical information; coastal and ocean structures, moorings, laboratory models; underwater systems; naval architecture; ocean instrumentation; materials and corrosion; hydrographic surveying and positioning, recent developments in ocean engineering.

Prerequisite: CVEN 221 or approval by the instructor.

Course Syllabus

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<tr>
<td>1</td>
<td>Overview of Ocean Engineering, History of Ocean Engineering, Application Areas, Employers, Technical References, Professional Societies.</td>
<td>Chapter 1</td>
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<td>The Ocean Environment, Ocean Currents and Tides, Ocean Waves, Linear Wave Theory, Wave Energy</td>
<td>Chapter 2</td>
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<tr>
<td>3</td>
<td>Offshore Structures, Drilling and Producing Gas and Oil, Types of Offshore Structures</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>4</td>
<td>Offshore Structures, Wave Forces on Structures, Morison Equation, Marine Foundations</td>
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<tr>
<td>5</td>
<td>Coastal Processes and Structures, Wave Refraction and Diffraction, Wave Forecasting and Hindcasting</td>
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<td>Coastal Processes &amp; Structures, Beaches, Sediment transport, Dredging, Ports, Harbors and Marinas</td>
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<td>Ocean Materials and Corrosion</td>
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<td>Floating and Submerged Bodies, Nautical Terminology, Hydrostatics</td>
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<td>11</td>
<td>Hydrographic Surveying</td>
<td>Handout</td>
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<td>Instrumentation for Ocean Engineers, Current Meter, Wave Gauges, Water Samplers, CTD/DO Instruments</td>
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<td>FINAL EXAM, Monday, 3:30-5:30 pm</td>
<td>Final Exam</td>
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**Homework:** The HW assignments must be handed in by the due date at the beginning of class. HW performance will be properly taken into account in the final course grade. Late HW without excuses approved by TAMU or the instructor will be penalized by taking away at least 50% of deserved points.

**Exams:** One mid-term and one final exam will be given. The date of the mid-term exam will be announced at least one week earlier in the class. The grading of exams will be based on both the approach and the final answer.

**Course Grade:** The final grade in the course if based on our best assessment of your understanding of material and participation during the semester. The final score consists of: problem assignments - 20%, attendance (pop quiz) 10%, midterm exam - 20%, design project - 15%, Final Exam - 35%. However, other factors, such as interaction with the teacher, participation in lecture and recitation, etc. can make a significant difference in the final grade when your score is “on the line.”

**ABET OUTCOMES SATISFIED**
Outcome a – Graduates have the ability to apply knowledge of mathematics, science, and engineering science.
Outcome c – Graduates have the ability to design a system, component, or process to meet desired needs.
Outcome d – Graduates have the ability to function on multidisciplinary teams.
Outcome e – Graduates have the ability to identify, formulate, and solve engineering problems.
Outcome k – Graduates have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Outcome l – Graduates have the ability to apply hydrostatics, water wave mechanics, underwater acoustics, basic oceanography, and probability and statistics.
Outcome m – Graduates have the ability to work in groups to perform engineering design at the system level, integrating multiple technical areas and addressing design optimization for ocean engineering systems.

**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 the Department of Student Life, Services for Students with Disabilities in Room B118 of Cain Hall or call 845-1637.

**AGGIE HONOR CODE**
*“An Aggie does not lie, cheat, or steal or tolerate those who do.”* Students are expected to understand and abide by the Aggie Honor Code presented on the web at: [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor) No form of scholastic misconduct will be tolerated. Academic misconduct includes cheating, fabrication, falsification, multiple submissions, plagiarism, complicity, etc. These are more fully defined in the above web site. Violations will be handled in accordance with the Aggie Honor System Process described on the web site.
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
• Submit original form and attachments •

1. This request is submitted by the Department of Civil Engineering

2. Course prefix, number and complete title of course: OCEN 301 Dynamics of Offshore Structures

3. Change requested
   a. Prerequisite(s): From: ________________________ To: ________________________
   b. Withdrawal (reason): ________________________
   c. Cross-list with: ________________________
   Cross-listed courses require the signature of both department heads.
   d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.
   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description: Dynamics of Offshore Structures. Prediction of loads due to wind, current and waves; introduction to concepts of linear structural dynamics and to the design of ocean structures; mooring and towing analysis; fluid-structure interactions; vibration of submerged structures.

5. Complete proposed course title and proposed course description (not to exceed 50 words): Dynamics of Offshore Structures. Prediction of loads due to wind, current and waves; introduction to concepts of linear structural dynamics and to the design of ocean structures; mooring and towing analysis; fluid-structure interactions; vibration of submerged structures; offshore pipelines; introduction to risk analysis.

6. As currently in course inventory:

   Prefix  Course #  Title (excluding punctuation)  Lect.  Lab  SCH  CIP and Fund Code  Admin. Unit  FICE Code  Level
   OCEN  301  DYNAMICS OF OFFSHORE STRUCT  0  3  0  0  0  3  1  4  2  4  0  1  0  0  0  6  0  6  3  0  0  0  3  6  3  2  3

   Change to:

   Prefix  Course #  Title (excluding punctuation)  Lect.  Lab  SCH  CIP and Fund Code  Admin. Unit  Acad. Year  FICE Code  Level
   OCEN  403  DYNAMICS OF OFFSHORE STRUCT  0  3  0  0  0  3  1  4  2  4  0  1  0  0  0  6  0  6  3  0  9  -  1  0  0  0  3  6  3  2

   Approval recommended by:
   Head of Department  Date
   [Signature]
   Aug 15, 2008
   Chair, College Review Committee  Date
   [Signature]
   9/26/08
   Dean of College  Date
   [Signature]
   9/26/08

   Submitted to Coordinating Board by:
   Associate Director, Curricular Services  Date
   SEP 28 2008
   CURRICULUM SERVICES
Request: Change OCEN 301 to OCEN 403

Reason: Course is listed in the senior year of the Ocean Engineering curriculum so the course should be a senior level course.
OCEN 403 Dynamics of Offshore Structures

Course Description: OCEN 403. Dynamics of Offshore Structures (3-0) Credit 3. I. Dynamics of Offshore Structures. Prediction of loads due to wind, current and waves; introduction to concepts of linear structural dynamics and to the design of ocean structures; mooring and towing analysis; fluid-structure interactions; vibration of submerged structures; offshore pipelines; introduction to risk analysis.

Prerequisites: OCEN300 or approval of instructor; CVEN 345, CVEN 363 or registration therein

Textbook: No textbook; Supplementary course material

References: Elements of Vibration Analysis (by Meirovitch, McGrawHill), Dynamics of Offshore Structures (by M.H. Patel, Butterworths) WOW electronic textbook on wave force

Instructor: “Joseph” M.H. Kim, Professor of Ocean and Civil Engineering, CE/TTI 802D, m-kim3@tamu.edu, 847-8710, http://ceprofs.tamu.edu/mhkim, Office Hours: MW 4:00-5:00pm

Course Syllabus

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<tr>
<th>Week</th>
<th>Topics</th>
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<td>Energy methods, Single degree of freedom (1DOF) linear system: free vibration</td>
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<td>Single degree of freedom (1DOF) linear system: forced vibration</td>
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<td>Continuous systems (cable, riser, beam)</td>
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<td>8</td>
<td>Rules and regulations for various offshore structures; design considerations / dimensional analysis</td>
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<td>9</td>
<td>Review of regular and random waves; wind and current loading</td>
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<td>10</td>
<td>Wave loads on slender structures (Morison equation)</td>
<td>Assignment 4</td>
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<td>Wave loading on floating bodies (stability, added mass &amp; wave damping)</td>
<td>Assignment 5 (mini-term design project)</td>
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<td>Frequency- vs. time-domain analyses; Exam #2</td>
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<td>Deterministic and stochastic design methods (time series, spectra); offshore pipelines</td>
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<td>Elementary mooring analyses</td>
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<td>Ocean renewable energy; risk assessment for offshore structures</td>
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<td>16</td>
<td>Final Exam</td>
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Course Objectives:
1) Learn fundamentals on linear dynamics and vibration analysis.
2) Understand the principles of wave-wind-current loading calculation methods.
3) Learn deterministic and stochastic design approach.
4) Learn current issues and problems.
5) Learn how to apply basic engineering principles to real design problems.

Grading Distribution: Homework:15%, Mini-Project:10%, Two Exams:45%, Final Exam:30%.
Late assignment submission and class-absence penalized proportionally.

ABET Outcomes:
Outcome a – Graduates have the ability to apply knowledge of mathematics, science, and engineering science.
Outcome c – Graduates have the ability to design a system, component, or process to meet desired needs.
Outcome d – Graduates have the ability to function on multidisciplinary teams.
Outcome e – Graduates have the ability to identify, formulate, and solve engineering problems.
Outcome l – Graduates have the ability to apply hydrostatics, water wave mechanics, underwater acoustics, basic oceanography, and probability and statistics.
Outcome m – Graduates have the ability to work in groups to perform engineering design at the system level, integrating multiple technical areas and addressing design optimization for ocean engineering systems.

Academic Integrity Policy: “An Aggie does not lie, cheat, or steal or tolerate those who do.” Students are expected to understand and abide by the Aggie Honor Code presented on the web at: http://www.tamu.edu/aggiehonor No form of scholastic misconduct will be tolerated. Academic misconduct includes cheating, fabrication, falsification, multiple submissions, plagiarism, complicity, etc. These are more fully defined in the above web site. Violations will be handled in accordance with the Aggie Honor System Process described on the web site.

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 the Department of student Life, Services for Students with Disabilities in Room B118 of Cain Hall, or call 845-1637.
This request is submitted by the Department of **Civil Engineering**

Course prefix, number and complete title of course: **OCEN 400 Basic Coastal Engineering**

Change requested

- Prerequisite(s): From: ___________________________ To: ___________________________
- Withdrawal (reason): ___________________________
- Cross-list with: __________________________________

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

- Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.
- Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. **Attach a course syllabus.**

Complete current course title and current course description: Basic Coastal Engineering Description: Mechanics of wave motion; wave refraction, diffraction and reflection; wave forecasting; shore processes; planning of coastal engineering projects; design of seawalls, breakwaters and fixed offshore installations; offshore pipelines; dredging; control of oil spills in estuaries and at sea.

Complete proposed course title and proposed course description (not to exceed 50 words): Basic Coastal Engineering. Mechanics of wave motion; wave refraction, diffraction and reflection; wave forecasting; shore processes; planning of coastal engineering projects; design of seawalls, breakwaters and fixed offshore installations; coastal pipelines; dredging; control of oil spills in estuaries and at sea; introduction to risk analysis.

As currently in course inventory:

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Approval recommended by:

**Jun Zhang**  Aug. 15, 2008

Head of Department  Date

Head of Department (if cross-listed course)  Date

Submitted to Coordinating Board by:

**Associate Director, Curricular Services**  Date

**Effective Date**
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
• Submit original form and attachments •

1. This request is submitted by the Department of

2. Course prefix, number and complete title of course: OCEN 408 Underwater and Moored System Design

3. Change requested
   a. Prerequisite(s): From: To:
   b. Withdrawal (reason):
   c. Cross-list with:

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

d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.

e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description: Underwater and Moored System Design. Basic principles of thermodynamics, fluid dynamics and human respiration physiology applied to design of underwater habitats, submersibles and diving bells; breathing gas supply for diving systems; heat transfer for underwater systems; pressure vessel design; remotely operated vehicles; and design of towed and moored systems.

5. Complete proposed course title and proposed course description (not to exceed 50 words): Underwater and Moored System Design. Basic principles of thermodynamics, fluid dynamics and human respiration physiology applied to design of underwater habitats, submersibles and diving bells; breathing gas supply for diving systems; heat transfer for underwater systems; pressure vessel design; remotely operated vehicles; subsea flowlines and manifold systems; and design of towed and moored systems.

6. a. As currently in course inventory:

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b. Change to:

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Approval recommended by: Jim Zhang

Head of Department
Aug. 15, 2008

Chair, College Review Committee

Dean of College
9/28/08

Head of Department (if cross-listed course)
Date

Dean of College
Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services

Date

Effective Date
Texas A&M University
Departmental Request for a Change in Course
Undergraduate + Graduate + Professional
Submit original form and attachments

1. This request is submitted by the Department of ____________________________

2. Course prefix, number and complete title of course: OCEN 462 Hydromechanics

3. Change requested
   a. Prerequisite(s): From: ____________________________ To: ____________________________
   b. Withdrawal (reason): ____________________________________________________________
   c. Cross-list with: _________________________________________________________________
    Cross-listed courses require the signature of both department heads.
   d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.
   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.

4. Complete current course title and current course description:

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

6. a. As currently in course inventory:
   Prefix  Course #  Title (excluding punctuation)
   OCEN  462  Hydromechanics
   Lect.  Lab  SCH  CIP and Fund Code  Admin. Unit  FICE Code  Level
   03 00 03 14 11 01 00 06 06 30 00 36 32 4
   b. Change to:
   Prefix  Course #  Title (excluding punctuation)
   OCEN  362  Hydromechanics
   Lect.  Lab  SCH  CIP and Fund Code  Admin. Unit  Acad. Year  FICE Code
   03 00 03 14 11 01 00 06 06 30 00 36 32 3

   Approval recommended by:
   ____________________________ Aug. 15, 2008 ____________________________ 9/26/08
   Head of Department  Date  Chair, College Review Committee  Date
   Head of Department (if cross-listed course)  Date  Dean of College  Date

   Submitted to Coordinating Board by:
   ____________________________ ____________________________
   Associate Director, Curricular Services  Date  Effective Date
Request: Change OCEN 462 to OCEN 362

Reason: Course is listed in the junior year of the Ocean Engineering curriculum so the course should be a junior level course.
OCEN 362 Hydromechanics  
Course Syllabus

Instructor: Dr. Kuang-An Chang  
Office: 802C CE/TTI  
Phone: (979) 845-4504  
Webpage: http://ceprofs.tamu.edu/kchang/  
Email: kchang@tamu.edu


Course Description: Kinematics of fluids; incompressible, irrotational and turbulent flow; Navier-Stokes equations; flow of viscous fluids.

Prerequisites: CVEN 311; MATH 308

Course Website: http://ceprofs.tamu.edu/kchang/ocen362/ocen362.htm

Office Hours: Thur. 2:00 – 4:00; or by appointment (refer to my weekly schedule posted on my webpage for best time to meet)

Reading Assignments: You are responsible for reading the relevant material in the text covered in lecture.

Grading Policy:  
Homework  
Exam 1  
Exam 2  
Final Exam  
10%  
30%  
30%  
30%

Ground Rules:  
Homework: Students may work together on homework assignments, and are encouraged to help one another. Blind copying of assignments is not permitted, and will receive zero credit.

Homework is due on the assigned day at the beginning of the class. Homework solutions are posted on the due day right after the class. No late homework will be accepted. For valid university excuse, exceptions are granted only if you notify your instructors in advance when possible. Please do not ask me for exceptions.

Exams: Two 100-minutes evening examinations and a two-hour final examination are scheduled (see the course calendar given below). Unexcused absences will result in a grade of zero for missed examinations. The exams are closed book. You are allowed to bring in one single-sided letter size paper with your own notes and formulas. No other resources are permitted in the exams.

Regrading: Request for regrading an exam or homework must be done within one week after the exam or homework is returned.

Attendance: There may be a sign-in sheet at some classes. Attendance and class activity will be counted in the final grading when your score is on the borderline.
Objectives:
1) A second exposure to students to give fluid mechanics with emphasis on principles and more advanced analysis
2) Vector algebra in the derivation of the fundamental laws of mass conservation, linear momentum and energy conservation laws
3) Emphasis on the kinematics of the fluid element to lead to compressibility, rotational and irrotational fluid flow and strain rate
4) Euler equation and velocity potential for steady inviscid flows applied to practical flow problems
5) Laminar viscous flow Navier-Stokes equation and boundary layer theory applicable to skin friction

ABET Outcomes:
Outcome a – Graduates have the ability to apply knowledge of mathematics, science, and engineering science.
Outcome e – Graduates have the ability to identify, formulate, and solve engineering problems.

Aggie Honor Code: “An Aggie does not lie, cheat, or steal or tolerate those who do.”
Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit: http://www.tamu.edu/aggiehonor/.

Americans with Disabilities Act (ADA) Policy Statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.
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<th>MTG</th>
<th>TOPIC</th>
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<td>Pressure Variation in a Fluid at Rest</td>
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<td>Pressure Variation in a Fluid with Rigid Body Motion</td>
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<td>Rapidly Varied Flow - Broad-Crested Weirs</td>
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<td>Rapidly Varied Flow - Underflow Gates</td>
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<td>Final Examination</td>
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Texas A&M University  
Departmental Request for a Change in Course  
Undergraduate • Graduate • Professional  
• Submit original form and attachments  

1. This request is submitted by the Department of  

   Physics  

2. Course prefix, number and complete title of course:  

   PHYS 302 Advanced Mechanics  

3. Change requested  

   MATH 308 and registration in MATH 311;  

   a. Prerequisite(s): From: PHYS 219  

   b. Withdrawal (reason): N/A  

   c. Cross-list with: N/A  

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

   d. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.  

   e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 6. Attach a course syllabus.  

4. Complete current course title and current course description:  

   PHYS 302 Advanced Mechanics. Motion of a particle in various force fields, systems of particles, rigid body motion, coupled oscillators and accelerated frames of reference.  

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

   PHYS 302 Advanced Mechanics I. Classical mechanics of particles and rigid bodies, both by direct application of Newton’s equations and by Lagrangian methods; applications to gravity and other central forces, coupled oscillators, non-inertial reference frames, and the statics and dynamics of fluids with and without viscosity; introduction to statics of structures.  

6. a. As currently in course inventory:  

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<tr>
<th>Prefix</th>
<th>Course #</th>
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   Approval recommended by:  

   Head of Department  
   Date  

   Chair, College Review Committee  
   Date  

   Head of Department (if cross-listed course)  
   Date  

   Dean of College  
   Date  

   Submitted to Coordinating Board by:  

   Dean of College  
   Date  

   Associate Director, Curricular Services  
   Date  

   Effective Date  

   Questions regarding this form should be directed to Sandra Williams at 845-8201.  

Curricular Services – 11/07
Proposed Syllabus
Physics 302 - Advanced Mechanics 1

Physics 302, Fall 2009 (3 lecture hours per week)

Instructor: Prof. Wayne M. Saslow

Text: Classical Dynamics of Particles and Systems, by Marion and Thornton.

Grading: Regularly-graded homework (30%), one midterm (30% each) and a Final (40%).

Course Description - 302 - Advanced Mechanics 1. Classical mechanics of particles and rigid bodies, both by direct application of Newton's equations and by Lagrangian methods. Applications to gravity and other central forces, coupled oscillators, non-inertial reference frames, and the statics and dynamics of fluids with and without viscosity. Introduction to statics of structures.

Prerequisites: (a) Three terms of Calculus and one term of Ordinary Differential Equations. (b) Physics 218, 208, and 221. (c) Physics 331 and (concurrently) Physics 332. For students with other backgrounds, by permission of instructor.

Learning Outcomes: The student will be able to solve for the motion of a particle under gravity and other central forces, for the motion of a freely rotating symmetrical rigid body, for the effect of the earth's rotation on a falling body, for simple motion of fluids with and without viscosity, and for the stresses on a loaded beam.

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 Department of Student Life, Services for Students with Disabilities, in Room B118 of Cain Hall, 979-845-1637.


Description for Course Catalog

Physics 302 - Advanced Mechanics 1. Classical mechanics of particles and rigid bodies, both by direct application of Newton's equations and by Lagrangian methods. Applications to gravity and other central forces, coupled oscillators, non-inertial reference frames, and the statics and dynamics of fluids with and without viscosity. Introduction to statics of structures.
**Course Motivation:** The traditional undergraduate curriculum in Physics had six credit hours of Classical Mechanics. We are returning to that format after an experiment that lasted about fifteen years, of only having a single course with four credit hours. The longer format will enable us to teach certain difficult topics in more depth, will permit us to teach certain essentials of Fluid Mechanics and Statics that have been neglected, and will enable us to serve the B.A. community better, since only Physics 302, the first semester of this two semester sequence, will be required for the B.A. in Physics.

**Detailed Syllabus**

(FM=Fluid Mechanics, S=Statics)
Based on Text by Marion and Thornton

For the 1st time around, no matter who teaches the rest of the course, Saslow agrees to teach the FM and S lectures; he has been developing material that he is using for the graduate Classical Mechanics course, and will simplify it for the undergraduate course.

**Physics 302 - Advanced Mechanics I** (41 lectures)
Chapter 1 - Matrices, Vectors, and Vector Calculus (2 lectures)
Some of this should be covered in the first semester of Theoretical Methods.
Chapter 2 - Newtonian Mechanics - Single Particle (4 lectures)
Chapter 3 - Oscillations (3 lectures)
Fourier analysis should be covered in the first semester of Theoretical Methods.
Chapter 4 - Nonlinear Oscillations and Chaos (skip)
Chapter 5 - Gravitation (3 lectures)
Chapter 6 - Calculus of Variations (skip)
Chapter 7 - Lagrangian and Hamiltonian Dynamics (1 lecture)
Chapter 8 - Central Force Motion (4 lectures; omit 8.9-8.10)
Chapter 9 - Dynamics of a System of Particles (4 lectures; omit 9.9 and 9.10)
Chapter 10 - Motion in a Noninertial Reference Frame (3 lectures)
Chapter 11 - Dynamics of Rigid Bodies (5 lectures)
Chapter 12 - Coupled Oscillations (3 lectures; skip 12.8-12.9)
Chapter 13 - Continuous Systems; Waves (skip)
Chapter 14 - Special Theory of Relativity (skip)
Chapter FM1 - Statics and Dynamics of Ideal Fluids (3 lectures)
Continuity Equation. Bernoulli's Equation (no viscosity). Applies only along flow lines. For rotating bucket Bernoulli predicts a peak on rotation axis.
Chapter FM2 - Statics and Dynamics of Fluids with Viscosity (3 lectures)
For rotating bucket Navier-Stokes gets correct result: trough on rotation axis.
Poiseuille flow between plates.
Chapter S1 - Statics of Structures - (3 lectures)
Force and Moment along Rods.
How Structures Break, How Structures are Designed. 
Rod- and Chain-based Structures.
Texas A&M University
Departmental Request for a Change in Course
Undergraduate • Graduate • Professional
- Submit original form and attachments -

1. This request is submitted by the Department of Chemical Engineering

2. Course prefix, number and complete title of course: SENG 422 Fire Protection Facilities Design

3. Change requested
   a. Prerequisite(s): From: SENG 322 or approval of instructor To: Senior classification or junior classification with instructor approval of instructor
   b. Withdrawal (reason): 
   c. Cross-list with: Cross-listed courses require the signature of both department heads.

4. Change in course title and description. Enter complete current course title and current course description in item 4; enter proposed course title and proposed course description in item 5.
   a. Change in course title and current course description: Fire Protection Facilities Design: The design of facilities from a fire protection engineering viewpoint including fire detection & fire control systems. Special attention given to materials, equipment, exposures, occupancies & processes. Both public & industrial occupancies are studied to determine fire protection design specifications.

5. Complete proposed course title and proposed course description (not to exceed 50 words): Fire Protection Facilities Design: Fire protection design concepts and considerations for chemical, petrochemical, and hydrocarbon processing facilities. Specific attention given to fire hazard analysis, fire risk assessment, fire protection features, and emergency response. Specific fire protection design considerations are studied for the various types of facilities and processes.

6. a. As currently in course inventory:
   
   Prefix | Course # | Title (excluding punctuation) |
   ------ | -------- | ----------------------------- |
   SENG   | 422     | FIRE PROTECTION FAC DES       |
   
   Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | FICE Code | Level |
   0     | 3   | 0   | 0 0 0 1 4 0 1 0 0 6 | 0 5 9 0 | 0 3 6 3 2 | 4     |

   b. Change to:
   
   Prefix | Course # | Title (excluding punctuation) |
   ------ | -------- | ----------------------------- |
   
   Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | Acad. Year | FICE Code | Level |
   
   Approval recommended by: 
   Head of Department Date: 8/29/08
   Chair, College Review Committee Date: 9/16/08
   Dean of College Date: 9/16/08

   Submitted to Coordinating Board by: Associate Director, Curricular Services Date: 
   Dean of College Date: 

   Questions regarding this form should be directed to Sandra Williams at 845-8201.
Instructor
Dr. Thomas Sturtevant, CFPS 979 458-1821
Brayton Firefield, Building 103 thomas.sturtevant@teexmail.tamu.edu

Credit Hours: 3 Hours

Prerequisite(s): Approval from Instructor.

Required Textbook:

Meeting Information
Lectures will take place at Brayton Firefield, Henry D. Smith Building room 122C on Thursdays from 5:30pm to 8:00pm.

Hands-on activities will occur primarily at the Brayton fire field but will also include several field trips to various industrial facilities.

Course Description
Fire Protection design concepts and considerations for chemical, petrochemical, and hydrocarbon processing facilities. Special attention given to fire hazard analysis, fire risk assessment, fire protection features, and emergency response. Specific Fire Protection design considerations are studied for the various types of facilities and processes.

Course Goal
This course is intended to provide engineering students with an overview of important Fire Protection Engineering concepts and features as they relate to industrial chemical, petrochemical, and hydrocarbon processing facilities.

Course Objectives
Upon completion of this course, the student will be able to:
  Recognize hazards requiring fire protection attention.
  Discuss the function of fire protection design features.
  Compare and contrast passive and active fire protection systems.
  Assess the strengths and weaknesses of fire protection features as it relates to facility/process protection.
  Explain the steps in Fire Hazard Analysis and Fire Risk Assessment and relate the importance for both to fire protection design.
  Relate the importance of Fire Protection Engineering concepts to safety of facility and individuals.
Course Delivery
Lecture: Course delivery will include lecture using a wide variety of guest presenters from within the profession.

Hands-on: These activities will take place at the Brayton Fire field/local facilities and include:
- Fixed Systems Design and Inspection
- Fire extinguishers (extinguish a fire)
- Field trips to facility(s) to highlight fire protection design features

Assignments and Grading
Attendance/Participation (10%)
Attendance in this class is important since the group activities and labs rely on every member being present and make-up of labs and field trips will be difficult. If you must be absent, you are still responsible for the work due.

Paper/Presentation (30%)
Choose a chemical process/facility and conduct a fire hazard analysis and a fire risk assessment to include a discussion on proposed fire protection components and features. Additional information on this project will be provided on the first day of class.

Midterm and Final (60%)
Both a midterm and final exam will be administered as part of this course. The final exam will be comprehensive.

Summary
<p>| | |</p>
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<tr>
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<td>Final</td>
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<tr>
<td>Paper</td>
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</table>

90-100% Grade = A
80-89.9% Grade = B
70-79.9% Grade = C
60-69.9% Grade = D
< 60% Grade = F

Academic Honesty:
Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit: http://www.tamu.edu/aggiehonor

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

ADA Policy Statement:
The Americans with Disabilities Act (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, Services for Students with Disabilities in Room B118 of Cain Hall or call 845-1637.
Lecture

<table>
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<tr>
<th>WK</th>
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<th>Lec</th>
<th>Assignments</th>
<th>Speaker</th>
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</table>
| 1  | 8/28    | Introduction/Overview  
Fire Protection Engineering  
Management Overview  
Fire Protection Strategy | 3   | Chapter 1  
Chapter 2  
Chapter 3 | Sturtevant |
| 2  | 9/4     | Understanding Fires  
Fire Hazard Analysis  
Portable fire extinguishers | 3   | Appendix B  
Chapter 5 | Sturtevant |
| 3  | 9/11    | Overview of Fire Prevention Elements | 3   | Chapter 4 | Ron Peddy |
| 4  | 9/18    | Portable Fire Extinguishers | 3   | Fire Field | Gordon |
| 5  | 9/25    | Fire Risk Assessment | 3   | Chapter 6 | Bob Fisher |
| 6  | 10/2    | Fire Protection Fundamentals | 3   | Chapter 7 | Guest Speaker |
| 7  | 10/9    | Fire Protection Systems- Passive Systems | 3   | Chapter 7 | Guest Speaker |
| 8  | 10/16   | Fire Protection Systems- Active systems  
Midterm Exam | 3   | Chapter 7 | Guest Speaker |
| 9  | 10/23   | Specific Design Guidance  
Vapor Dispersion, Prop 66 | 3   | Chapter 8 | Guest Speaker |
| 10 | 10/30   | Specific Design Guidance | 3   | Chapter 8 | Guest Speaker |
| 11 | 11/6    | Installation of Fire Protection Systems  
Inspecting, Testing, and Maintenance | 3   | Chapter 9  
Chapter 10 | Rick Lewis |
| 12 | 11/13   | Fire Emergency Response | 3   | Chapter 11 | Robert Moore |
| 13 | 11/20   | Presentations | 3   | | Sturtevant/Panel |
| 14 | 11/27   | Thanksgiving Holiday | 3.5 | | |
| 15 | 12/4    | Reading – no class | 3.5 | | |
| 16 | 12/10   | Final Exam, from 3:30 to 5:00pm | 3.5 | | Sturtevant |
5 September 2008

MEMORANDUM

TO:       Dr. Jo W. Howze
          Associate Dean, Academic Programs
          Dwight Look College of Engineering

FROM:     Dr. David V. Rosowsky
          Department Head and A.P. and Florence Wiley Chair Professor

SUBJECT:  Proposed Changes to 2009-2010 Curriculum for Catalog 132

The Zachry Department of Civil Engineering proposes an updated undergraduate curriculum in the baccalaureate requirements for Civil Engineering for TAMU catalog 132 due to curriculum changes necessitated by changes in the ABET civil engineering program criteria. The proposed curriculum changes do not change either the total credit hour requirements or the credit hours in any of the primary subject areas. No changes are proposed to the freshman year.

We request the following changes:

1. change the math/science elective to a science elective
2. add BAEN 320 Engineering Thermodynamics as engineering science optional course
3. reduce Technical Electives hours from 35 to 33
4. add CVEN 424, Civil Engineering Professional Practice, 2 hour w-course to curriculum for all students
5. change note 3 to reduce technical elective hours to 33, add design as one of the technical elective categories, and add the requirement that design course must include design in more than one civil engineering context.
6. Add Engineering Project Management and International Engineering as available certificates for the degree

The marked curriculum is attached.
# CATALOG 131 CURRICULUM FOR BS, CIVIL ENGINEERING

## FRESHMAN YEAR

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<td>CHEM 107 Chemistry for Engineers</td>
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## SOPHOMORE YEAR

| CVEN 221 Engrg.Mech: Statics       | (2-2)   | 3    | CVEN 302 Computer Applications      | (3-0)   | 3    |
| STA 211 Principles of Statistics I | (3-0)   | 3    | CVEN 306 Materials for Civil Engineers | (2-2) | 3    |
| MATH 251 Engineering Mathematics III | (3-0)  | 3    | CVEN 305 Engrg. Mech. of Materials  | (3-0)   | 3    |
| CVEN 207 Intro to the Civil Engrg. Prof. | (1-0) | 1    | Directed Elective¹                   | 3       |      |
| Directed Elective¹                | 3       |      | MATH 308 Differential Equations     | (3-0)   | 3    |
| Writing Skills Elective²           | 3       |      |                                       |         | 15   |
|                                   |         | 16   |                                       |         | 15   |

## JUNIOR YEAR

| CVEN 363 Engrg Mech: Dynamics      | (2-2)   | 3    | MEEN 227, ELEN 215 or BAEN 320       | (2-2)   | 3    |
| CVEN 311 Fluid Dynamics            | (3-0)   | 3    | Technical Electives³                 |         | 11   |
| CVEN 345 Theory of Structures      | (3-0)   | 3    | Directed Electives¹                  |         | 3    |
| CVEN 322 Civil Engineering Systems II | (3-0) | 3    |                                       |         | 15   |
| Approved Math/Science Elective⁴    | 3       |      |                                       |         | 17   |
|                                   |         | 15   |                                       |         |      |

## SENIOR YEAR

| Technical Electives³               | 12      |       | ENGR 482 Ethics and Engineering⁵    | (2-2)   | 3    |
| Directed Electives³                | 3       | 12    | Technical Electives³                |         | 15   |
|                                   | 15      |       |                                       |         |      |

**NOTES:**

1. Of the 18 hours shown as directed electives, 3 must be from the visual and performing arts (V&PA), 3 from social and behavioral sciences (S&BS) and 12 from citizenship as described in "Directed Electives in Engineering." Note that each student must also complete two courses from the International & Cultural Diversity Group (see list in catalog). It is best if you choose the V&PA and S&BS electives to also satisfy this requirement.

2. This elective is to be selected from ENGL 203, 210, 241 or 301.

3. A total of 35 hours of technical electives is required. Technical electives are divided into two categories: breadth courses, and focus courses. The choice of courses to be taken in each of the two categories depends on the specialty area chosen and must be made in consultation with the student's advisor and/or the Civil Engineering Student Services Office.

4. Math/Science electives to be selected from an approved list and with approval of advisor.

5. All students must take at least two courses in their major that are designated as writing intensive (W). ENGR 482 and CVEN 424 taken at A&M satisfies this requirement. Other CVEN courses may be approved as W-courses at a later date.

6. Civil engineering students are required to earn a grade of C or better in all basic science, mathematics and engineering courses taken to satisfy degree requirements.

7. Civil engineering students should note that this curriculum specifies the minimum number of credits required for graduation. Additional hours may be taken.

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*May 2008 Undergraduate Student Handbook Page 11*
# Baccalaureate Curriculum in Civil Engineering

## Proposed Changes for Catalog 132 (2009-2010)

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<td>CVEN 321 Civil Engineering Systems</td>
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<td>BAEN 320 Engineering Thermodynamics,</td>
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<td>ECEN 215 Principles of Electrical Engr.</td>
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**NOTES:**

1. Of the 18 hours shown as directed electives, 3 must be from the visual and performing arts, 3 from social and behavioral sciences, 6 from U.S. history, and 6 from POLS 206 and 207. The required 6 hours from international and cultural diversity may be met by courses satisfying the visual and performing arts, social and behavioral sciences, and the political science and history requirements if they are also on the approved list for international and cultural diversity (see list in catalog).

2. This elective is to be selected from ENGL 203, 210, 241 or 301.

3. A total of 33 hours of technical electives is required. Technical electives are divided into two three categories: breadth courses, focus courses, and design courses. The choice of courses to be taken in each of the two three categories depends on the specialty area chosen and must be made in consultation with the student's advisor and/or the Civil Engineering Student Services Office. Design courses must include more than one civil engineering context.

4. Math/Science elective to be selected from an approved list and with approval of advisor.

5. Civil engineering students are required to earn a grade of C or better in all basic science, mathematics, and engineering courses taken to satisfy degree requirements.

6. Civil engineering students should note that this curriculum specifies the minimum number of credits required for graduation. Additional hours may be taken.

The Engineering Scholars Program, Honor Engineering Project Management, International Engineering, Business Management, and Safety Engineering Certificates are available for students pursuing this degree. See catalog for detailed information.
OCEAN ENGINEERING PROGRAM

August 15, 2008

MEMORANDUM

TO: Dr. Jo Howze, Senior Associate Dean
College of Engineering
Texas A&M University, MS 3127

THROUGH: Dr. David Rosowsky, Head
Zachry Department of Civil Engineering, MS 3136

FROM: Dr. Jun Zhang, Head
Ocean Engineering Program

SUBJECT: Request approval of New Ocean Engineering Undergraduate Curriculum for Catalog 132 (2009-10) and Course Changes

I request approval of the new Ocean Engineering Undergraduate Curriculum for Catalogue 132 (2009-10). The following changes are requested:

2. Change OCEN 462 to OCEN 362. Reason: Course is shown in junior year of OE curriculum so the course should be a junior level course.
3. Change OCEN 301 to OCEN 403. Reason: Course is shown in senior year of OE curriculum so it should be a senior level course. Change course description to include “offshore pipelines” and “introduction to risk analysis.”
4. Change OCEN 201 (2 cr) to OCEN 201 (3 cr). Add topics of hydrographic surveying and positioning, ocean instrumentation, and materials and corrosion. Reason: make course more technical and less survey. Reduce technical electives by 1 cr so that OE curriculum total credit hours remain at 131.
5. Change OCEN 400 course description to include topics of “coastal pipelines and introduction to risk analysis.”
6. Change the requirement for OCNG 401 (3 cr) and OCNG 410 (3 cr) to a choice between OCNG 401 and OCNG 410. This choice makes room for an additional technical elective. Dropping one Oceanography course reduces the ABET Math/Science credits from 40 to 37 which is well above the minimum of 32 credits. The additional technical elective replaces the Oceanography course so no additional credit hours are added to the curriculum.
7. Change OCEN 408 course description to include the topic of “subsea flow lines and manifolds.” This course is a technical elective.

The proposed new curriculum, change of course forms, syllabi, and reasons are attached.
# B.S. DEGREE IN OCEAN ENGINEERING (2008-09 Catalog 131)

## FRESHMAN YEAR

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**NOTES:**

¹To be selected from the University Core Curriculum. Of the 18 hours shown as University Core Curriculum electives, 3 must be from visual and performing arts, 3 from social and behavioral science, 6 from U.S. history, 6 from POLS 206 and 207, and 6 from international and cultural diversity. The international and cultural diversity requirement may be met by courses satisfying the visual and performing arts, social and behavioral sciences, and the political science and history requirements if they are also on the approved list of international and cultural diversity courses.

²This elective is to be selected from ENGL 210 or 301.

³The technical elective program must be approved by the department head or the undergraduate advisor. Technical electives are chosen from the approved technical elective list, and at least 3 credit hours must be engineering design.

⁴A grade of “C” or better is required for these ocean engineering courses.
### B.S. DEGREE IN OCEAN ENGINEERING (2009-10 Catalogue 132)

#### FRESHMAN YEAR

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#### SOPHOMORE YEAR

| CVEN 221 Engr. Mech.: Statics            | 3  |    |          |
| MATH 251 Engineering Mathematics III     | 3  |    |          |
| STAT 211 Principles of Statistics I      | 3  |    |          |
| Univ. Core Curric. Elect.                | 3  |    |          |
| Univ. Core Curric. Elect.                | 3  |    |          |
| **Total**                                | 15 |    |          |

| CVEN 305 Engr. Mech. of Materials        | 3  |    |          |
| CVEN 306 Materials for Civil Engineers   | 3  |    |          |
| MEEN 315 Prin. of Thermodynamics         | 3  |    |          |
| or                                       |    |    |          |
| ECEN 215 Principles of Electrical Engr.  | 3  |    |          |
| MATH 308 Differential Equations          | 3  |    |          |
| OCEN 201 Intro. to Ocean Engineering     | 3  |    |          |
| Univ. Core Curric. Elect.                |    |    |          |
| **Total**                                | 18 |    |          |

#### JUNIOR YEAR

| CVEN 302 Comp. Appl. in Engr. & Const.   | 3  |    |          |
| CVEN 311 Fluid Dynamics                 | 3  |    |          |
| OCEN 336 Fluid Dynamics Lab              | 1  |    |          |
| CVEN 345 Theory of Structures            | 3  |    |          |
| OCNG 401 Intro to Oceanography           |    |    |          |
| or                                       |    |    |          |
| OCNG 410 Intro. to Phys Oceanography     |    |    |          |
| Writing skills elective                  |    |    |          |
| **Total**                                | 16 |    |          |

| CVEN 363 Engr. Mech.: Dynamics           | 3  |    |          |
| CVEN 365 Intro. to Geotechnical Engr.    | 3  |    |          |
| OCEN 300 Ocean Engr Wave Mechanics       | 3  |    |          |
| OCEN 362 Hydromechanics                 | 3  |    |          |
| Technical Elective                       |    |    |          |
| **Total**                                | 15 |    |          |

#### SENIOR YEAR

| OCEN 403 Dyn of Offshore Structures      | 3  |    |          |
| OCEN 400 Basic Coastal Engineering       | 3  |    |          |
| OCEN 401 Underwater Acoustics for OE     | 3  |    |          |
| OCEN 402 Naval Architecture               | 3  |    |          |
| OCEN 481 Seminar                          | 1  |    |          |
| Technical Elective                        |    |    |          |
| **Total**                                | 16 |    |          |

| ENGR 482 Ethics and Engineering           | 3  |    |          |
| OCEN 407 Design of Ocean Engr Facilities  | 4  |    |          |
| OCEN 410 Ocean Engineering Lab.           | 1  |    |          |
| Univ. Core Curric. Elect.                 | 3  |    |          |
| Technical Elective                        |    |    |          |
| **Total**                                | 16 |    |          |

### NOTES:

1. To be selected from the University Core Curriculum. Of the 18 hours shown as University Core Curriculum electives, 3 must be from visual and performing arts, 3 from social and behavioral science, 6 from U.S. history, 6 from POLS 206 and 207, and 6 from international and cultural diversity. The international and cultural diversity requirement may be met by courses satisfying the visual and performing arts, social and behavioral sciences, and the political science and history requirements if they are also on the approved list of international and cultural diversity courses.

2. This elective is to be selected from ENGL 210 or 301.

3. The technical elective program must be approved by the department head or the undergraduate advisor. Technical electives are chosen from the approved technical elective list, and at least 3 credit hours must be engineering design.

4. A grade of C or better is required for these ocean engineering courses.
MEMORANDUM

TO:       Dr. Robert Knight, Chair
           Curriculum Committee

THROUGH:  Dr. Jo W. Howze, Associate Dean
           Dwight Look College of Engineering

           Dr. Raymond J. Juzaitis, Department Head
           Nuclear Engineering

FROM:     Dr. William H. Marlow, Coordinator of Undergraduate Programs
           Nuclear Engineering

SUBJECT:  Changes in Curriculum for Bachelor of Science Nuclear Engineering

The Department of Nuclear Engineering requests the following changes in the Nuclear Engineering curriculum to be published in Catalog 132 and effective for the Class of 2013:

Drop from the Curriculum: MEEN 222. Materials Science            3 hours

Add to the Curriculum: NUEN 265. Materials Science for Nuclear
                      Energy Applications       3 hours

Please find attached the old and new curriculum sheets to clarify these changes and concurrence with these changes approval from Dr. Dennis O’Neal, Department Head, Mechanical Engineering.
# B.S. CURRICULUM IN NUCLEAR ENGINEERING
**(EFFECTIVE FALL 2008, CATALOG 131)**

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**Total = 132 Hours**

1. NUEN 101 is required during the first semester of the freshman year.
2. Entering students will be given a placement test in mathematics. Test results will be used to select the appropriate starting course.
3. To be selected from the University Core Curriculum. Of the 18 hours shown as electives, 3 must be from Visual & Performing Arts, 3 from Social & Behavioral Sciences, 6 from U.S. History (typically HIST 105 & 106), 6 from Political Science (POLS 206 & 207), and 6 from International & Cultural Diversity. The International & Cultural Diversity hours may be met by courses satisfying the Visual & Performing Arts, Social & Behavioral Sciences, and the Political Science & History requirements if they are also on the approved list for International & Cultural Diversity courses. In addition, ENGR 482 or PHIL 482 must be taken.
4. As approved by academic advisor.
5. ENGL 210 is an acceptable substitute.
6. The NUEN course to replace MEEN 222 should be taken when available.
7. Power Option Alternative. Students who intend to work in the nuclear power industry immediately upon completion of the B.S. degrees have the option of substituting the 3 hour course "Nuclear Plant Systems & Transients" for NUEN 430. If this choice is made, then the student must also select the 2 hour course "Core Modeling" as a technical elective. Since both are new courses, they are listed as NUEN 489.
### FRESHMAN YEAR

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<td>ENGL 104 Composition &amp; Rhetoric</td>
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<tr>
<td>ENGR 111 Foundations in Engr. I.</td>
<td>(1-3) 2</td>
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<td>MATH 151 Engr. Math. I</td>
<td>(3-2) 4</td>
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<td>PHYS 218 Mechanics</td>
<td>(3-3) 4</td>
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<tr>
<td>NUEN 101 Principles of Nucl. Engr</td>
<td>(1-0) 1</td>
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<tr>
<td>KINE 198 Health &amp; Fitness Activity</td>
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### SOPHOMORE YEAR

<table>
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<th>Course</th>
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<tr>
<td>MEEN 221 Statics and Particle Dynamics</td>
<td>(2-2) 3</td>
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<tr>
<td>NUEN 265 Mat'l Sci.Nucl.Energy Appl.</td>
<td>(3-0) 3</td>
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<tr>
<td>MATH 251 Engr. Math. III</td>
<td>(3-0) 3</td>
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<tr>
<td>NUEN 201 Intro. to Nucl. Engr. I</td>
<td>(3-0) 3</td>
</tr>
<tr>
<td>University Core Curriculum Elective</td>
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### JUNIOR YEAR

<table>
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<tr>
<td>ENGL 301 Tech. Writing</td>
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<td>or</td>
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<tr>
<td>COMM 203 Public Speaking</td>
<td>(3-0) 3</td>
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<tr>
<td>MEEN 344 Fluid Mechanics</td>
<td>(2-2) 3</td>
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<tr>
<td>MATH 311 Topics in Applied Math. I</td>
<td>(3-0) 3</td>
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<tr>
<td>NUEN 301 Nuclear Reactor Theory</td>
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<tr>
<td>NUEN 309 Radiological Safety</td>
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### SENIOR YEAR

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<tr>
<td>NUEN 405 Nucl. Engr. Exp.</td>
<td>(2-3) 3</td>
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<tr>
<td>NUEN 406 Nucl. Engr. Sys. &amp; Design</td>
<td>(3-0) 3</td>
</tr>
<tr>
<td>NUEN 430 Comp. Appl. in Nucl. Engr</td>
<td>(3-0) 3</td>
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<tr>
<td>University Core Curriculum Elective</td>
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<tr>
<td>Technical Elective</td>
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<td></td>
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</table>

### Total = 132 Hours

1. NUEN 101 is required during the first semester of the freshman year.
2. Entering students will be given a placement test in mathematics. Test results will be used to select the appropriate starting course.
3. To be selected from the University Core Curriculum. Of the 18 hours shown as electives, 3 must be from Visual & Performing Arts, 3 from Social & Behavioral Sciences, 6 from U.S. History (typically HIST 105 & 106), 6 from Political Science (POLS 206 & 207), and 6 from International & Cultural Diversity. The International & Cultural Diversity hours may be met by courses satisfying the Visual & Performing Arts, Social & Behavioral Sciences, and the Political Science & History requirements if they are also on the approved list for International & Cultural Diversity courses. In addition, ENGR 482 or PHIL 482 must be taken.
4. As approved by academic advisor.
5. ENGL 210 is an acceptable substitute.
6. Power Option Alternative. Students who intend to work in the nuclear power industry immediately upon completion of the B.S. degrees have the option of substituting the 3 hour course “Nuclear Plant Systems & Transients” for NUEN 430. If this choice is made, then the student must also select the 2 hour course “Core Modeling” as a technical elective. Since both are new courses, they are listed as NUEN 489.
MEMORANDUM

TO: Raymond Juzaitis
    Professor & Department Head
    Department of Nuclear Engineering

FROM: Dennis O’Neal
    Holdredge-Paul Professor & Department Head
    Department of Mechanical Engineering

SUBJECT: Proposed Course - NUEN 265 and Associated Degree Plan Changes

DATE: July 23, 2008

I am sending this letter to support the proposal from the Department of Nuclear Engineering to create the course NUEN 265 (Materials Science for Nuclear Energy Applications), and the corresponding changes to the Nuclear Engineering curricular to adopt this course.

Specifically, we support the two main aspects of the proposal:

1. The creation of NUEN 265, Materials Science for Nuclear Energy Applications
2. For Nuclear Engineering Majors (NUEN), replace the curricular requirement for MEEN 222 (Materials Science) with a requirement for NUEN 265.