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 Schrodinger 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 in-depth 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 Liberal 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.
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 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 programs(s) (e.g., B.A. in history)
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

   Undergraduate general academic

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

10. Prefix Course # Title (excluding punctuation)

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<th>Lect.</th>
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<th>CIP and Fund Code</th>
<th>Admin. Unit</th>
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<th>FICE Code</th>
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Approval recommended by:

[Signature] 8-21-09
Head of Department Date

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

Head of Department (if cross-listed course) Date

Dean of College Date

Submitted to Coordinating Board by:

[Signature] Date
Dean of College

[Signature] Effective Date

Associate Director, Curricular Services

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
ARAB 301

Reading and Composition

Instructor: Salah Ayari (ayari-s@tamu.edu)
Meetings: MW (3 hours)
Office: ACAD 103B
Telephone: 979-458-1342
Office Hours: MW 3:00 – 4:00

Required Texts:

- الكتاب في تعلم العربية – الجزء الثاني (Al-Kitaab fii Ta’allum al-Arabyiyya – Part Two)
- The Concise English-Arabic Dictionary, Oxford University Press
- The Hans Wahren Dictionary of Modern Written Arabic, Spoken Language Services, Inc

Recommended Texts

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

Course Description

Arabic 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 Arabic 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 (ابن بطوطس وطولة رحلة في التاريخ)
- 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 (أعياد واحتفالات)
- 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 (مع الصحافة العربية)
- 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 (مهتمة الجامعة)
- 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 (شخصيات من الأدب العربي الحديث)
- Readings: Modern writers and the Arabic novel (Novelist Tawfiq 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

    Will this course be repeated within the same semester? □ Yes □ No

    If yes, this course may be taken _____ times.

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)
      _______________________________________________________________________

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

    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

    Submitted to Coordinating Board by:

    Associate Director, Curricular Services Date

    Dean of College Date

    Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/97
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

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Topic</th>
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<tr>
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<td>Monday</td>
<td>Course Introduction</td>
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<tr>
<td>9/27/08</td>
<td>Wednesday</td>
<td>The American Legal System: The Source of Environmental Law</td>
<td>Chapter 1</td>
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<td>The Litigation Process and Other Tools for Resolving Environmental Problems</td>
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<td>Administrative Law and Its Impact on the Environment</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>11/10/08</td>
<td>Monday</td>
<td>Natural Resources</td>
<td>Chapter 10</td>
</tr>
<tr>
<td>11/12/08</td>
<td>Wednesday</td>
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<tr>
<td>11/14/08</td>
<td>Friday</td>
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<td>11/17/08</td>
<td>Monday</td>
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<tr>
<td>11/19/08</td>
<td>Wednesday</td>
<td>International Environmental Law</td>
<td>Chapter 11</td>
</tr>
<tr>
<td>11/21/08</td>
<td>Friday</td>
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<tr>
<td>11/24/08</td>
<td>Monday</td>
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<tr>
<td>11/26/08</td>
<td>Wednesday</td>
<td>no class; annotated bibliography due</td>
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<tr>
<td>11/28/08</td>
<td>Friday</td>
<td>Thanksgiving</td>
<td></td>
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<tr>
<td>12/1/08</td>
<td>Monday</td>
<td>redefined Friday</td>
<td></td>
</tr>
<tr>
<td>12/10/08</td>
<td>Wednesday</td>
<td>Final Exam 10:30-12:30</td>
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</tr>
</tbody>
</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

Friday, August 22, 2008 9:01:33 AM

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

Check,
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 a BESC 469 and PLPA 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 Programs 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 its overlap with REHR 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 REHR 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) 845-0445
Email: rkaiser@tamu.edu
WEBSITES: http://waterprogram.tamu.edu
http://texaswater.tamu.edu
http://rskwater.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 an environmental policy direction, we would have them take 367 and 420 as well. Thanks for your support.

Cheers,
Chuck
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: 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? No

6. Is this a repeatable course? No

7. Has this course been taught as a 489/689? No

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. 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: CHIN
    Course #: 301
    Title (excluding punctuation): Reading & Composition
    
    | Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | Acad. Year | FICE Code |
    |-------|-----|-----|-------------------|-------------|------------|-----------|
    | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 7 | 3 | 5 | 0 | 9 | 1 | 0 | 0 | 0 | 3 | 6 | 3 | 2 | Level | 3 |
    
    Approval recommended by:

    Head of Department 8/21/08

    Chair, College Review Committee 9/24/08

    Dean of College 9/24/08

    Submitted to Coordinating Board by:

    Dean of College Date

    Effective 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:

Class participation and preparation: 10%
Homework: 20%
Quiz: 20%
Midterm: 25%
Final: 25%

Grading scale is as followed:
90-100% = A
80-89% = B
70-79% = C
60-69% = D
0-59% = F
**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.

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**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](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.

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**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](http://student-rules.tamu.edu). Check with the Aggie Honor System Office at [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor).

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**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     | 家乡风俗                              | 1. “把” sentence(3) 把+O+V+到/在/成/  
2. adverbs “最” 和 “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     | 礼轻情意重                              | 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                             | 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                        | 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  | 给他母亲河                             | 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 |

5 / 6
<table>
<thead>
<tr>
<th>Date</th>
<th>Midterm-exam</th>
<th>Grammar Review</th>
<th>Chinese view on “privacy”</th>
</tr>
</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>
<td>1. structural particles“的，得，地“; 2. Summary of the “把” sentence; 3. the adverbs “就” and “还”</td>
<td></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>
<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>
<td>Environmental issues in China</td>
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11/3 Quiz Three 32 课，33 课

<table>
<thead>
<tr>
<th>Date</th>
<th>Midterm-exam</th>
<th>Grammar Review</th>
<th>Generation gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/4-11/13</td>
<td>34. 神女峰的传说 Stressing a point/telling a story</td>
<td>1. the subjectless sentence; 2. the construction of ”连…都/也”; 3. 着 and 住 as the resultative complements</td>
<td></td>
</tr>
<tr>
<td>11/16-11/23</td>
<td>35. 汽车我先开着 Reproaching and questioning/ Refusing/making an explanation</td>
<td>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”;</td>
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11/23 Quiz Four 34 课，35 课

<table>
<thead>
<tr>
<th>Date</th>
<th>Midterm-exam</th>
<th>Grammar Review</th>
<th>Climate of China</th>
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</thead>
<tbody>
<tr>
<td>11/30-12/8</td>
<td>36. 北京热起来了 Talking about the climate/making a suggestion/expressing possibility</td>
<td>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…”</td>
<td></td>
</tr>
</tbody>
</table>

12/16 Final review and Final-exam

* Note: Changes to the syllabus will be made whenever necessary.
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

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

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. 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)
     MEEN 434 | DYN & MOD MECHTR O SYS

     Lect. | Lab | SCH | Subject Matter Content Code | Admin. Unit | Acad. Year | FICE Code
     03 | 00 | 03 | 1419010006 | 192009 | 10 | 003632

     Approval recommended by: ___________________________ 7/28/08
     Head of Department | Date

     Chair College Review Committee 9/16/08

     Head of Department (if cross-listed course) Date

     Dean of College 9/16/08

     Submitted to Coordinating Board by: ___________________________
     Dean of College | Date

     Date ___________________________ Effective Date

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

SEP 26 2008 CURRICULUM SERVICES
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’ 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>
</tr>
<tr>
<td>11</td>
<td>Magnetic diffusion in sinusoidal steady state and in convective media, charge relaxation</td>
</tr>
<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>
</tr>
<tr>
<td>14</td>
<td>Electromechanical dynamics with convection, introduction to continuum electromechanics</td>
</tr>
</tbody>
</table>
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

• Submit original form and attach a course syllabus.

1. 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 ____________

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>
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<td>265 MATL SCI NUCLEAR ENERGY</td>
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Lect. Lab SCH Subject Matter Code Admin. Unit Acad. Year FICE Code
0 3 0 0 3 1 4 2 3 0 1 0 0 6 2 0 9 0 9 0 9 - 10 0 6 3 6 3 2 Level 2

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

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

29 of 107 D
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


References: Online Table of the Nuclides, [http://atom.kaeri.re.kr/](http://atom.kaeri.re.kr/)
Online Periodic Table, [http://www.webelements.com/](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.

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<td>Final Exam</td>
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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.
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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) NUEN 225, MEEN 222 or equivalent and NUEN 302 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 Engr |

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Approval recommended by:
Head of Department Date
Chair, College Review Committee Date
Dean of College Date

Submitted to Coordinating Board by:
Director of Academic Support Services Date
Dean of College Date

Questions regarding this form should be directed to Sandra Williams at 845-8836.
OAR/AS – 04/07
SEP 2 & 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.

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- **Falsification**: Manipulating results such that research is not accurately represented in the research record.
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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  
   PHYS 303 Advanced Mechanics II 

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

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

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

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

7. Has this course been taught as a 489/689?  ✅ Yes  □ No  
   If yes, how many times?  0  
   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. 

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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.


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 ______

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

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

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

7. Has this course been taught as a 489/689? □ Yes □ No
   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., MS, 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 PHYSICISTS I

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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: ______
Date ______
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

42 of 107 D
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)

3 weeks - Review of Calculus 1-3, emphasizing vector calculus (Gauss's Theorem and Stokes's Theorem, Jacobian, parametric integration). Taylor's expansion as a shift. E-field of a long rod by Coulomb's Law and Gauss's Law. B-field of long wire by Biot-Savart Law and Ampere's Law. [Instructor's Notes.]

MOTIVATION: Preparation for E&M1.

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

5. Cross-listed with: N/A

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

6. Is this a variable credit course? No
   If yes, from _______ to _______

7. Is this a repeatable course? No
   If yes, this course may be taken ______ times.

8. Will this course be repeated within the same semester? No

9. Has this course been taught as 489/689? Yes
   If yes, how many times? 0

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

10. 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)

11. 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

   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:

   Date

   Effective Date

   Associate Director, Curricular Services

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

46 of 107 D
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

Undergraduate + Graduate + Professional

1. This request is submitted by the Department of Soil and Crop Sciences

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

   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)

   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 Courses # Title (excluding punctuation)

    | SCSC | 201 | GRT | PLNS | SETTL | MNT & FARMING |
    |------|-----|-----|------|--------|--------------|
    | Lec. | Lab | SCH | CIP and Fund Code | Admin. Unit | Acad. Year |
    | 0    | 3   | 0   | 30    | 01102000 | 526200910003632 |

   Approval recommended by:

   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

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

50 of 107 D
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 statue 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: BIOL405, Comparative Endocrinology

3. Change requested
   a. Prerequisite(s): From: BIOL319; WFSC416 or BIOL388 or instructor approval
   b. Withdrawal (reason): To: strongly recommended
   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:

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</table>

   Approval recommended by: H. H. [Signature]
   Date: 6/6/08

   Head of Department
   Date

   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

   53 of 107 D
Office of Undergraduate Programs  
July 24, 2008

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."
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<td>Hormone Chemistry, Hydrophobic Hormones</td>
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<td>Endocrine Techniques</td>
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<td>EXAM 3, 8-10 AM</td>
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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: BIOL445, Biology of Viruses

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 applications. 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:

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   Approval recommended by:

   [Signature and date]

   Head of Department: __________ Date: __________

   Chair, College Review Committee: __________ Date: __________

   Dean of College: __________ Date: __________

   Submitted to Coordinating Board by:

   [Signature and 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
Office of Undergraduate Programs

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
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.

Quizzes: 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

1. This request is submitted by the Department of __________________________.

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: ____________________________
      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.

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>
<th>Course #</th>
<th>Title (excluding punctuation)</th>
<th>Lect</th>
<th>Lab</th>
<th>SCH</th>
<th>CIP and Fund Code</th>
<th>Admin. Unit</th>
<th>FICE Code</th>
<th>Level</th>
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</thead>
<tbody>
<tr>
<td>CVEN</td>
<td>336</td>
<td>FLUID DYNAMICS LAB</td>
<td>0 0 2</td>
<td>0 1 1</td>
<td>1 4</td>
<td>1 1 0 1 0 0 0 6</td>
<td>0 6 3 0</td>
<td>0 0 3 6 3 2</td>
<td>3</td>
</tr>
</tbody>
</table>

b. Change to:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Course #</th>
<th>Title (excluding punctuation)</th>
<th>Lect</th>
<th>Lab</th>
<th>SCH</th>
<th>CIP and Fund Code</th>
<th>Admin. Unit</th>
<th>FICE Code</th>
<th>Level</th>
</tr>
</thead>
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<tr>
<td>OCEN</td>
<td>336</td>
<td>FLUID DYNAMICS LAB</td>
<td>0 0 2</td>
<td>0 1 1</td>
<td>1 4</td>
<td>1 1 0 1 0 0 0 6</td>
<td>0 6 3 0</td>
<td>0 0 3 6 3 2</td>
<td>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: ____________________________

Dean of College ____________________________

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>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>None</td>
<td>Pages 1-6</td>
</tr>
<tr>
<td>2</td>
<td>Coordinate Papers</td>
<td>Informal</td>
<td>Pages 7-14</td>
</tr>
<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>
</tr>
<tr>
<td>10</td>
<td>Friction Loss along a Pipe</td>
<td>Formal</td>
<td>Pages 73-80</td>
</tr>
<tr>
<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>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Review</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Exam</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

Course Information

Instructor: Ning Xu  
Email: delpieroxy@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:
- Technical Content : 60%
- Grammar : 20%
- Format : 20%

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.

Honor Code : “An Aggie does not lie, cheat, or steal, or tolerate those who do.” http://www.tamu.edu/aggiehonor
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: HIST 308, History of Native Peoples in the U.S. South

   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: 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.

   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.

5. ____________________________

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
   ____________________________
   03000035401010001145000036323

   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
   ____________________________
   03000035401010001145009100036323

   Approval recommended by: ____________________________  Date: 9/24/08
   ____________________________

   Head of Department  Date

   Head of Department (if cross-listed course)  Date

   Submitted to Coordinating Board by: ____________________________  Date

   Dean of College    Date

   Dean of College    Date

   Associate Director, Curricular Services  Date  Effective Date

Questions regarding this form should be directed to Sandra Williams at 843-8201.
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: ___________________________
   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:

   Prefix Course # Title (excluding punctuation)
   HIST 412 SOVIET UNION 1917-PRES

   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 4

   Approval recommended by: ___________________________ Date: 7/14/08

   Head of Department

   Head of Department (if cross-listed course) Date: ___________________________ Date: 9/24/08

   Dean of College

   Submitted to Coordinating Board by: ___________________________ Date: ___________________________ Date: ___________________________ Effective Date: ___________________________

   Chair, College Review Committee

   Associate Director, Curricular Services

   Curricular Services – 11/07

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

<table>
<thead>
<tr>
<th>Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A</td>
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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](http://www.tamu.edu/aggiehonor).

ADA Students with 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 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 Room B-118 Cain Hall (845-1637).
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: LBAR 181: Freshman Honors Seminar in the Liberal Arts

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.

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.

   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:

   Prefix | Course # | Title (excluding punctuation) | Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | FICE Code | Level
   ------ | -------- | ----------------------------- | ----- | --- |----- | ----------------- | ----------- |---------- | ------
   LBAR   | 181     | FR HONORS SEM LIB ARTS       | 01    | 00 | 124010100011735003632 | 1           |
   Lect. | Lab     | SCH | CIP and Fund Code | Admin. Unit | FICE Code | Level
   ------ | ------- |----- |------------------| ----------- |---------- |------
   0    | 1       | 0   | 124010100011735003632 | 1          |

   b. Change to:

   Prefix | Course # | Title (excluding punctuation) | Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | FICE Code | Level
   ------ | -------- | ----------------------------- | ----- | --- |----- | ----------------- | ----------- |---------- | ------
   LBAR   | 181     | FR SEMINAR LIBERAL ARTS      | 01    | 00 | 124010100011735003632 | 1           |
   Lect. | Lab     | SCH | CIP and Fund Code | Admin. Unit | FICE Code | Level
   ------ | ------- |----- |------------------| ----------- |---------- |------
   0    | 1       | 0   | 124010100011735003632 | 1          |

   Approval recommended by: ____________________________ Date: ____________________________

   Chair, College Review Committee

   Date: ____________________________

   Head of Department

   Date: ____________________________

   Dean of College

   Date: ____________________________

   Submitted to Coordinating Board by: ____________________________ Date: ____________________________

   Associate Director, Curricular Services

   Date: ____________________________

   Effective Date: ____________________________
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

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, credit 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:

<table>
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<th>Title (excluding punctuation)</th>
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   b. Change to:

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</tbody>
</table>

   Approval recommended by:
   [Signature] [Date]
   [Signature] [Date]
   [Signature] [Date]

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

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

   Effective Date
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 ________________________________

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: ___________________________

   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 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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   b. Change to:

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   Lect.  Lab  SCH  CIP and Fund Code  Admin. Unit  Acad. Year  FICE Code
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   Approval recommended by: ____________________________
   Date: ____________________________
   Head of Department

   Chair, College Review Committee: ____________________________
   Date: ____________________________

   Dean of College: ____________________________
   Date: ____________________________

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

   Date: ____________________________
   Effective Date: ____________________________

Questions regarding this form should be directed to Sandra Williams at 815-8201.
Curricular Services – 11/07

81 of 107 D
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.
(Attachment D)

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: LBAR 381 Junior Seminar: Interdisciplinary Honors Seminar

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 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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   Approval recommended by: ____________________________
   Chair, College Review Committee ____________________________ Date: ____________________________
   Dean of College ____________________________ Date: ____________________________
   Submitted to Coordinating Board by: ____________________________ 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.
Departmental Request for a Change in Course
Undergraduate + Graduate + Professional

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.

   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:

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<td>INTRO TO OCEAN ENGINEERING</td>
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   Head of Department Date [9/26/08]

   Chair, College Review Committee Date 9/26/08

   Dean of College Date 9/26/08

   Head of Department (if cross-listed course) Date

   Submitted to Coordinating Board by: [Associate Director, Curricular Services] SEP 26, 2008

   Dean of College Date

   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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<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>
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<td>Offshore Structures, Wave Forces on Structures, Morison Equation, Marine Foundations</td>
<td>Chapter 3</td>
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<td>Coastal Processes and Structures, Wave Refraction and Diffraction, Wave Forecasting and Hindcasting</td>
<td>Chapter 4</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>Chapter 7 &amp; 8</td>
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<tr>
<td>11</td>
<td>Hydrographic Surveying</td>
<td>Handout</td>
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<td>12</td>
<td>Instrumentation for Ocean Engineers, Current Meter, Wave Gauges, Water Samplers, CTD/DO Instruments*</td>
<td>Chapter 9</td>
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<td>Physical Modeling, Modeling Facilities, Similitude and Dimensionless Ratios, Ocean Engineering Design</td>
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<td>Presentation of Ocean Engineering Project</td>
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<td>15</td>
<td>REVIEW</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 of 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.
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: ________________________________________________________________________________
   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. a. As currently in course inventory:
   
   Prefix | Course # | Title (excluding punctuation) | Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | FICF Code | Level |
   ────────|----------|--------------------------------|-------|-----|-----|------------------|-------------|---------|-------|
   OCEN   | 301      | DYNAMICS OF OFFSHORE STRUCT    | 03    | 0   | 0   | 1 4 2 4 0 1 0 0 0 6 | 0 6 3 0 0 0 3 6 3 2 | 3      |
   
   b. Change to:
   
   Prefix | Course # | Title (excluding punctuation) | Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | FICF Code | Level |
   ────────|----------|--------------------------------|-------|-----|-----|------------------|-------------|---------|-------|
   OCEN   | 403      | DYNAMICS OF OFFSHORE STRUCT    | 03    | 0   | 0   | 1 4 2 4 0 1 0 0 0 6 | 0 6 3 0 0 0 3 6 3 2 | 3      |

   Approval recommended by: [Signature]
   
   Head of Department Date: [Date]
   
   Chair, College Review Committee Date: [Date]
   
   Dean of College Date: [Date]

   Submitted to Coordinating Board by:

   [Signature]
   
   Date: [Date]
   Effective Date: [Date]
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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<td>1</td>
<td>Introduction: dynamic systems; Equation of motion: mass, damping, stiffness</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Energy methods, Single degree of freedom (1DOF) linear system: free vibration</td>
<td>Assignment 1</td>
</tr>
<tr>
<td>3</td>
<td>Single degree of freedom (1DOF) linear system: forced vibration</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ocean Engineering applications</td>
<td>Assignment 2</td>
</tr>
<tr>
<td>5</td>
<td>Two degree of freedom (2DOF) systems</td>
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<td>6</td>
<td>Multi-degree of freedom systems, Exam #1</td>
<td>Assignment 3</td>
</tr>
<tr>
<td>7</td>
<td>Continuous systems (cable, riser, beam)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Rules and regulations for various offshore structures; design considerations / dimensional analysis</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Review of regular and random waves; wind and current loading</td>
<td></td>
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<tr>
<td>10</td>
<td>Wave loads on slender structures (Morison equation)</td>
<td>Assignment 4</td>
</tr>
<tr>
<td>11</td>
<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>12</td>
<td>Frequency- vs. time-domain analyses; Exam #2</td>
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<td>13</td>
<td>Deterministic and stochastic design methods (time series, spectra); offshore pipelines</td>
<td></td>
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<tr>
<td>14</td>
<td>Elementary mooring analyses</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Ocean renewable energy; risk assessment for offshore structures</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Final Exam</td>
<td></td>
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</tbody>
</table>
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.
1. This request is submitted by the Department of **Civil Engineering**

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

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

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.

5. 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; offshore pipelines; dredging; control of oil spills in estuaries and at sea.

6. a. As currently in course inventory:

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<th>Title (excluding punctuation)</th>
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<td>03142401</td>
<td>00006</td>
<td>063000</td>
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Approval recommended by: **Jim Zhang**

Head of Department: Date: Aug. 15, 2009

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: Sep 26, 2009

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: ________________

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:

<table>
<thead>
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<th>Course #</th>
<th>Title (excluding punctuation)</th>
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<td>UNDERWATER AND MOORED SYSTEM</td>
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   b. Change to:

<table>
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<th>Course #</th>
<th>Title (excluding punctuation)</th>
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<th>Admin. Unit</th>
<th>FICE Code</th>
<th>Level</th>
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   Approval recommended by: ____________________________
   ________________
   Date: ________________

   Head of Department Date
   Chair, College Review Committee Date
   Dean of College Date
   Dean of College Date

   Submitted to Coordinating Board by:

   ____________________________
   ________________
   Date: ________________

   Effective Date

   ________________

   ____________________________
   ________________
   Date: ________________

   ____________________________
   ________________
   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 Civil Engineering  

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:

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<td>OCEN</td>
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<td>Hydromechanics</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<td>4</td>
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   b. Change to:

<table>
<thead>
<tr>
<th>Prefix</th>
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<th>Title (excluding punctuation)</th>
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<tbody>
<tr>
<td>OCEN</td>
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<td>Hydromechanics</td>
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<thead>
<tr>
<th>Lect.</th>
<th>Lab</th>
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</tr>
</tbody>
</table>

   Approval recommended by:  
   [Signature]  
   [Date]

   Head of Department  
   Chair, College Review Committee  
   Dean of College  

   Head of Department (if cross-listed course)  
   Date

   Submitted to Coordinating Board by:  
   [Signature]  
   [Date]

   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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
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<tr>
<td>Exam 1</td>
<td>30%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>30%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
</tbody>
</table>

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.
Course Outline:
(subject to change, check course website for up-to-date information)

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<tr>
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<td>1</td>
<td>Pressure at a Point, Basic Equation for Pressure Field</td>
<td>2.1, 2.2</td>
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<tr>
<td>2</td>
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<td>Pressure Variation in a Fluid at Rest</td>
<td>2.3</td>
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<td>Pressure Variation in a Fluid with Rigid Body Motion</td>
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<td>Velocity and Acceleration Field</td>
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<td>Fluid Element Kinematics</td>
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<td>Continuity Equation</td>
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<td>Cylindrical Polar Coordinates</td>
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<td>Stream Function</td>
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<td>Conservation of Linear Momentum</td>
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<td>Euler's Equations of Motion, Bernoulli Equation</td>
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<td>Irrotational Flow and Bernoulli Equation</td>
<td>6.4.3, 6.4.4</td>
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<td>Velocity Potential and Stream Function</td>
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<td>Uniform Flow, Source and Sink</td>
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<td>Vortex, Doublet</td>
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<td>Source in Uniform Stream and Rankine Ovals</td>
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<td>Flow around a Circular Cylinder: Lift, Added Mass</td>
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<td>Navier-Stokes Equations</td>
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<td>Couette Flow and Hagen-Poiseille Flow</td>
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<td>Pipe Flow Characteristics</td>
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<td>Fully Developed Laminar Pipe Flows</td>
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<td>Fully Developed Turbulent Pipe Flows</td>
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<td>Plat Plate Laminar Boundary Layer</td>
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<td>Energy Considerations</td>
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<td>Chezy and Manning Equations</td>
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<td>Uniform Depth Examples</td>
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<td>Gradually Varied Flow</td>
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<td>Rapidly Varied Flow - Hydraulic Jump</td>
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<td>Rapidly Varied Flow - Sharp-Crested Weirs</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

Physics

1. This request is submitted by the Department of

2. Course prefix, number and complete title of course:
PHYS 302 Advanced Mechanics

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

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.

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:

<table>
<thead>
<tr>
<th>Prefix</th>
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<th>Title (excluding punctuation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 302</td>
<td>ADVANCED MECHANICS</td>
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Lect. | Lab | SCH | CIF and Fund Code | Admin. Unit | FICE Code |
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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 845-6201, Curricular Services – 11/07

100 of 107 D
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 Bernouilli 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: 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.

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. 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.

6. a. As currently in course inventory:

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<td>422</td>
<td>FIRE PROTECTION FACILITIES</td>
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Approval recommended by: S/J 3/08
Head of Department

Chair, College Review Committee
Date 9/16/08

Head of Department (if cross-listed course) Date 9/16/08

Dean of College
Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services

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

G73 11/4/08

104 of 107 D
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
- Attendance 10%
- Midterm 30%
- Final 30%
- Paper 30%

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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.
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<td>Management Overview</td>
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