New Course Requests
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
   The Africana Studies Program

2. Course prefix, number and complete title of course: AFST 601 Methods of Inquiry Into Africana Studies

3. Catalog course description (not to exceed 50 words): Familiarization with the methodological tradition of African-centered thinking and its relationship to the more popular term Afro-centricity; representation of the thoughts of notable African centered and Afrocentric scholars throughout history as a means to center African descended people throughout history, social analysis and theoretical accounts.

4. Prerequisite(s):
   Graduate classification
   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 this course be repeated within the same semester? ☐ Yes ☒ No

7. This course will:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
      The Africana Studies Program Graduate Certificate
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S. Ph.D. in geography)

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

9. Prefix Course # Title (excluding punctuation)
   AFST 601 METHODS INQUIRY AFR ST D
   Lect. Lab. SCH CIP and Fund Code Admin. Unit Acad. Year FICE Code Level
   0 3 0 0 0 3 0 5 0 2 0 1 0 0 1 1 7 3 5 1 1 - 1 2 0 0 3 6 3 2
   Approval recommended by:
   Kimberly N. Brown, Ph.D.
   Department Head - Type Name & Sign Date
   Chair, College Review Committee
   Dean of College
   Date
   Date

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

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

Questions regarding this form should be directed to Sandra Williams at 845.8201 or sandra-williams@tamu.edu.
Curricular Services – 3/09
AFST 601: METHODS OF INQUIRY INTO AFRICANA STUDIES

INSTRUCTOR: Dr. Tommy J. Curry

OFFICE: 305b Bolton Hall

OFFICE HOURS: by appt

CLASS TIME: Bolton Hall–Room 213

COURSE DESCRIPTION: For many scholars interested in the study of African descended people, Black Studies, or its more contemporary label, Africana Studies, has become a thematic pursuit primarily interested in descriptively cataloguing the various expression of African descended peoples' culture throughout the Diaspora. By contrast, this course is interested in familiarizing the student with the long developed methodological tradition of African-centered thinking and its relationship to the more popular term Afro-centricity. Echoing the long written words of Dr. Daudi ya Azibo (1992), this class is a testament to the position that “what make Black Studies ‘Black’ is the usage of the conceptual universe afforded by the African worldview in studying any and all manner of phenomena.” Whereas various theoretical approaches to “Black” experience have utilized the “ideologically revised” philosophy of modernity’s white dissenters (Derrida, Deleuze, Foucault, and Marx) as the basis of post-colonizing “African descended peoples’” experience, this course thinks about theory as originating from Africana peoples with their positionality at the center of this thinking—an anti-colonial disposition that affirms first and foremost the humanity and historical integrity of African descended peoples. In short, this graduate seminar will represent the thoughts of notable African centered and Afrocentric scholars throughout history as a means to center African descended people throughout history, social analysis and theoretical accounts.

COURSE PREREQUISITES:

Graduate Classification

COURSE OBJECTIVES:

• By the end of the course students should be versed in the various schools of thought with relation to African-centered thinking.
• Participants in this seminar will learn, compare and contrast the various thoughts of the Chicago School of African centered thought popularized by Jacob Carruthers and the more popular understood term “Afrocentricity” popularized by Molefi Asante.
• Students will be encouraged to view Black Studies as an emergent school of thought with a particular approach to the study of African descended people highlighted in the debates between notable scholars like W.E.B. Du Bois, E. Franklin Frazier, and Harold Cruse at the end of the Civil Rights Movement.

COURSE REQUIREMENTS:

1. CLASS ATTENDANCE: Regular class attendance and participation in discussions is required and factored into the evaluation of the student’s position papers;
2. **6 Position Papers:** These papers will be 3+ page papers that summarize, analyze, and advocate a position in relation to the readings. These papers should be conceptualized as written responses that accomplish three things. 1) A summarization of the author’s position and argument in the articles assigned, 2) the cumulative understanding of how the various arguments throughout the course and in the assigned readings inter-relate, 3) and lastly, these papers demonstrate a serious engagement with the texts that can serve as a basis of debate and discussion in the class.

3. **Final Paper:** This paper will be 15-20 page papers developed from the methods and descriptions of African-centered thought and/or Afrocentricity. It is expected that this paper would be of a publishable quality. It is expected that the students will follow Chicago 15th ed. Style guidelines.

**Grading Schedule and Point Value:**
Class Participation 10% -- Throughout the course.
Six (6) Papers 60% -- Week 2, 4, 6, 8, 10, and 12
Final Paper (Final Exam) 30% -- Week 14

**Grading Scale:** A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; F = 0-59%

**Attendance Policy**
"The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/rule07."

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

**Academic Integrity**
The Aggie Code of Honor states that “Aggies do not lie, cheat, or steal, nor do they tolerate those who do.” Please familiarize yourself with the booklet entitled Student Rules, Part I, Section 20, A Scholastic Dishonesty, which offers a clear, concise explanation of what constitutes plagiarism (it also discusses other violations of academic integrity). Possession of this syllabus means that you understand that you are required to comply with Texas A&M University’s policies on this manner.

**Required Texts (Tentative):**


**Tentative Syllabus:**

**Week 1: Understanding the Paradigmatic Origins of Black Studies/African-centered thinking as the basis of Disciplinarity.**


Daniel, Philip “Black Studies: Discipline or Field of Study,” *The African American Studies Reader*


**Week 2: The Historical Documenting of the African Personality: Theoretical Concerns.**

*First Position Paper Due.*

Blyden, Edward. Selected Readings

DuBois, W.E.B. Selected Readings from the *World and Africa*


Cruse, Harold. “The Integrationist Ethic as the Basis of Scholarly Endeavors.”


**Week 3 & 4: Reading Cruse as an Inspiration of the Afrocentric Paradigm**

*Second Position Paper Due – Week 4.*


**Week 5: Afrocenticity—Asante-ism**


**WEEK 6: AFROCENTRICITY CONTINUED**

*Third Position Paper Due.*


**WEEK 7 & 8: THE AFRICAN WORLDVIEW ANALYSIS OF EUROPEAN CULTURE**

*Fourth Position Paper Due – Week 8.*


**WEEK 9 & 10: AFRICAN CENTERED PSYCHOLOGY: THE IMPACT OF WORLDVIEW ANALYSIS FOR AFRICAN DESCENDED PEOPLES.**

*Fifth Position Paper Due – Week 10.*


**WEEK 11: APPLYING AFRICAN CENTERED THINKING: PARADIGMATIC ISSUES AND SOCIAL THOUGHT**


Wilson, Amos. The Falsification of African Consciousness

**WEEK 12: APPLYING AFRICAN CENTERED THINKING: GENDER/SEXISM**

*Sixth Position Paper Due.*


**WEEK 13: APPLYING AFRICAN CENTERED THINKING: EDUCATION**


**WEEK 14: PARADIGMATIC CRITICISMS: W.C. BANKS**

*Final Paper Due.*


Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

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

2. Course prefix, number and complete title of course: BIOL 610: Evolution

3. Catalog course description (not to exceed 50 words):
Fundamentals of evolutionary biology, with an emphasis on evolutionary theory.

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

Cross-listed with: _____________________________
Stacked with: _____________________________

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

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

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

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

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

9. Prefix  Course #  Title (excluding punctuation)
    BIOL 610  EVOLUTION

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

Approval recommended by:

Thomas D. McKinstry 11/8/10

Department Head or Program Chair (Type Name & Sign) Date  11-30-10

Chair, College Review Committee Date  11-20-10

Dean of College Mark P. Oran Date  1/4/11

Chair, GC or UCC Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services

Date Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
Curricular Services – 3/10
BIOL 610 Evolution  
Spring 2009, TR 2:20-3:35

Adam Jones  
BSBE 118D, 5-7774  
agjones@tamu.edu

Week 1:  Review of Mathematical Principles  
Week 2:  A Short Introduction to Probability Theory  
Week 3:  Evolutionary Models: Difference Equations  
Week 4:  Solving Evolutionary Models  
Week 5:  The Mixed Mating Model  
Week 6:  Genetic Drift and Selection  
Week 7:  Selection and Fixation Indices  
Week 8:  Migration, Exam I  
Week 9:  Quantitative Genetics  
Week 10: Natural Selection on Quantitative Traits  
Week 11: Sexual Selection  
Week 12: Parentage Analysis and Maximum Likelihood  
Week 13: Bayesian Techniques and MCMC in Evolution  
Week 14: The State of Evolutionary Biology

This course will focus on the fundamentals of evolutionary biology, with an emphasis on evolutionary theory. Grades in the class will be determined by ten homework assignments (50%) and two exams (50%). While there are no formal prerequisites for this course, students will be expected to obtain the necessary background from supplementary readings in textbooks and other sources. Required readings will be primary research articles, which will be announced during class. This course has no required textbook. However, books that may provide useful background include Evolutionary Biology by Douglas Futuyma, Principles of Population Genetics by Hartl and Clark, and Introduction to Quantitative Genetics by Falconer and Mackay. The grading scale will be 90-100: A; 80-89: B; 70-79: C; 60-69: D; 0-59: F.

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/.

Americans with Disabilities Act (ADA) Policy Statement
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Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and attach a course syllabus.

1. Request submitted by (Department or Program Name): Department of Biomedical Engineering

2. Course prefix, number and complete title of course: BMEN 625, Biophotonics

3. Catalog course description (not to exceed 50 words):
   Theory and application of optical instrumentation, including light sources, lasers, detectors, and optical fibers; instrumentation and engineering in biomedical applications of optics in therapeutics, diagnostics, and biosensing.

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<table>
<thead>
<tr>
<th>Graduate classification or instructor approval</th>
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<td>Cross-listed with: BMEN 425</td>
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4. Prerequisite(s): Cross-listed courses require the signature of both department heads.

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

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

7. This course will be:
   a. required for students enrolled in the following degree 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)
      MS, MEEng, and PhD degrees in Biomedical Engineering

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

9. Prefix | Course # | Title (excluding punctuation) |
| BMEN | 625 | BIOPHOTONICS |

<table>
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<th>Lect.</th>
<th>Lab</th>
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</table>

Approval recommended by:

Gerard L. Cote’
Department Head or Program Chair (Type Name & Sign) Date 12/1/10

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

Submitted to Coordinating Board by:

Associate Director, Curricular Services

Chair, College Review Committee
Date 12/5/10

Dean of College
Date 12/5/10

Chair, GC or UCC
Date 1/24/11

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
Curricular Services – 3/10
Course number and title: BMEN 625 Biophotonics
Term: TBA
Meeting times and location: TBA

Course Description and Prerequisites
Theory and application of optical instrumentation, including light sources, lasers, detectors, and optical fibers; instrumentation and engineering in biomedical applications of optics in therapeutics, diagnostics, and biosensing.

Prerequisites: Graduate classification or instructor approval.

Instructor Information
Name: Kristen Maitland
Telephone number: (979) 845-1864
Email address: kmaitland@tamu.edu
Office hours: TBA
Office location: Zachry 335G

Textbook and/or Resource Material
Reference Text: Optics, by Eugene Hecht

Grading Policies
Work missed due to absences will only be excused for University-approved activities in accordance with Texas A&M University Student Rules (http://student-rules.tamu.edu/). Specific arrangements for make-up work in such instances will be handled on a case-by-case basis. Homework is due at the beginning of class period. Unexcused late homework will be marked down by 50%.

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<tr>
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<th>90-100%</th>
<th>80-89%</th>
<th>70-79%</th>
<th>60-69%</th>
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<tr>
<td>Design Project/Presentation</td>
<td>A</td>
<td>B</td>
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<td>F</td>
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<td>2 Exams</td>
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<td>Final Exam</td>
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Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading</th>
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<tbody>
<tr>
<td>1</td>
<td>Course Introduction, Ray Optics</td>
<td>Ch. 1</td>
</tr>
<tr>
<td>2</td>
<td>Wave Optics</td>
<td>Ch. 2</td>
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<td>3</td>
<td>Gaussian Beams</td>
<td>Ch. 3</td>
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<tr>
<td>4, 5</td>
<td>Fourier Optics</td>
<td>Ch. 4</td>
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<tr>
<td>6</td>
<td>EM Optics</td>
<td>Ch. 5</td>
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<td>7</td>
<td>Polarization</td>
<td>Ch. 6</td>
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<td>8</td>
<td>Photonic Crystal Optics, Waveguides</td>
<td>Ch. 7, 8</td>
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<tr>
<td>9</td>
<td>Optical Fibers</td>
<td>Ch. 9</td>
</tr>
</tbody>
</table>
Week | Topic | Required Reading
--- | --- | ---
10 | Photon Optics, Light-Matter Interactions | Ch. 12, 13
11 | Resonator Optics, Laser Amplifiers | Ch. 10, 14
12 | Lasers | Ch. 15
13 | Semiconductor Optics, Semiconductor Photon Sources | Ch. 16, 17
14 | Presentations | |

**Americans with Disabilities Act (ADA)**

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**Academic Integrity**

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Texas A&M University
Departmental Request for a New Course
Undergraduate ∙ Graduate ∙ Professional
∙ Submit original form and attach a course syllabus.

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

2. Course prefix, number and complete title of course: CHEM-670: Physical Methods in Biological Chemistry

3. Catalog course description (not to exceed 50 words):
Overview of current methods for the characterization of biological macromolecules, including protein structure, protein-ligand interactions, protein folding. Techniques discussed include nuclear magnetic resonance, optical spectroscopy, calorimetry, electron paramagnetic resonance, Mössbauer spectroscopy, X-ray crystallography, electron microscopy, and mass spectrometry.

4. Prerequisite(s):
Graduate Standing or Approval of Instructor

Cross-listed with: Stacked with:

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

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

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

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

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

M.S., PhD in Chemistry

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

9. Prefix Course # Title (excluding punctuation)

   CHEM 670 PHYS METH IN BIOL CHEM

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

   Approval recommended by:
   Department Head or Program Chair (Type Name & Sign) Date
   Chair, College Review Committee Date
   Dean of College Date
   Chair, GC or UCC Date

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

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

Syllabus  
CHEM-670: Physical Methods in Biological Chemistry  

Instructors:  
Dr. Christian Hilty (chilty@mail.chem.tamu.edu) - Module I  
Phone: (979) 862-3099  
Office: CHEM 1227 (2nd floor, "72-wing")  

Dr. Paul Lindahl (lindahl@mail.chem.tamu.edu) - Instructor of Record, Module II  
Phone: (979) 845-0956  
Office: CHEM 1129  

Dr. David Barondeau (barondeau@mail.chem.tamu.edu) - Module III  
Phone: (979) 458-0735  
Office: LSB 1196 (Integrated Life Sciences Building)  

Course Hours:  
Monday, Wednesday, Friday TBD  

Location:  
TBD  

Prerequisites:  
Graduate standing. Exceptions may be made - students who are not graduate students please contact the instructor prior to registration.  

Required Textbook:  
None  

Office Hours:  
By appointment with the instructor of the pertinent module. For general questions please see Dr. Lindahl.  

On-line:  
Additional course information and grades may be posted at http://elearning.tamu.edu/.  

Topics covered:  
The course constitutes an overview of the current methods for the characterization of biological macromolecules, including protein structure, protein-ligand interactions, protein folding. Techniques discussed are: Module 1 - nuclear magnetic resonance, optical spectroscopy, circular dichroism, fluorescence, surface plasmon resonance; module 2 - isothermal titration calorimetry, electron paramagnetic resonance, Mössbauer spectroscopy; module 3 - X-ray crystallography, electron microscopy, small-angle X-ray scattering, mass spectrometry.
<table>
<thead>
<tr>
<th>Day</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to Nuclear Magnetic Resonance</td>
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<td>Semiclassical Description of NMR</td>
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<td>Fourier Transform, Chemical Shift</td>
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<td>4</td>
<td>Quantum Description of NMR</td>
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<td>Scalar couplings, product operators</td>
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<td>Instrumentation</td>
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<td>NMR of Macromolecules, Multidimensional NMR</td>
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<td>Nuclear Overhauser Effect and Structure Calculation</td>
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<td>Optical Spectroscopy, Molecular Orbitals</td>
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<td>10</td>
<td>Transition Probabilities, Selection Rules</td>
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<td>11</td>
<td>Spectroscopy of Biological Molecules, Circular Dichroism</td>
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<td>12</td>
<td>Fluorescence, Forster Resonance Energy Transfer</td>
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<td>Surface Plasmon Resonance, Fourier Transform Infrared</td>
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<td>Exam I</td>
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<td>15</td>
<td>Isothermal titration calorimetry</td>
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<td>16</td>
<td>Isothermal titration calorimetry</td>
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<td>17</td>
<td>Electron paramagnetic resonance: Introduction</td>
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<td>18</td>
<td>Electron paramagnetic resonance: Theory and applications</td>
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<td>Electron Nuclear Double Magnetic Resonance</td>
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<td>Mössbauer spectroscopy: Theory and application</td>
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<td>Protein crystallography: Overview</td>
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<td>Protein crystallography: Data collection</td>
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<td>Protein crystallography: Principles of diffraction</td>
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<td>37</td>
<td>Protein crystallography: Refinement and validation</td>
</tr>
<tr>
<td>38</td>
<td>Electron microscopy</td>
</tr>
<tr>
<td>39</td>
<td>Small angle X-ray scattering</td>
</tr>
<tr>
<td>40</td>
<td>Small angle X-ray scattering</td>
</tr>
<tr>
<td>41</td>
<td>Mass spectrometry</td>
</tr>
<tr>
<td>42</td>
<td>Mass spectrometry</td>
</tr>
</tbody>
</table>

**Exams:**

For each of the three modules, a separate written exam will be given. The exams in general cover the materials contained both in the class and in the homework. This class does not contain a comprehensive final exam, but the exam for the last module is given during the final examination period.
For all exams, a graphing or non-graphing calculator is required. All reference materials are prohibited, except if expressly authorized prior to the exam. Exams are individual exercises, and the scholastic dishonesty policies of the University will be enforced. For further information, please consult the Texas A&M University Student Rules.

**Homework:**

Reading assignments and exercises will be provided periodically. Exercises will be graded if turned in, but do not count towards the course grade.

**Course Grade:**

The course grade is composed in equal parts of the grades from the three written exams.

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<tbody>
<tr>
<td>Module 1</td>
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<tr>
<td>Module 2</td>
<td>33.3%</td>
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<td>Module 3</td>
<td>33.3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
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</table>

The following letter grades and percentages will be applied:
- A - 100-90.0%
- B - 89.9-80%
- C - 79.9-70.0%
- D - 69.9-60%
- F - 59.9-0%

**Attendance:**

In case of an absence from an exam, a makeup exam will be given only if the absence is University-excused. To claim an excused absence, you must provide appropriate documentation within the time frame specified in the TAMU Student Rule 7. Specifically, you must notify the instructor prior to an absence if known in advance, or by the end of the second working day after the absence in case of an emergency. In case of injury or illness, you must provide confirmation of a visit to a health care professional. The TAMU Explanatory Statement for Absence from Class will not be accepted as an excuse from attending exams.

**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](http://www.tamu.edu/aggiehonor/)

**Support Services:**

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.
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
   Computer Science and Engineering
   
   CSCE 664: Wireless and Mobile Systems

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

3. Catalog course description (not to exceed 50 words):
   Wireless and mobile systems; wireless communication fundamentals; wireless medium access control design; transmission scheduling; network and transport protocols over wireless design, simulation and evaluation; wireless capacity; telecommunication systems; vehicular, adhoc, and sensor network systems; wireless security; mobile applications.

4. Prerequisite(s):
   
   CSCE 463 or CSCE 464 or approval of instructor

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

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

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

   M.S. in Computer Science, M.S. in Computer Engineering, Ph.D. in Computer Science, Ph.D. in Computer Engineering

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

9. Prefix Course # Title (excluding punctuation)

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
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<th>CIP and Fund Code</th>
<th>Admin. Unit</th>
<th>Acad. Year</th>
<th>FICE Code</th>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

   Approval recommended by:

   Donald K. Friesen 11/29/10

   Chair, College Review Committee
   Robin Autenrieth 1/24/11

   Dean of College
   Robin Autenrieth 1/24/11

   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 or sandra-williams@tamu.edu.
Curricular Services – 3/09

22 of 55 BB
February 2, 2011

MEMORANDUM

To: Hank Walker, Professor & Graduate Coordinator, Department of Computer Science and Engineering

From: Scott L. Miller, Professor & Graduate Coordinator, Department of Electrical and Computer Engineering

Subject: CSCE 664 - Wireless and Mobile Systems

The Electrical and Computer Engineering Department has reviewed the proposed course, CSCE 664 - Wireless and Mobile Systems, and found that while the course has a substantial content that overlaps a number of courses taught in our department, the creation of this course presents no threat to any of our courses nor should it prevent us from developing any related courses in the future. The Department of Computer Science and Engineering has our support in the creation of this course. If there are any questions, please feel free to contact me at the address or phone number on this letterhead.
Course title and number  CSCE 664: Wireless and Mobile Systems  
Term (e.g., Fall 200X)  Spring 2012  
Meeting times and location  TBD  

Course Description and Prerequisites  
Wireless and mobile systems; wireless communication fundamentals; wireless medium access control design; transmission scheduling; network and transport protocols over wireless design, simulation and evaluation; wireless capacity; telecommunication systems; vehicular, adhoc, and sensor network systems; wireless security; mobile applications. 
Prerequisites: CSCE 463 or CSCE 464 or approval of instructor  

Learning Outcomes or Course Objectives  
Students will acquire background knowledge on wireless propagation, multiple access control and network/transport protocols for wireless. Students will learn how to design algorithms for wireless networks and how to simulate wireless network protocols. Students will become familiar with the current research topics in vehicular, mobile adhoc and sensor networks and wireless security, and will develop, implement and evaluate their own ideas. 
Students will implement in a network simulator wireless networking algorithms and protocols. Students will evaluate the performance of their algorithm/protocol design by comparing it, in simulator, with the state of art solutions. Students will read literature on recent research topics in cellular, vehicular, adhoc and sensor networking and wireless security, and make a presentation on a research topic of their interest. Students will develop their own research idea, as a class project.  

Instructor Information  
Name  Radu Stoleru  
Telephone number  (979) 862-8349  
Email address  stoleru@cse.tamu.edu  
Office hours  TBD  
Office location  HRBB 330B  

Textbook and/or Resource Material  
Nitin H. Vaidya, "Wireless Networks", UIUC ECE/CS 439 lecture notes, 2010. Research papers from premier wireless networking conferences and journals will be distributed in class.  

Grading Policies  
Assignments 15%  
Midterm 25%  
Class Project 45%  
Paper critique: 10%  
Participation 5%  
The grading scale will be: A ≥ 90% > B ≥ 80% > C ≥ 70% > D ≥ 60% > F.  
Assignments: there will be three homework assignments, each including paper-and-pencil problems from the textbook and/or programming problems.
Paper critique: there will be twelve paper summaries/critiques due, covering the papers presented in class.

**Attendance**

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

**Course Topics, Calendar of Activities, Major Assignment Dates**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading/Homework</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>2</td>
<td>Wireless transmission</td>
<td>Chapter 2; HW#1 due</td>
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<tr>
<td>3</td>
<td>Medium Access Control in wireless networks</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>4</td>
<td>Routing in wireless networks</td>
<td>Chapter 5; HW#2 due</td>
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<tr>
<td>5</td>
<td>Mobile IP, TCP over wireless</td>
<td>Chapter 6</td>
</tr>
<tr>
<td>6</td>
<td>Address assignment in wireless networks</td>
<td>Chapter 7; HW#3 due</td>
</tr>
<tr>
<td>7</td>
<td>Transport capacity of wireless networks</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>8</td>
<td>Midterm</td>
<td></td>
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<tr>
<td>9</td>
<td>Topics in cellular and satellite networking</td>
<td>Hand-outs; Paper critique due</td>
</tr>
<tr>
<td>10</td>
<td>Topics in vehicular networking</td>
<td>Hand-outs; Paper critique due</td>
</tr>
<tr>
<td>11</td>
<td>Topics in wireless adhoc networking</td>
<td>Hand-outs; Paper critique due</td>
</tr>
<tr>
<td>12</td>
<td>Topics in wireless sensor networking</td>
<td>Hand-outs; Paper critique due</td>
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<tr>
<td>13</td>
<td>Topics in wireless sensor networking</td>
<td>Hand-outs; Paper critique due</td>
</tr>
<tr>
<td>14</td>
<td>Topics in wireless security</td>
<td>Hand-outs; Paper critique due</td>
</tr>
<tr>
<td>15</td>
<td>Project Presentations</td>
<td></td>
</tr>
</tbody>
</table>

**Americans with Disabilities Act (ADA)**

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**Academic Integrity**

For additional information please visit: [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor)

"An Aggie does not lie, cheat, or steal, or tolerate those who do."
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. Request submitted by (Department or Program Name):
   History

2. Course prefix, number and complete title of course:
   HIST 635 Writing History

3. Catalog course description (not to exceed 50 words):
   Development of writing skills for graduate students in history; preparation of publishable-quality article-length essays based on primary sources; peer review and criticism.

4. Prerequisite(s): graduate standing, approval of instructor
   Cross-listed with:  
   Stacked with:  
   Cross-listed courses require the signature of both department heads.

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

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

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

8. M.A., Ph.D. in history

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

<table>
<thead>
<tr>
<th>Prefix</th>
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<th>Title (excluding punctuation)</th>
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<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Approval recommended by:

Walter L. Buenger  
Department Head or Program Chair (Type Name & Sign)  
Date

Chair, College Review Committee  
Date

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

Dean of College  
Date

Chair, GC or UCC  
Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services  
Date  
Effective Date

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

Instructor: Sylvia D. Hoffert
Office: Glasscock 210 B
Office Hours: Tues and Thurs. 11-1 and by appointment
Email: shoffert@tamu.edu
Phone: 979-845-8583

Course Description: This class is designed to strengthen students’ historical writing skills by systematically analyzing the ways in which historians present their research to other scholars and the general public. In order to do so we will spend the first few weeks reading and discussing literature that outlines and analyzes the writing process. The rest of the semester will be devoted to writing a manuscript of using primary resources.

Responsibility of Class Members: This course provides you the opportunity to systematically engage in scholarly writing and to refine your skills in that area. Those who sign up for this class should come prepared to begin writing. That means that you should already have done the bulk of your research for your particular project.

I also expect you to take your responsibilities as a member of a writing group seriously. It will be your job not only to work on your own project but help the members of your writing group by providing them with thoughtful advice concerning their work.

Responsibility of Graduate Student Advisors: Because I claim no expertise beyond the field of American women’s history and nineteenth century social history, I will depend upon your advisor to monitor the progress you are making on your project in terms of content. Therefore, I will expect you to turn each stage of your writing project in to your advisor as well as to me and your writing group for comment. I will depend on him or her to evaluate what you have written and submit a grade to me regarding what you have turned in. It is imperative, therefore, that you discuss taking this class with your advisor to make sure that he or she is willing to devote the time necessary to fulfill this expectation.

Prerequisites: Graduate Standing; approval of instructor.

Required Books
Anne Lamott, Bird by Bird: Some Instructions on Writing and Life (New York: Anchor, 1994)
Course Requirements:

You will be required to participate in discussions of the reading assignments, systematically critique the work of those in your writing group both verbally and in writing, and produce a conference paper, thesis or dissertation chapter, or publishable article.

Grades:

You will be graded on your class participation, the thoroughness of the critiques that you will provide to the other members of your writing group, and the quality of your final project.

Class participation: 20%
Writing group critiques: 20%
Writing assignment: 60%

**Grading Scale:**

- 90-100 = A
- 80-89 = B
- 70-79 = C
- 60-69 = D
- Below 60 = F

**Students with Disabilities:** The Americans with Disabilities Act is a federal anti-discrimination law that provides civil rights protection for persons with disabilities. Among other things, this law requires that students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If a student believes that he or she has a disability requiring accommodation, he or she should contact the Office of Support Services for Students with Disabilities Room B-118 in Cain Hall (845-1637). It is the responsibility of the student to discuss this matter with the professor.

**Academic Dishonesty/Plagiarism:** “An Aggie does not lie, cheat, or steal, or tolerate those who do.” You are expected to be aware of the Aggie Honor Code, the Honor Council Rules and Procedures, and the University’s information regarding plagiarism, stated at [www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor). Plagiarism is a form of cheating. According to the aggiehonor web site it is “the appropriation of another person’s ideas, processes, results or words without giving appropriate credit.” Plagiarism occurs when a student uses materials taken in whole or in part from someone else’s research or writing including that which may be found on web sites, books, magazines, journals, newspapers, or other students’ papers. If you are unsure of the meaning of plagiarism, please see the professor. The academic community takes plagiarism very seriously. Committing plagiarism will result in receiving an F for the assignment, may lead to an F in the course, and may result in expulsion from the university.
Reading and Writing Schedule

**Week I**

Introduction to the Class

#1 We will explore your research topics in class. Your discussion of your topic should center on the following issues: What question are you trying to answer? Why is this question important? And what sources do you have available? What problems do you foresee in writing up your research?

#2 Come to class prepared to discuss the historical text you admire the most and analyze why you think it is well-written.

**Week II**

#1 Read and Discuss Lamont

#2 Come to class prepared to turn in a 100 – 150 word statement of your research topic/question as well as a working bibliography of secondary and primary sources on your topic. The bibliography is intended to serve as the basis for the review of the literature in your paper, article, or dissertation.

#3 We will set up our writing groups this week.

**Week III**

#1 Read and Discuss Belcher

#2 Discuss Organizational Principles Related to Writing Introductions
A good introduction is essential for any piece of historical writing. This week we will analyze the introduction to Shawn Johansen’s *Family Men* and establish a criteria for evaluating each other’s introductions.

#3 As a professional historian you will be asked to write critiques of article manuscripts, book manuscripts, and text books at the request of editors. We will also discuss what should be included in such critiques.

#4 Discuss documentation (footnotes/endnotes).

**Week IV**

#1 Read and Discuss Bolker
#2 Send introductions via email attachment to me, your advisor, and to the members of your writing group to be critiqued. Critiques will be made verbally and in writing in class on Feb. 18.

**Week V**

#1 We will provide each other with feedback on our introductions.


**Week VI -- Writing and Conferences**

**Week VII**

#1 Read Ernesto Chavez, Miroslava Chavez-Garcia and Luis Alvarez, "Preparing a Successful Fellowship or Grant Application," *OAH Newsletter*, August, 2009, 7, 14; David Oshinsky, "No Thanks, Mr. Nabokov" -- handouts.

#2 At some point in your research and writing process, you will need to consider applying for fellowships or grants. This week we will discuss the process of grant writing.

#3 Once you have produced what you consider to be a publishable manuscript, you will have to choose a place to send it and write a letter to the editor of the journal or publisher you have selected. If an editor is interested in your project, he or she will ask you to submit all or part of it for consideration. If he or she is interested in its publication, he or she will send it off to readers who will send in reports evaluating the text. They will usually demand revisions. We will discuss these matters as well.

**ON MONDAY of this week** -- send a draft of your paper to me, your advisor, and your writing group. Critiques will be made in class both verbally and in written form on Thurs., March 25.

**Spring Break**

**Week VIII -- Critiques of first drafts due in class**

**Week IX -- Writing and Conferences**

**Week X -- Writing and Conferences**
ON MONDAY of this week – Send second draft of your paper to me, your advisor, and your writing group. Critiques will be made both verbally and in written form on Thurs., April 15.

Week XI -- Critiques of second drafts due in class

Week XII -- Writing

Week XIII -- Writing

Week XIV -- Papers Due
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

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

2. Course prefix, number and complete title of course: HORT 645 World Agriculture and International Plant Breeding

3. Catalog course description (not to exceed 50 words): Evolution of world agriculture; plant breeding and improved varieties; international agricultural research centers and green revolution; population growth; environmental challenges; IPR; role of plant breeding and biotechnology in meeting world food needs.

4. Prerequisite(s): SCSC 304, HORT 404 or consent 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.

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

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

9. Approval recommended by:

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

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

Submitted to Coordinating Board by:

Associate Director, Curricular Services Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu.
WORLD AGRICULTURE AND INTERNATIONAL PLANT BREEDING
SCSC/HORT 645-600  FALL 2011
B. B. SINGH
HPCT 123  Wednesday, 10:20 – 11:10

1. Course description and pre-requisite
Pre-requisite – SCSC.304 or Hort.404 or consent of the instructor
Evolution of world agriculture; plant breeding and improved varieties; international
agricultural research centers and green revolution; CGIAR and other Non- CGIAR
programs for international agricultural research and development; future population
growth and food needs; environmental challenges, IPR issues and the role of plant
breeding and biotechnology in feeding the world in 21st century.

2. Learning outcomes (course objectives)
At the end of the course, the students would be aware of the current situation in world
agriculture, international agriculture and plant breeding programs, green revolution and
related issues, Consultative Group on International Agricultural Research (CGIAR) and
non-CGIAR programs for international agriculture, future challenges and opportunities
to achieve global food security in the wake of growing population, global warming,
decreasing water availability, IPR issues and environmental concerns.

3. Instructor information
Name – Dr. B.B. Singh, Tel. 845-3066, b Singh@ag.tamu.edu, 8am-5pm, Rm.428, Heep
Building

4. Text book and resource materials
No text book. Web based references and relevant publications:
www.cipotato.org; www.agra.org; websites of relevant countries, and others from time
to time.
Handouts would be given for major topics.

5. Grading policies
Attendance - 10%
One hour exam – 20%
Two assignments – 30%
Final examination – 40%

Grade : A = 90 and above
    B = 80-89
    C = 70-79
    D = 60-69
    F = 50-59
6. **Class Schedule**

1. Evolution of world agriculture – a historical perspective.
2. Origin, spread and economic importance of major crops in different regions.
3. Birth of genetics and science-based plant breeding.
4. Success in developing high yielding hybrid maize varieties in USA
5. US initiative to improve agriculture in Mexico and India
6. International Agricultural Research Centres established by Rockefeller and Ford Foundations in Asia, Africa and Central and South America.
7. Green Revolution – an unprecedented success story in India and other countries.
8. Consultative Group on International Agricultural Research (CGIAR) and other Non-CGIAR programs to support international agricultural research, training and development activities.
9. CGIAR sponsored International Agricultural Research Centres and their mandates.
10. Breeding programs for major crops at CIMMYT, IRRI, IITA, CIAT, CIP, ICRISAT, WARDA and ICARDA and international variety trials.
11. Recent successes in plant biotechnology and its role in national and international plant breeding programs.
12. Reasons for ‘No Green Revolution’ in Africa and efforts to achieve it.

**Attendance Policy**

The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07).

**Academic Integrity Statement**

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

For more information, read the Honor Council Rules and Procedures at [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor)

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Texas A&M University
Departmental Request for a New Course
Undergraduate ▪ Graduate ▪ Professional
Submit original form and attach a course syllabus.

Form Instructions

1. Request submitted by (Department or Program Name): Industrial and Systems Engineering

2. Course prefix, number and complete title of course: ISEN 643. Strategic Construction and Engineering Management

3. Catalog course description (not to exceed 50 words): Strategic and systems perspectives applied to construction and engineering management projects, organizations, and industries; system dynamics methodology to model construction and engineering systems; understanding drivers of performance; feedback and high leverage points for performance improvement.

4. Prerequisite(s): Graduate classification or permission of the instructor

Cross-listed with: CVEN 654

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

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

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

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

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

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

M.Eng., M.S., Ph.D. in Engineering

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

Attach approval letters.

9. Prefix Course # Title (excluding punctuation)

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<th>643</th>
<th>STRATEGIC</th>
<th>CON</th>
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<td>Acad. Year</td>
<td>FICE Code</td>
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<td>0</td>
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</tr>
</tbody>
</table>

Approval recommended by:

Brett A. Peters
Department Head or Program Chair (Type Name & Sign) Date

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

Submitted to Coordinating Board by:

Associate Director, Curricular Services

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.

Curricular Services 3/10
DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING

Number and Title of Course:  ISEN 643  Strategic Construction and Engineering Management
Hours:  Lecturer 3  Lab 0,  Credits 3
Prerequisites:  Graduate standing or permission of the instructor

Course Description:  Strategic and systems perspectives applied to construction and engineering management projects, organizations, and industries; system dynamics methodology to model construction and engineering systems; understanding drivers of performance; feedback and high leverage points for performance improvement.

Learning Outcomes:  Students successfully completing this course should (1) have been exposed to and explored issues in the strategic management of engineering enterprises, (2) developed skills in building models of engineering enterprises and using the strategic process and policy design and analysis for improvement, (3) gain experience in the combined use of research literature and computer simulation modelling to investigate a specific engineering management issue, and (4) gain experience in teamwork.

Course Instructor:  David N. Ford
Telephone number:  845-3759  Email:  davidford@tamu.edu
Office hours:  10-11 AM, Tues-Thurs  Office location:  705D, CE/TTI Building


Grading Policy:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments and exercises</td>
<td>25%</td>
</tr>
<tr>
<td>Midterm Examination</td>
<td>40%</td>
</tr>
<tr>
<td>Term project:</td>
<td></td>
</tr>
<tr>
<td>Presentation</td>
<td>10%</td>
</tr>
<tr>
<td>Report</td>
<td>25%</td>
</tr>
</tbody>
</table>

Project paper and presentation will be graded based on how good of a review you provide for your selected topic, how logical, innovative, and feasible your proposed idea is, and how well you present your work to the class. Grades will be calculated on the basis of total points earned. The points can be curved based on class average and may lower the following standard.

A      90-100
B      80-89
C      70-79
D      60-69
F      59 and lower

Course Outline by Major Topics and Approximate Time Assigned to Each:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strategic engineering management issues</td>
</tr>
<tr>
<td>2</td>
<td>Experiencing the management of project dynamics</td>
</tr>
<tr>
<td>3</td>
<td>Conceptual modelling of dynamic engineering management systems</td>
</tr>
<tr>
<td>4</td>
<td>Formal modelling of engineering enterprises</td>
</tr>
<tr>
<td>5</td>
<td>Model validation, analysis, and use for strategic management</td>
</tr>
<tr>
<td>6</td>
<td>Project discussion and presentations</td>
</tr>
</tbody>
</table>

Total 14 weeks
Americans with Disabilities Act (ADA) Policy Statement
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services in Cain Hall, Room B118, or call 845-1637.

Academic Integrity Statement
“Aggies do not lie, cheat, or steal, nor do they 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. (Please see the Honor Council Rules and Procedures at http://www.tamu.edu/aggiehonor)
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. Request submitted by (Department or Program Name): Materials Science and Engineering (MSEN)
2. Course prefix, number and complete title of course: MSEN 603 Fundamentals of Soft and Biomaterials
3. Catalog course description (not to exceed 50 words): Introductory graduate-level survey on the general areas of soft materials and biomaterials; includes basic concepts of colloidal particle physics, polymer physics and chemistry and general concepts in biomaterials.

4. Prerequisite(s): Undergraduate general chemistry course; graduate classification

Cross-listed with: NA
Stacked with: NA

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

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

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

7. This course will be:
   a. required for students enrolled in the following degree programs(s) (e.g., B.A. in history)
      MSEN Ph.D.
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)
      M.S., Ph.D., Materials Science and Engineering; Aerospace, Biomedical, Chemical, Mechanical Engineering

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

9. Prefix  Course #  Title (excluding punctuation)
    MSEN  6 0 3  F N D M T L  S O F T  &  B I O M A T E R L S

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

Approved recommended by:

Ibrahim Karaman [Signature] 11/13/200
Department Head or Program Chair (Type Name & Sign) Date

Robin Autenrieth
Chair, College Review Committee

Robin L. Autenrieth
Dean of College

David Reed [Signature] 1/24/11
Chair, GC or UCC 

Submitted to Coordinating Board by:

Associate Director, Curricular Services
Sandra Williams

Date Effective Date

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

42 of 55 BB
MSEN 603 (Spring 2012)

Fundamentals of Soft and Biomaterials

Instructor: Nicole Zacharia Phone: 979-845-2204
E-mail: nzacharia@tamu.edu Office: ENPH 410

Prerequisites: undergraduate general chemistry; graduate classification

Class meeting times and location: To be announced in April 2011.

Description: MSEN 603 aims to serve as an introductory level survey for graduate students to the general areas of soft materials and biomaterials. Basic concepts of colloidal particle physics, polymer physics and chemistry as well as general concepts in biomaterials will be discussed.

Texts and References
Hamley, I.W., Introduction to Soft Matter (required)
Hiemenz, P.C., and T. P. Lodge, T.P., Polymer Chemistry (recommended)
Sperling, L.H., Introduction to Physical Polymer Science (recommended)
Young, R. J. and Lovell, P.A., Introduction to Polymer Chemistry (recommended)
Hiemenz, P.C., Rajagopalan, R., Principles of Colloid & Surface Chemistry (recommended)
Evans, D.F. Wennerstrom, H., The Colloidal Domain (recommended)
Ratner, Buddy, Ed., An Introduction to Materials in Medicine (recommended)

Grading Policy
Grades will be determined by a combination of tests, homework assignments/projects and a final exam. There will weekly homework assignments, as well as a five-page paper due towards the end of the semester. There will be two exams during the semester as well as a final exam.

Homework 20% Exam 1 25% Exam 2 Paper 5% Final 25%

Week Topic
1 Intro to colloids, hydrodynamics, Brownian motion
2 Electrostatics (debye-huckel, divo, electrophoresis)
3 Electrostatics, surfaces (chemistry/monolayers)
4 Aggregation/dispersal/sedimentation
5 Surface tension and contact angle
6 Amphiphiles, micelles and vesicles, liquid crystals
7 Intro to polymers, chain structure, basic synthesis
8 Spring break
9 MW determination, viscosity, glass transition
10 Polymer solution thermodynamics, crystallinity
11 Rubber elasticity, light scattering; Mechanical properties/viscoelasticity
12 Intro to biomaterials; natural polymers, hydrogels, bioerodible/bioresorbable material
13 Proteins and cells: adsorption and interaction with surfaces
14 Chemical and biochemical degradation of polymers, drug delivery
• **Americans with Disabilities Act (ADA) Policy Statement**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit [http://disability.tamu.edu](http://disability.tamu.edu).

• **Academic Integrity Statement and Policy** *"An Aggie does not lie, cheat or steal, or tolerate those who do."*
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. Request submitted by (Department or Program Name): Zachry Department of Civil Engineering

2. Course prefix, number and complete title of course: OCEN 677 Environmental Fluid Mechanics

3. Catalog course description (not to exceed 50 words):
   Introduction to fluid and mass transport in naturally occurring flows. Topics include molecular and turbulent diffusion; dispersion; river, estuary, and ocean mixing; dissolution boundary layers; tidal mixing; offshore wastewater outfalls; introduction to environmental quality numerical modeling.

4. Prerequisite(s): CVEN 311 or equivalent

   Cross-listed with: OCEN 475
   Stacked 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 this course be repeated within the same semester? Yes ☑ No

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

MEN, M.S., Ph.D. in Civil or Ocean Engineering

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

9. Table:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Course #</th>
<th>Title (excluding section)</th>
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<tbody>
<tr>
<td>OCEN</td>
<td>677</td>
<td>Environmental Fluid Mechanics</td>
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</table>

<table>
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<th>CH  and Fund Code</th>
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<th>Acad. Year</th>
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<td>063011</td>
<td>12003632</td>
</tr>
</tbody>
</table>

   Approval recommended by:

   Mark Burns
   Department Head or Program Chair (Type Name & Sign)  Date
   Robin Autenrieth
   Chair, College Review Committee  Date
   Robin Autenrieth
   Dean of College  Date
   Dave Reed
   Chair, GC or UCC  Date

   Submitted to Coordinating Board by:

   Associate Director, Curricular Services

   Date  Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
Curricular Services – 3/10
OCEN 677
Environmental Fluid Mechanics

Instructor: Dr. Scott A. Socolofsky
Office: CE/TTI 802B
Office Hours: TR 11:00 a.m. – 12:00 p.m.
Telephone: (979) 845-4517
Email: socolofs@tamu.edu

Environmental Fluid Mechanics (3-0). Credit 3. A first course in environmental fluid mechanics: an introduction to fluid and mass transport in naturally occurring flows. Topics include molecular and turbulent diffusion; dispersion; river, estuary, and ocean mixing; dissolution boundary layers; tidal mixing; offshore wastewater outfalls; and an introduction to environmental quality numerical modeling. Prerequisite: CVEN 311.

The objective of this course is to introduce the physics and chemistry of transport and mixing of substances in the hydrosphere by learning to:

- Understand the effects of diffusion, advection, dispersion, and chemical reactions on concentrations in the environment
- Apply the governing transport equations to solve problems with diverse boundary and initial conditions
- Evaluate the important processes affecting fate and transport in a range of problem situations
- Synthesize the analysis tools developed in the course to solve real-world transport problems

1. Textbooks and Other Resources

There is one required textbook for this course:


There is also an on-line textbook by the course instructor available from the course website (see below) under the Book index heading

- Socolofsky, S. A. and Jirka, G. H. (2005), Mixing and Transport in the Environment, available for download from the course website under the topic “Book”.

To access the other online course materials (downloads of assignments, course handouts, related resources), please see the course web pages at

- http://ceprofs.tamu.edu/ssocolofsky/OCENx89/
Among the many other good textbooks on this subject, the following reference books are also recommended:


2. Tentative Course Calendar

The following table presents a tentative course calendar.

In the following table, the sections in the Reading column marked "C" are from Chin (2006) and those marked "S" are from Socolofsky and Jirka (2005); reading should be completed before the indicated lecture.

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Topic</th>
<th>Reading</th>
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<tbody>
<tr>
<td></td>
<td><strong>Introduction and Governing Equations</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Introduction, concentration, units of measure, dimensional analysis</td>
<td>C1.1-1.4, S1.1</td>
</tr>
<tr>
<td>2</td>
<td>Fick’s law</td>
<td>C2.1-2.6, S1.2</td>
</tr>
<tr>
<td>3</td>
<td>Diffusion equation</td>
<td>C3.1, S1.2</td>
</tr>
<tr>
<td>4</td>
<td>Instantaneous point source solution in 1D</td>
<td>C3.2.1, S1.3</td>
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<tr>
<td>5</td>
<td>Point source solution continued</td>
<td>C3.2.1, S1.3-1.4</td>
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<tr>
<td>6</td>
<td>Advection-diffusion equation</td>
<td>C3.2.2-3.2.5, S2.1</td>
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<tr>
<td>7</td>
<td>Measuring diffusion coefficients (Introduction to Field Experiment)</td>
<td>S3.3-3.4</td>
</tr>
<tr>
<td>8</td>
<td>Initial spatial distributions; fixed concentrations</td>
<td>C3.3, S2.2</td>
</tr>
<tr>
<td>9</td>
<td>Other solutions; superposition; image sources*</td>
<td>S2.3-2.4</td>
</tr>
<tr>
<td></td>
<td><strong>Riverine Mixing in the Environment (1D)</strong></td>
<td></td>
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<tr>
<td>10</td>
<td>Properties of turbulence</td>
<td>C4.1, S3.1</td>
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<tr>
<td>11</td>
<td>Reynolds decomposition; turbulent diffusion</td>
<td>C4.2, S3.1</td>
</tr>
<tr>
<td></td>
<td><strong>Exam 1: Fick’s law, diffusion equation, and basic solutions to the diffusion equation. (through lecture 9)</strong></td>
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<td>12</td>
<td>Taylor dispersion</td>
<td>C4.2, S3.2</td>
</tr>
<tr>
<td>13</td>
<td>Dispersion coefficients; Cowaselon Creek dye study example</td>
<td>C4.3-4.4, S3.3-3.4</td>
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## Topic Overview

<table>
<thead>
<tr>
<th></th>
<th>Topic</th>
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<tbody>
<tr>
<td>14</td>
<td>Reaction kinetics</td>
<td>S4.1-2.2</td>
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<td>15</td>
<td>Solution to the reacting advective transport equation</td>
<td>S4.3</td>
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<td>Spring Break – no class</td>
<td></td>
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<tr>
<td></td>
<td>Spring Break – no class</td>
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<tr>
<td>16</td>
<td>Open channel hydraulics</td>
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<tr>
<td></td>
<td><strong>Lake, Estuary, and Ocean Mixing (2 and 3D)</strong></td>
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<td>17</td>
<td>Boundary exchange</td>
<td>S5.1</td>
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<td>18</td>
<td>Air/water interface</td>
<td>C4.4.2-4.4.4</td>
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<td>19</td>
<td>Sediment/water interface</td>
<td>S5.3</td>
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<td>20</td>
<td>Ocean outfalls: Near field 1</td>
<td>C8.1</td>
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<tr>
<td>21</td>
<td>Ocean outfalls: Near field 2</td>
<td>C8.2</td>
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<td>22</td>
<td>Ocean outfalls: Far field*</td>
<td>C8.3</td>
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<td><strong>Exam 2: River, boundary, and estuary mixing</strong></td>
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<td></td>
<td><strong>Applications</strong></td>
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<td>23</td>
<td>Water quality control in estuaries</td>
<td>C8.4</td>
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<td>24</td>
<td>Field experiment</td>
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<td>25</td>
<td>Field experiment debriefing</td>
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<tr>
<td>26</td>
<td>Final project presentations</td>
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<td></td>
<td><strong>Final Exam: Comprehensive</strong></td>
<td></td>
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</tbody>
</table>

*Advanced topics will be covered as time permits*

### 3. Grading

Your final grade is broken down as follows:

- Homework: 20%
- Group Project: 20%
- Exam 1: 30%
- Exam 2: 30%

Letter grades will be assigned from your total course score according to ≥90% to 100%: A, ≥80% and <90%: B, ≥70% and <80%: C, ≥60% and <70%: D, below 60%: F. Please note that homework and the group project are 40% of your total grade.

### 4. Homework Assignments

Homework will be assigned periodically and the due date announced. A tentative schedule of homework assignments is posted on the course website.

**POLICY:** Homework is a substantial part of your course grade and must be completed individually. You may ask others for help at places where you have made diligent attempts and have become stumped. You may ask others for confirmation of results at significant milestones in the problem. You may not share computer programs, Word documents, or Excel files. Copying another student’s solution, even if you slightly change the presentation will be considered as cheating and given a grade of zero (see Plagiarism statement below).

Homework problems must be answered clearly, showing all your work, and should be easy to follow. Where applicable, the solution to each problem should contain:
- A brief statement of the problem
- A sketch or graph
- A list of all the important assumptions made to solve the problem
- The general form of the equations used to solve the problem
- An equation with the plugged in numbers and the highlighted solution

Failure to include one of these elements will result in lost credit for the problem. Not all homework problems may be graded. Partial credit will be given for wrong answers that demonstrate some of the correct solution method.

Homework is due at the start of class on the assigned day either in class or in my mailbox on the 8th floor of the CE/TTI building. Unless you have a university excuse (see Absences below), late assignments will not be accepted for full credit. Please do not ask for exceptions.

5. Group Project

There will be one group project that will be due on the last day of class. Different aspects of the project will be assigned throughout the semester. You will work in groups of three students each. Details will be presented in February.

6. Class Participation and Quizzes

You are expected to attend all classes, turn in all assignments, and complete all exams at their scheduled times. Exceptions are only permitted for university excused absences (see Absences below).

Classes will start on time, and pointers for the homework assignments and last-minute changes to the schedule may be announced in class. It is your responsibility to be in class to receive this information or to get the information from another student.

In-class quizzes will be counted toward up to 5% of the homework grade.

7. Exams

Two 75-minute exams are scheduled (see Course Calendar above for scheduling). The grading of the exams will be based on both the approach and the final answer. Exams will be closed book and closed notes. You may prepare notes on the front and back of one page of 8½ x 11 paper for each exam. You will need a hand-held calculator for each exam. It is your responsibility to ensure that your calculator is working and will perform in the examination.

8. Graduate-level Component

This course meets together with OCEN 475, an undergraduate-level course in Mixing and Transport in the Environment. Although the lectures for both course offerings will be the same, the assignments will be different for undergraduates compared to graduate students. To receive graduate-level credit for this course, graduate students will be expected to complete separate homework assignments from the undergraduate students and a separate, group course project. Both the graduate assignments and the course project will be assigned at a graduate level. The goal of these assignments will be to get graduate students to a level that they can easily read the journal literature in environmental fluid mechanics. Hence, assignments will be directed toward research.
9. Plagiarism and Cheating

"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. As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, 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 permission of that person. Since the homework grade for this course is a high percentage of your total grade, no plagiarism or cheating will be permitted in the homework. Violations will be handled in accordance with the Aggie Honor System Process described on the web site.

10. Absences

The university views class attendance as an individual student responsibility. Students are expected to attend class and to complete all assignments. Instructors are expected to give adequate notice of the dates on which major tests will be given and assignments will be due. This information should be provided on the course syllabus, which should be distributed at the first class meeting. For more details, please read Part I, Rule~7 of the Texas A\&M University Student Rules at

- [http://student-rules.tamu.edu/](http://student-rules.tamu.edu/)

Please contact me as soon as you know you will miss a class or an exam so that a reasonable alternative can be accommodated. Unexcused absences will result in a grade of zero for the missed work. The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence.

12. 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 Cain Hall or call 845-1637.
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. Request submitted by (Department or Program Name): Soil and Crop Sciences

2. Course prefix, number and complete title of course: SCSC 645 World Agriculture and International Plant Breeding

3. Catalog course description (not to exceed 50 words): Evolution of world agriculture; plant breeding and improved varieties; international agricultural research centers and green revolution; population growth; environmental challenges; IPR; role of plant breeding and biotechnology in meeting world food needs.

4. Prerequisite(s): SCSC 304, HORT 404 or consent 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.

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

M.S. or Ph.D. status

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

9. Prefix Course # Title (excluding punctuation)

<table>
<thead>
<tr>
<th>Lect</th>
<th>Lab</th>
<th>SCH</th>
<th>CIP and Fund Code</th>
<th>Admin Unit</th>
<th>Acad Year</th>
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<td>2</td>
<td>2</td>
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</table>

Approval recommended by:

David Balensperger
Department Chair or Program Chair (Type Name & Sign) Date

Chair, College Review Committee Date

Tim Davis
Department Chair or Program Chair (Type Name & Sign) Date

Dean of College Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.

Curricular Services – 3/10
WORLD AGRICULTURE AND INTERNATIONAL PLANT BREEDING
SCSC/HORT 645-600  FALL 2011
B. B. SINGH
HPCT 123  Wednesday, 10:20 – 11:10

1. **Course description and pre-requisite**
   Pre-requisite – SCSC.304 or Hort.404 or consent of the instructor
   Evolution of world agriculture; plant breeding and improved varieties; international
   agricultural research centers and green revolution; CGIAR and other Non-CGIAR
   programs for international agricultural research and development; future population
   growth and food needs; environmental challenges, IPR issues and the role of plant
   breeding and biotechnology in feeding the world in 21st century.

2. **Learning outcomes (course objectives)**
   At the end of the course, the students would be aware of the current situation in world
   agriculture, international agriculture and plant breeding programs, green revolution and
   related issues, Consultative Group on International Agricultural Research (CGIAR) and
   non-CGIAR programs for international agriculture, future challenges and opportunities
   to achieve global food security in the wake of growing population, global warming,
   declining water availability, IPR issues and environmental concerns.

3. **Instructor information**
   Name – Dr. B.B. Singh, Tel. 845-3066, bsingh@ag.tamu.edu, 8am-5pm, Rm.428, Heep Building

4. **Text book and resource materials**
   No text book. Web based references and relevant publications:
   www.cipotato.org; www.agra.org; websites of relevant countries, and others from time
to time.
   Handouts would be given for major topics.

5. **Grading policies**
   Attendance - 10%
   One hour exam – 20%
   Two assignments – 30%
   Final examination – 40%

   Grade : A = 90 and above
   B = 80-89
   C = 70-79
   D = 60-69
   F = 50-59
6. Class Schedule

1. Evolution of world agriculture – a historical perspective.
2. Origin, spread and economic importance of major crops in different regions.
3. Birth of genetics and science-based plant breeding.
4. Success in developing high yielding hybrid maize varieties in USA
5. US initiative to improve agriculture in Mexico and India
6. International Agricultural Research Centres established by Rockefeller and Ford Foundations in Asia, Africa and Central and South America.
7. Green Revolution – an unprecedented success story in India and other countries.
8. Consultative Group on International Agricultural Research (CGIAR) and other Non-CGIAR programs to support international agricultural research, training and development activities.
9. CGIAR sponsored International Agricultural Research Centres and their mandates.
10. Breeding programs for major crops at CIMMYT, IRRI, IITA, CIAT, CIP, ICRISAT, WARDA and ICARDA and international variety trials.
11. Recent successes in plant biotechnology and its role in national and international plant breeding programs.
12. Reasons for ‘No Green Revolution’ in Africa and efforts to achieve it.

Attendance Policy

The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/rule07.

Academic Integrity Statement

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

For more information, read the Honor Council Rules and Procedures at http://www.tamu.edu/aggiehonor

Americans with Disabilities Act (ADA)

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, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu.