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

Form Instructions:
1. Request submitted by (Department or Program Name): Electrical and Computer Engineering

2. Course prefix, number and complete title of course: ECEN 755 Stochastic Systems

3. Catalog course description (not to exceed 50 words): This course will cover the principles of stochastic systems, including performance evaluation, estimation, control, scheduling, identification and adaptation, as well as Electrical and Computer Engineering applications. It will include applications in communication networks and control.

4. Prerequisite(s): Math 411; approval of instructor and graduate classification
   Cross-listed with: 
   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)
      MS and PHD, ELEN and CEEN

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

9. Prefix | Course # | Title (excluding punctuation) | Lect. | Lab | SCH | CHP and Fund Code | Admin. Unit | Acad. Year | HUC Code | Level | Date
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ECEN | 755 | STOCHASTIC SYSTEMS | 0 | 3 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 6 | 0 | 9 | 3 | 6 | 13-14 | 0 | 0 | 3 | 6 | 3 | 2

Approval recommended by:

C. Singh
Department Head or Program Chair (Type Name & Sign) Date 8/1/12

Chair, College Review Committee Date 8/19/13

Dean of College Date 9-11-13

Chair, GC or USC 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
Course Title: ECEN 755: Stochastic Systems

Term: Fall 2014

Meeting Times & Location: TBA

Course Description
Important applications in electrical and computer engineering require knowledge of stochastic systems. This course deals with several models of stochastic systems and their analysis. It studies topics including performance evaluation, estimation, control, scheduling, identification and adaptation. It has applications in several fields such as computer engineering, communication networks and control.

Prerequisites
Math 411; Approval of Instructor and Graduate classification

Class absences:
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.

Learning Outcomes or Course Objectives
Upon completion of this course, students will be able to (i) formulate stochastic systems problems with application to Electrical and Computer Engineering, (ii) analyze stochastic systems methods using a variety of methodologies, and (iii) develop algorithms for stochastic systems problems in Electrical and Computer Engineering.

Instructor Information
Name: P. R. Kumar
Telephone number: 979-862-3376
Email address: prk@tamu.edu
Office Hours: Wednesdays 10-11am
Office Location: Room 331E WERC

Textbook

Grading
Homeworks: 50%, Project 50%
Grading scale (will be adjusted according to student performance distribution):
90-100 A, 80-89 B, 70-79 C, 60-69 D, below 59 F.
Late work will be accepted according to the provisions of Student Rule 7: http://student-rules.tamu.edu/rule07

Course Schedule

1. Stochastic Models (14 hours)
   a. Markov chains (1 hours)
   b. Classification and class properties (3 hours)
   c. Equilibrium distribution (1 hours)
   d. Stability (3 hours)
   e. Queueing networks (6 hours)

2. Dynamic Programming (13 hours)
   a. Shortest path problem (1.5 hours)
   b. The dynamic programming recursion (1 hours)
   c. Controlled Markov chains (1.5 hours)
   d. Finite horizon Cost Criterion (1.5 hours)
   e. Discounted and Average Cost criteria (6 hours)
   f. Value iteration, policy iteration and linear programming (1.5 hours)

3. Partially observed systems (9 hours)
   a. State estimation (1.5 hours)
   b. Unnormalized distribution (1.5 hours)
   c. Information state (1.5 hours)
   d. Dynamic programming for partially observed systems (3 hours)
   e. Bandit problems (1.5 hours)

4. Linear Quadratic Gaussian Systems (6 hours)
   a. State estimation and Kalman filter (1.5 hours)
   b. The separation of estimation and control (1.5 hours)
   c. Linear Gaussian and LQG Systems (1.5 hours)
   d. Certainty equivalence (1.5 hours)

TOTAL 42 hours

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. For additional information visit http://disability.tamu.edu

Academic Integrity Statement and Policy

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

For additional information please visit: http://aggiehonor.tamu.edu
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and attach a course syllabus.

Form Instructions

1. Request submitted by (Department or Program Name): Electrical and Computer Engineering

2. Course prefix, number and complete title of course: ECEN 777 Photonics: Fiber and Integrated Optics

3. Catalog course description (not to exceed 50 words): Optical power and spectral measurements of singlemode and multimode optical fibers, hands-on arc fusion splicing, lasers, amplifiers, interferometers, photodetectors, integrated optics, fiber-optic devices, optical modulators

4. Prerequisite(s): Equivalent of ECEN 322 and 370 or approval of instructor

Cross-listed with: Stacked with: ECEN 477

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)

   BS, MS and PhD students in ECEN

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: ECEN

Course #: 777

Title (excluding punctuation): Photonics

Fiber Optics

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Approval recommended by:

[Signature]

Department Head or Program Chair (Type Name & Sign) Date 7/26/13

Chair, College Review Committee Date 8/1/13

Dean of College Date 9/1/13

Chair, COC or UCC Date 9/1/13

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

JUL 26 2013
SYLLABUS

Course title and number: Photonics: Fiber and Integrated Optics ECEN 777
Term: Spring TBA
Lecture times and location: TR 2:20-3:35PM, ZEC 223A
Laboratory Times:
Section 504/601: TBD
Section 505/602: TBD
Section 506/606: TBD
Section 508/607: TBD
Official Class Syllabus: Posted on Elearning.tamu.edu

Course Description and Prerequisites
Optical power and spectral measurements of singlemode and multimode optical fibers, hands-on arc fusion splicing, lasers, amplifiers, interferometers, photodetectors, integrated optics, fiber-optic devices, optical modulators.

Prerequisites: Equivalent of ECEN 322 and 370 or approval of instructor.

Learning Outcomes or Course Objectives
1. Safely handle fiber and semiconductor lasers, prepare fiber for splicing and splice standard singlemode fiber
2. Describe attributes of commonly used sources and detectors and perform basic optical measurements for measuring the output power sources and the loss of optical devices
3. Describe the physical principles on which waveguiding is based, the concept of modes and the application to coupling optical fibers to sources, detectors and free-space systems
4. Understand the principles of diffraction and perform spectrally-resolved measurements.
5. Understand the physical principles nonlinear optics

Instructor Information
Name: Christi Madsen
Telephone number: 979-845-4935
Email address: cmadsen@tamu.edu
Office hours: After lectures or by appointment
Office location: JEB 724
TA: TBA

Textbook and/or Resource Material
Class notes. TAMU Library electronic resources including:
Andrew Yablon, 2005, Fiber Optic Splicing
Powers, 2012, Fundamentals of Nonlinear Optics
Hecht, "Understanding Fiber Optics"
Saleh and Teich: "Fundamentals of Photonics"
Agrawal: "Fiber-Optic Communication Systems"

Class Policies and Grading
Policies:
1. You are expected to attend all lectures and your assigned lab time.
2. Late work will be penalized with penalties determined at the discretion of the instructor in accordance with the university excused absence and attendance policy. See http://student-rules.tamu.edu/rule07.
3. Lab reports should be electronically prepared and emailed for submission to the TA.
4. Quizzes may be given and the grades included with the lab reports toward the overall grade.
5. For graduate credit, extra problems may be assigned on labs, homework, quizzes or tests.

**Grading:**
Lab Reports & quizzes 50%
Midterm 15%
Lab project & Final 35%

**Grading scale:** 90-100 A, 80-89 B, 70-79 C, 60-69 D, below 60 F.

**Mid-term Exam:** Tentatively March 21, 2013
**Final Exam:** May 8, 1-3pm
**Project Report Deadline:** April 27, 2013 by 5pm. Submit report by email.

**Tentative Course Topics (by week)**

1. Introduction & Lab Safety
2-3. Fiber optic handling, cleaving, splicing
4. Basic power and transmission measurements
5. Optical waveguiding, beam diffraction, fiber-to-fiber coupling
6-7. Amplifiers, lasers and broadband sources
8. Detectors and Noise
9. Diffraction gratings & spectral measurements
10-11. Fiber optic devices, sensors, & dispersion
12. Interference Filters, modulators, ring resonators
13. Integrated optics
14. Nonlinear optics

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

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Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

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

2. Course prefix, number and complete title of course: ECON 614: The Economics of Microfinance

3. Catalog course description (not to exceed 50 words):
   Analysis of recent research in financial markets in developing countries with a primary emphasis on microfinance; micro-asymmetries involved in lending; financial impact studies; the macro-economic literature on financial development and growth.

4. Prerequisite(s): ECON 607 or equivalent; graduate major in the Department of Economics’ master’s program or approval of director of master’s program.

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 Economics

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)
   ──────┼────────┼───────────────────────
         ECON 614 ECON OF MICROFINANCE

   Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | Acad. Year | FICE Code
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   Approval recommended by:
   Timothy J. Groenberg
   Department Head or Program Chair (Type Name & Sign) Date

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

   Submitted to Coordinating Board by:
   Associate Director, Curricular Services

Chair, College Review Committee Date
Chair, GCC or UCC Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu.
Curricular Services – 3/10
ECON 614: ECONOMICS OF MICROFINANCE  
SPRING 2014

Class Time: (Tuesday/Thursday) 3:05-4:20 pm  
Location: Allen 1002

Instructor: Dr. Adel Varghese  
Email: avarghese@tamu.edu  
Office: Allen 3057  
Office Hours: TBA

Class Website:

Description of Course

This course will analyze recent research in financial markets in developing countries. The first two thirds of the course will focus on the economics of microfinance. The recent publication of The Economics of Microfinance will provide us with a basic text covering the fundamental issues. A number of frontier issues in microfinance are covered in recent papers, these will supplement the text. The last third of the course will focus on other aspects of financial markets in developing countries, mainly the ties between financial development and growth.

Prerequisites: ECON 607 or equivalent; graduate major in the Department of Economics’ master’s program or approval of director of master’s program.


Learning Objectives

By the end of this course, students should:

- Be able to identify and describe the many different models for micro-finance.

- Understand thoroughly micro asymmetries in lending.

- Understand how to evaluate impact studies.

- Have improved their analytical and presentation skills.

- Understand the connection between financial development and growth.
Schedule:

WEEK 1: Introduction to Credit Markets and its Problems
T (T= Text): 1. Rethinking Banking

WEEK 2: Introduction to Credit Markets and its Problems (cont.)
T: 2. Why Intervene in Credit Markets?

WEEK 3: Group Lending: Theory
T: 4. Group Lending

WEEK 4: Beyond Group Lending
T: 5. Beyond Group Lending

WEEK 5: EXAM 1

WEEK 6: Impact Studies Microsaving & Microinsurance
T: 9. Measuring Impacts

WEEK 7: Group Lending: Evidence
T: 4. Group Lending

Spring Break Week (No Classes)

WEEK 8: Microsaving & Microinsurance & Gender
T: 6. Savings & Insurance
T: 7. Gender

WEEK 9: Commercialization and Regulation & Subsidy and Sustainability
T: 9. Subsidy and Sustainability
T: 10. Commercialization and Regulation

WEEK 10: EXAM II

WEEK 11: Linking Banks with Microfinance
Readings: TBA

WEEK 12: Financial Development and Growth I
Readings: TBA

WEEK 13: Financial Development and Growth II
Readings: TBA

WEEK 14: Financial Development and Growth III
Readings: TBA

WEEK 15: Exam Week

Final Exam Date - TBA
Course Grading

There will be three exams, pop quizzes, and a group presentation.
Exams: 2 x 20 + 1 x 30 (final) = 80 %
Pop quizzes (drop lowest grade): 10 %.
Group Presentation: 10 %

GRADE SCALE

A = (90 – 100)
B = (80 – 89)
C = (70 – 79)
D = (60 – 69)
F = (below 60)

HOMWORKS - This course involves analytical practice problems. These are assigned throughout the course. Solutions will be provided. Homeworks are thus, uncollected.

RESPONSE SHEETS - The two page briefs are in response to readings. The reading list will be announced one week before the due date. Sheets should be typewritten. More on the response sheets below in the syllabus.

CLASS PARTICIPATION - Since much of the class learning involves students, class participation is actively encouraged. Please ask questions and offer points of view and own valuable experience in the topics that interest you.

GROUP PRESENTATIONS- Each week a group in the class will lead the class discussion in the last section of class. This group should choose a topic that interests them. They may read extra material other than the class readings and will summarize the readings to the class in a presentation. The presentation will be on powerpoint and then will ask the class to go over the readings. The students will meet with the professor one week before the presentation so that the professor and the students can agree on the presentation material.

EXAMINATIONS - The examinations are more fact based and will test you on much of the text readings and more exercise driven part of the course.

POP QUIZZES - Throughout the course, pop quizzes will be given. They will test you on homework and/or class notes. The number is undetermined. The lowest pop quiz grade will be dropped.

OTHER POLICIES and ISSUES

LAPTOP USE DURING CLASS - The use of laptops is strictly prohibited during class time. Experience with previous classes has revealed that laptops are more of a distraction than an aid.

TARDINESS AND ABSENCES - Tardiness disrupts class learning and is extremely disruptive. Please try to be on time even when returning to class post breaks as well. Absences, on the other hand, are up to the student. As Masters students, you are mature enough to know that you should come to class. It is common courtesy, though, to inform the professor if you know you will be absent. It will be your responsibility to obtain notes on the missed material. It is also your responsibility to turn in your weekly response sheet even if you cannot make class.

RESPONSE SHEETS - You will write a short paper (no more than 2 pages length) in response to the additional non-text readings for that particular week. The response papers will follow this format: (1) a paragraph with an over-arching summary of the papers, (2) three –four paragraphs that cover the following: the interlinkage among this week’s reading and the readings and topics from other weeks, the contribution of the readings to our understanding of microfinance, your personal opinion on the readings
and (3) the bottom line that policy makers can learn from these readings, i.e. if you were a policymaker in microfinance, what would you take from this reading.

These papers are not collected, they are to stimulate discussion. These will not be collected but occasional checks will be made to make sure students complete them.

The purpose of the weekly response sheets are to encourage students to read and critically evaluate the required readings, facilitate in-class discussion of the readings, learn to summarize readings, provide a change of pace, and force students to become active members of the class.

**Academic Dishonesty**

The Aggie Honor Code is: "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.

A student may be academically dishonest in ways other than plagiarizing. These include: acquiring information not permitted by the instructor, providing information during an exam, and complementarity (if you submit a paper that was completed for another course). If the professor identifies academic dishonesty, then the issue will be forwarded to the Aggie Honors Council. Your responsibilities with regard to scholastic dishonesty are described in detail in various Texas A&M University policy statements on scholastic dishonesty. Scholastic dishonesty may result in failure on the examination, project, or course.

For additional information please visit: [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): Department of Economics

2. Course prefix, number and complete title of course: ECON 668: Decisions Under Risk and Uncertainty

3. Catalog course description (not to exceed 50 words):
The mean-variance and expected utility decision models; the use of risk models in asset valuation, financial decision-making, and economic analysis; portfolio choice, insurance demand, saving, investment and consumption decisions.

4. Prerequisite(s): ECON 607 or equivalent; enrolled in the Department of Economics' master's program or approval of director of the master's program.

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)

M.S. in Economics

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)

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Approval recommended by:

Timothy J. Groenberg 7/15/2013

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

Chair, College Review Committee 7/30/13

Dean of College 9/11/13

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

Chair, GC or CCC 7/30/13

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
MASTER OF SCIENCE IN ECONOMICS
WITH A CONCENTRATION IN FINANCIAL ECONOMICS OR ECONOMETRICS

ECON 668: Decisions Under Risk and Uncertainty
Spring 2014

Class Time: (Wednesday) 5:45 – 8:15 pm
Location: NCTM 122

Instructor: Dr. Jack Meyer
Allen 3073; 845-7382; jackmeyer@tamu.edu
Office Hours: TBA.
Also by appointment – email for an appointment

Class Website:

Description of Course

This course presents the mean-variance and expected utility decision models so that students learn to use these models to analyze various economic and financial decisions under risk. We discuss portfolio choices, insurance demand, saving, investment and consumption, and other financial decisions.

Learning Objectives

By the end of this course students will:
1. Be familiar with the underlying theory behind asset choice under uncertainty, including:
   a. The mean-variance model approach,
   b. The impact of Expected Utility and Risk Aversion on portfolio choice, Insurance demand, and Intertemporal consumption and saving decisions.

2. Have experience applying portfolio theory under uncertainty to
   a. A variety of real-life problems and applications, and
   b. Output and production, and the value of information.

Prerequisites: ECON 607 or equivalent; enrolled in the Department of Economics' master's program or approval of director of the master's program.

In addition to the textbook, I will make available to students a number of book chapters and journal articles that we are going to use in classroom discussion, including:


**Schedule:**

**TOPICS/SCHEDULE:**

**Week 1:** *Introduction* and First Class Day Discussion of Course Requirements and Content (1)

**Week 2 & 3:** *The Mean-Variance Decision Model* (6) Representing alternatives whose outcome is random Choosing among alternatives whose outcome is random

**Week 4, 5 & 6:** *The Expected Utility Decision Model* (12) Axioms of expected utility and finding your utility function Risk aversion: Absolute and Relative Increasing Risk and Stochastic Dominance Decreasing Absolute Risk Aversion (DARA)

**Week 7 & 8:** *The Portfolio Decision Model* (8) One risky and one riskless asset or activity Multiple risky assets or activities

*Spring Break – No Classes*

**Week 9, 10 & 11:** *The Insurance Demand Model* (8) Coinsurance and Deductible Insurance General Incenmination Functions Background Risk
Week 12 & 13:  *The Consumption, Investment and Saving Decision* (5)
   Two period models
   Multi-period models

Week 14:  *Other Financial and Economic Decisions* (5)
   Output and Production Decisions
   Information Acquisition

**Course Grading**

*Exams:* I give one in-class midterm exam and one final exam. The midterm will contribute 40%, and the final 60% toward the course grade. The final exam will cover all course material, but will emphasize the material discussed after the midterm exam.

Make-up exams will only be given for officially excused absences as outlined in Academic Rule 7 (http://student-rules.tamu.edu/rule07); absences must be documented in line with Rule 7. In addition, you must email me within 24 hours after the exam to alert me of the situation. These exams will be open book and open notes. A calculator that is not a communication device can be used. The questions will be similar to homework problems.

*Homework:* I hand out homework sheets each class. I also post the sheets on the web. I do not collect homework problems for grading and you are encouraged to work together when completing the assignments. We will discuss selected problems in class, including those any students wish to review. In order to perform well on the exams you must do the homework before looking at the posted answers.

**Grade Scale:**

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

**Academic Dishonesty**

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Note that evidence of group/joint effort on individual class assignments constitutes academic dishonesty and will result in a failing grade for the course. Your responsibilities with regard to scholastic dishonesty are described in detail in various Texas A&M University policy statements on scholastic dishonesty. Scholastic dishonesty may result in failure on the examination, project, or course.

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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): College of Engineering

2. Course prefix, number and complete title of course:
   ENGR 677 - Science, Technology, Engineering and Mathematics (STEM)
   Teaching Professional Development

3. Catalog course description (not to exceed 50 words):
   Center for Teaching Excellence (CTE) consultation and faculty mentoring in STEM teaching; course topic and
   syllabus design; learning outcomes and assessment; teaching methodology; reflection on teaching philosophy;
   reflection on teaching as research; must be taken on a satisfactory/unsatisfactory basis.

4. Graduate classification and approval of instructor

5. Prerequisite(s):
   GEOS 677 & SCEN 677

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

7. 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.

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)
      Any PhD student in College of Engineering

9. Approval recommended by:
   Scott Miller
   Department Head or Program Chair (Type Name & Sign) Date

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

   Submitted to Coordinating Board by:
   Associate Director, Curricular Services

   Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu
   Curricular Services – 3/10
Course title and number: ENGR 677 STEM Teaching Professional Development
Term: Spring 20XX
Meeting times and location: Specific Fridays listed in schedule, 3:00-5:00 p.m., Blocker 117

Course Description and Prerequisites
Description: Center for Teaching Excellence (CTE) consultation and faculty mentoring in STEM teaching; professional development in teaching; course topic and syllabus design; learning outcomes and assessment; teaching methodology; reflection on teaching philosophy; reflection on teaching as research
Prerequisites: Graduate classification and approval of instructor

Instructor Information
Name: Scott Miller
Telephone number: 979.862.3946
Email address: smiller@tamu.edu
Office Hours: By appointment
Office Location: Zachry 129

Name: Ra’sheedah Richardson
Telephone number: 979.845.0793
Email address: sheedah@tamu.edu
Office Hours: By appointment
Office Location: 109 Henderson

The format of the course will be interactive lecture as well as online, small group and large group discussion. Required readings will be posted in eCampus and the expectation is that they will be read prior to the class session. (see schedule)

Learning Outcomes
By the end of this class, students will be able to:

- Apply principles of integrated course design in the development of a course within your discipline (aligned learning outcomes, assessments and learning experiences/teaching methods)
- Apply classroom management strategies
- Develop a reflective and purposeful approach to teaching
- Develop a teaching philosophy statement
- Practice self-assessment and peer assessment of teaching

Grading
The course is graded as pass/fail. Student attendance and completion of learning experiences and course assignments will be evaluated as passing utilizing rubrics. Examples of the teaching philosophy, peer review and syllabus rubrics are included with this syllabus.

Pass: ≥ 75 points
Fail: < 75 points

Please see student rule 7 regarding attendance: [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07)
Learning Experiences and Assignments

Online Discussion Forum (10 pts)
The online discussion forum provides you with opportunities to draw broader connections with teaching and learning topics, such as relating these topics to your personal experience in the classroom and linking these topics with the larger body of research in teaching and learning. Engagement in ‘frequent’ and ‘quality’ discussion, characteristic of graduate level work, is encouraged.

Philosophy of Teaching Statement (15 pts - first draft; 15 pts - final draft)
Each of us has a unique approach to teaching and most academic positions will require that you can articulate why you use the approach that you do. Documenting your teaching philosophy is a highly reflective process regarding what teaching and learning mean to you.

Classroom Teaching (40 pts)
Each of you will have an opportunity to design a module or section of content for a specific course in your discipline. You will either teach the content to a class of undergraduates or to a group of your graduate peers in this course. Each of these teaching experiences will be peer reviewed.

You will choose your topic in collaboration with your faculty mentor in this course. The module will contain learning outcomes, an assessment, and a learning experience/teaching method capturing the interest of and challenging the students. The activity should include the following:
- A lesson plan that communicates the learning outcomes, organization and activities of your Session (10 pts);
- Handouts or a bibliography of resources that you found useful in designing your session (10 pts);
- Self-evaluation and reflection (It is preferred that supplementary materials such as results of feedback from the class and peer review forms be included with your self-evaluation and reflection.) (20 pts); and
- The self-evaluation and reflection, including supplementary materials, will be discussed with your faculty mentor and the CTE consultant as appropriate.

Syllabus for a Proposed Class in Your Discipline (20 pts)
You will compile a syllabus and a rationale for the course and statement of where the course fits into a larger program or degree. A short description of the situational factors (i.e., context, subject matter, student, instructor; Fink, 2005) should be included with the syllabus so the context is understood. The syllabus should contain learning outcomes, assessment methods and student experiences that will be incorporated into the course. Use the current TAMU required syllabus components. You will receive a rubric that outlines these requirements.

Create an open and safe classroom by doing your part. Please adhere to the following:

The Ten Components of a Thinking Environment
Time to Think by Nancy Kline

1. Attention: Listening with respect, interest and fascination.
2. Incisive Questions: Removing assumptions that limit ideas.
3. Equality: Treating each other as thinking peers.
   • Giving equal turns and attention.
   • Keeping agreements and boundaries
4. Appreciation: Practicing a five-to-one ratio of appreciation to criticism.
5. Ease: Offering freedom from rush or urgency.
6. Encouragement: Moving beyond competition.
7. Feelings: Allowing sufficient emotional release to restore thinking.
8. Information: Providing a full and accurate picture of reality.
9. Place: Creating a physical environment that says back to people, ‘You matter.’
10. Diversity: Adding quality because of the differences between us.
Course Development Cycle

Americans with Disabilities Act (ADA)

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

Academic Integrity

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

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

References

# CLASS SCHEDULE/TOPICS/ASSIGNMENT DUE DATES

(This schedule is subject to change)

**Note:** All Readings can be found online at ecampus.tamu.edu.

<table>
<thead>
<tr>
<th>DAY</th>
<th>TOPIC</th>
<th>ESSENTIAL QUESTIONS</th>
<th>ASSIGNMENTS and DUE DATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1: Friday, 1/25 3:00 – 5:00</td>
<td>Course Intro – What will the semester bring? Knowledge Survey Course Development Cycle Teaching Philosophy</td>
<td>Who are we as a cohort and how will that support our learning experience? What do I know about college teaching and student learning? How do we promote learning through informed course design?</td>
<td>Teaching Philosophy Statement Reading: Coppola 2002, Eierman 2008 Reading: Integrated Course Design, Fink 2005 Reading: Constructive Alignment, Biggs 2003</td>
</tr>
<tr>
<td>Week 2: Friday, 2/8 3:00 – 5:00</td>
<td>Situational Factors/Learning Outcomes Bloom's Taxonomy Classroom Management</td>
<td>Who are we teaching? What do we expect from them?</td>
<td><strong>DUE:</strong> First Draft Teaching Philosophy Statement Bring: Situational Factors for Course Design Reading: Bransford, Vye &amp; Bateman 2002</td>
</tr>
<tr>
<td>Week 3: Friday, 2/22 3:00 – 5:00</td>
<td>Intellectual Development of Scientists and Engineers</td>
<td>How does the intellectual development of undergraduate students effect how we teach?</td>
<td>Reading: Felder and Brent 2004 (!) <strong>DUE:</strong> Date for teaching session established and signed off by instructors</td>
</tr>
<tr>
<td>2/25 – 3/21 (Optional)</td>
<td>Individual Consultations with faculty and CTE</td>
<td>Where do I begin my design? Who will I be teaching?</td>
<td></td>
</tr>
<tr>
<td>2/25 – 3/21</td>
<td>Classroom Teaching Classroom Observation</td>
<td>How do I apply teaching and learning theory in the classroom?</td>
<td><strong>DUE one day prior to classroom teaching:</strong> Lesson Plan <strong>DUE one week following classroom teaching:</strong> Handouts and/or Bibliography of teaching resources; and Self Evaluation and Reflection</td>
</tr>
</tbody>
</table>
| Week 4:  
Friday, 3/22  
3:00 – 5:00 | Assessment and Rubrics  
Student Experiences/Teaching Methods | How do we know when the expectations have been met and how do we communicate that to students? How can we best utilize class time? | Reading: Felder and Brent 2004 II |
| --- | --- | --- | --- |
| Week 5:  
Friday, 4/5  
3:00 – 5:00 | Reflection and Feedback on our Teaching  
Teaching as Research  
Peer Review | How can we use reflection to integrate what we’ve learned and deepen our understanding of learning and good teaching? | Reading: Brookfield 2006  
CIRTL: Teaching as Research  
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Friday, 4/19  
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Final Peer Review – Key learning experiences  
Special Topics | How does the type of class influence how we teach? How do we create an environment that is welcoming for all learners? | DUE: Draft of Syllabus |
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):  
   College of Geosciences

2. Course prefix, number and complete title of course:  
   GEOS 677- STEM Teaching Professional Development

3. Catalog course description (not to exceed 50 words):  
   Center for Teaching Excellence (CTE) consultation and faculty mentoring in STEM teaching; professional development in teaching; course topic and syllabus design; learning outcomes and assessment; teaching methodology, reflection on teaching philosophy; reflection on teaching as research

4. Graduate classification and approval of instructor
   
   Cross-listed with:  
   ENGR  
   ScEN  
   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:  
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      N/A
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)
      Any PhD student in the College of Geosciences

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)  
   GEOS 677 STEM - Teaching Professional Development

<table>
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<th>Lect.</th>
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<th>Admin. Unit</th>
<th>Acad. Year</th>
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<td>3</td>
<td>90102</td>
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</tbody>
</table>

Approval recommended by:  

Department Head or Program Chair (Type Name & Sign)  Date: 8/21/13

Chair, Graduate Studies  Date: 8/15/13

Department Head or Program Chair (Type Name & Sign)  Date: 9/11/13

Chair, GRS CEC  Date: — Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra.williams@tamu.edu.
Curricular Services – 3/10
Course title and number: GEOS 677 STEM Teaching Professional Development
Term: Spring 20XX
Meeting times and location: Specific Fridays listed in schedule, 3:00-5:00 p.m., Blocker 117

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Instructor Information
Name: Sarah Bednarz
Telephone number: 979.845.3651
Email address: s-bednarz@tamu.edu
Office Hours: By appointment
Office Location: 202 O&M Bldg

Name: Ra’sheedah Richardson
Telephone number: 979.845.0793
Email address: sheedah@tamu.edu
Office Hours: By appointment
Office Location: 109 Henderson

The format of the course will be interactive lecture as well as online, small group and large group discussion. Required readings will be posted in eCampus and the expectation is that they will be read prior to the class session. (see schedule)

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Pass: ≥ 75 points   Fail: < 75 points

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Create an open and safe classroom by doing your part. Please adhere to the following:

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Knowledge Survey  
Course Development Cycle  
Teaching Philosophy | Who are we as a cohort and how will that support our learning experience?  
What do I know about college teaching and student learning?  
How do we promote learning through informed course design? | Teaching Philosophy Statement  
**Reading:** Coppola 2002, Eierman 2008  
**Reading:** Integrated Course Design, Fink 2005  
**Reading:** Constructive Alignment, Biggs 2003 |
| **Week 2:**  
Friday, 2/8  
3:00 – 5:00 | Situational Factors/Learning Outcomes  
Bloom's Taxonomy  
Classroom Management | Who are we teaching?  
What do we expect from them? | **DUE:** First Draft Teaching Philosophy Statement  
Bring: Situational Factors for Course Design  
**Reading:** Bransford, Vye & Bateman 2002 |
| **Week 3:**  
Friday, 2/22  
3:00 – 5:00 | Intellectual Development of Scientists and Engineers | How does the intellectual development of undergraduate students affect how we teach? | **Reading:** Felder and Brent 2004 (I)  
**DUE:** Date for teaching session established and signed off by instructors |
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(Optional) | Individual Consultations with faculty and CTE | Where do I begin my design? Who will I be teaching? |  |
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Final Peer Review – Key learning experiences  
Special Topics | How does the type of class influence how we teach?  
How do we create an environment that is welcoming for all learners? | **DUE:** Draft of Syllabus |
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 Horticultural Sciences

2. Course prefix, number and complete title of course:
   HORT 619, Plant-Associated Microorganisms

3. Catalog course description (not to exceed 50 words):
   Basic concepts and current topics in plant-microbe interactions including the diversity of plant-associated microorganisms; the plant as a microbial environment; endophytes; microbial roles in plant nutrition and fitness; uses of microorganisms for improved plant health and sustainable agriculture; microbial roles in food safety and future challenges; discussion of current literature.

4. Prerequisite(s):
   Basic plant biology or plant ecology is recommended; microbiology is helpful, but not required.
   Cross-listed with: PLPA 619 and MEPS 619
   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)

All majors in the college of Agriculture and Life Sciences
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. Prereq. Course Title Life excluding pronunciation
   HORT 619 PLANT-ASSOCIATED MICROBE
   Lect. Date SCH CRP and Fund Code Admin Unit Acad Year HCC Code
   0 3 0 0 0 3 0 1 1 0 5 0 0 5 1 5 2 0 1 4 1 5 0 0 3 6 3 2

Approval recommended by:
Michael A. Arnold (Assoc. Head) 5/15/13

Department Head or Program Chair (Type Name & Sign) Date
Chair, College Review Committee 6/19/13
Dean of College 9/11/13

Submitted to Coordinating Board by:
Associate Director, Curricular Services

Questions regarding this form should be directed to Sandra Williams at 845 8201 or sandra.williams@tamu.edu.
Curricular Services – 3/10
Syllabus
HORT619 - MEPS619 – PLPA619
Plant-Associated Microorganisms
Spring 2015

Instructor: Elizabeth (Betsy) Pierson, Ph.D.
Office: Room 427 HFSB
Office Phone: 862-1307
Email: EAPierson@tamu.edu
Office hours: By appointment
Class Time: 11:30-12:30 MWF
Class location: HFSB 101

Catalog description (50 words):
Basic concepts and current topics in plant-microbe interactions including the diversity of plant-associated microorganisms; the plant as a microbial environment; endophytes; microbial roles in plant nutrition and fitness; uses of microorganisms for improving plant health and sustainable agriculture; roles in food safety and future challenges; discussion and critique of literature.

Course Description:
HORT/MEPS/PLPA 619 Plant-Associated Microorganisms is a 3-credit lecture course.

Plant health is the net result of complex interactions between the plant and its environment. Essential components of this environment are the microorganisms living on and inside plants. Plant-beneficial microbes contribute to plant nutrition, affect plant herbivory, promote plant growth, and suppress plant disease. Detrimental microbes create food safety and plant disease problems. Understanding and manipulating plant-associated microbes represent key ecological control points for improving plant fitness.

We will explore basic concepts and current topics through lectures, assigned readings, classroom discussion, and presentations. We will cover the diversity of microorganisms associated with plants, the ecology of the plant phyllosphere and rhizosphere, the cryptic world of plant endophytes, the uses of plant-beneficial microorganisms for improving plant health, and the nature of deleterious plant-associated microbes. We will discuss issues as they relate to: sustainable agriculture, the development of commercial products aimed at improving plant fitness, and food safety. Students are expected to actively participate in the discussions, and find, present, and critique recent literature in the field of plant-microbe interactions.

Prerequisites
An undergraduate class in basic plant biology or plant ecology is recommended. A previous course in microbiology is helpful, but not required.

Learning Outcomes or Course Objectives
The goals of this course are to:
- Foster an understanding of the diversity microorganisms associated with plants and the types of interactions between plants and microbes that promote plant health
- Foster an understanding of the plant as a microbial environment.
- Foster critical thinking and an ability to read, discuss, and write about ideas presented in the published literature
- Introduce students to commercial/agricultural products and applications utilizing plant-associated microbes or directed toward manipulating plant-microbe interactions
- Broaden the students' perspective on how plant-associated microbes contribute to the ecology, physiology, biochemistry and genetics of plants.
- Broaden the students' perspective on how understanding po

Textbook and resource materials
There is no textbook associated with the class. Resource materials include lecture notes and assigned readings.

Grading Policy*

<table>
<thead>
<tr>
<th>Course Component</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Participation</td>
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<tr>
<td>Assignments</td>
<td>10%</td>
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<td>Midterm</td>
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<tr>
<td>Presentation</td>
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<tr>
<td>Final Paper</td>
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<tr>
<td>Final Exam</td>
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Grading Scale*

<table>
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<th>Course Letter Grade</th>
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<td>60-69</td>
<td>D</td>
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<tr>
<td>0-59</td>
<td>F</td>
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</table>

* I reserve the right to modify grading policy or scale, as needed.

Additional Grading Policy:
Participation credit: In order to receive participation credit you need to be present for all sessions and participate in all class discussions (unless you have a University excused absence— see below). If you miss a class session, and have an approved excuse, please contact me within 24 hours via email or give me advanced notice.

Assignments: During the course, you will be asked to submit literature reviews or some other form of written assignment. I will describe each assignment and provide the due date at the time I make the assignment. For literature reviews you should assess (in one paragraph each) the background and objectives, methods and results, discussion and significant findings, and your opinion of the paper. The assignments are due typically at the start of class on Fridays.

Final Paper: The final paper will be an essay aimed at assessment of the graduate student’s capacity to review literature and addresses the issues related to understanding and manipulating microbial communities to promote plant health. The final paper should focuses on a specific plant-microbe interaction where increased understanding might result in agricultural gains. The paper is required to have three sections: one that describes current knowledge related to the chosen topic (including the biology of the interaction, current applications and their limitations and the desired agricultural gains), a second that describes specific area(s) of research that may lead to the desired agricultural gains (including a description of the specific objectives, treatments and controls, experimental design, response variables, replication and analysis, expected results, and deliverables), and a third section that discusses broader impacts and future studies.
Presentation: Students are required to give a 20 minute presentation to the class covering the three sections of their paper, and defend their research in a 10 minute exchange with class members. Students are graded not only on their prepared oral presentation, but on their ability to defend their ideas during questioning. They also are graded on their ability to critique and discuss other students’ presentations and defenses.

Exams: Exams will consist of brief definitions, short answers, problem solving, and short discussion/opinion questions.

*I absolutely do not tolerate plagiarism. Please make sure you understand what plagiarism is.*

<table>
<thead>
<tr>
<th>Lecture Period</th>
<th>Topics/Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1: Lecture 1</td>
<td>Course Overview &amp; Types of Plant-Associated Microbes: Well-studied Eukaryotes</td>
</tr>
<tr>
<td>Week 1: Lecture 2</td>
<td>Types of Plant-Associated Microbes: Well-studied Eukaryotic and Prokaryotic groups continued</td>
</tr>
<tr>
<td>Week 1:</td>
<td>Class activity</td>
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<td>Week 2: Lecture 3</td>
<td>Quorum Sensing</td>
</tr>
<tr>
<td>Week 2:</td>
<td>Literature discussion/class activity</td>
</tr>
<tr>
<td>Week 3: Lecture 4</td>
<td>Phylosphere ecology: definition, physical characteristics, diversity of microorganisms</td>
</tr>
<tr>
<td>Week 3: Lecture 5</td>
<td>Rhizosphere Ecology: definition, physical characteristics, diversity of microorganisms</td>
</tr>
<tr>
<td>Week 3: Lecture 6</td>
<td>Special Lecture: Biofilms</td>
</tr>
<tr>
<td>Week 4: Lecture 7</td>
<td>Endophytic environment</td>
</tr>
<tr>
<td>Week 4: Lecture 8</td>
<td>Endophytes: Diversity of culturable microbes, fungal endophytes, alkaloid production and herbivory</td>
</tr>
<tr>
<td>Week 4:</td>
<td>Literature discussion/class activity</td>
</tr>
<tr>
<td>Week 5: Lecture 9</td>
<td>Biological Nitrogen Fixers: Importance, diversity and distribution (symbiotic vs. associative N-fixers), nitrogen fixation (biochemistry and genetics)</td>
</tr>
<tr>
<td>Week 5: Lecture 10</td>
<td>Nitrogen Fixers: components of the interaction (nodulation and fixation) occurrence of rare but complex symbiotics, commercial products</td>
</tr>
<tr>
<td>Week 5: Lecture 11</td>
<td>Special Lecture: Rhizobium-Legume Symbioses</td>
</tr>
<tr>
<td>Week 6: Lecture 12</td>
<td>Mycorrhizae, importance in phosphate nutrition, diversity and distribution (ecto vs. endo mycorrhizae)</td>
</tr>
<tr>
<td>Week 6: Lecture 13</td>
<td>Mycorrhizae: arbuscule formation (structure and signals), commercial products</td>
</tr>
<tr>
<td>Week 6: Lecture 14</td>
<td>Special Lecture: comparison of Mycorrhizal and Rhizobial Symbioses</td>
</tr>
<tr>
<td>Week 7:</td>
<td>Review</td>
</tr>
<tr>
<td>Week 7:</td>
<td>Midterm exam</td>
</tr>
<tr>
<td>Week 7: Lecture 15</td>
<td>Biological Control 1: Principles of Biological Control: definition, history, discovery of disease suppressive soils and promise of biological control, goals and role in sustainable agriculture</td>
</tr>
<tr>
<td>Week 8:</td>
<td>Class activity (discuss exam and student project)</td>
</tr>
<tr>
<td>Week 8: Lecture 16</td>
<td>Biological Control 2: Antagonism, Competition, Predation/Parasitism</td>
</tr>
<tr>
<td>Week 8: Lecture 17</td>
<td>Biological Control 3: Induced resistance, Hypovirulence, Cross Protection</td>
</tr>
<tr>
<td>Week 8:</td>
<td>Literature discussion/class activity</td>
</tr>
<tr>
<td>Week 9</td>
<td>Spring Break!!!! Have fun. Be safe.</td>
</tr>
<tr>
<td>Week 10: Lecture 18</td>
<td>Ramping up plant defenses, commercial applications</td>
</tr>
<tr>
<td>Week 10: Lecture 19</td>
<td>Commercialization/Integration of Biological Control: strategy to identify effective biological controls, formulation, production, registration</td>
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<tr>
<td>Week 10:</td>
<td>Literature discussion/class activity</td>
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<tr>
<td>Week 11: Lecture 20</td>
<td>The Use of Manure, Compost, Compost Extracts and Teas; Biofumigation and Green Manuring, Solarization and Mulching: benefits/detrimentsto plant nutrition, roles in disease suppression</td>
</tr>
<tr>
<td>Week 11: Lecture 21</td>
<td>Alternative controls that affect microbial populations</td>
</tr>
<tr>
<td>Week 11:</td>
<td>Literature discussion/class activity</td>
</tr>
<tr>
<td>Week 12: Lecture 22</td>
<td>Genetically Modified Organisms</td>
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<tr>
<td>Week 12: Lecture 23</td>
<td>Productions Systems</td>
</tr>
<tr>
<td>Week 12:</td>
<td>Group Discussion: GMOs and Organic Agriculture</td>
</tr>
<tr>
<td>Week 13: Lecture 24</td>
<td>Food Safety: diversity of deleterious microbes, ecology and epidemiology of deleterious microbes on plants, GAPs</td>
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<tr>
<td>Week 13: Lecture 25</td>
<td>Probiotics</td>
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<tr>
<td>Week 13: Lecture 26</td>
<td>Grand Challenges in Agriculture</td>
</tr>
<tr>
<td>Week 14:</td>
<td>Presentations on student paper</td>
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<tr>
<td>Week 14:</td>
<td>Presentations on student paper</td>
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<tr>
<td>Week 14:</td>
<td>Presentations on student paper</td>
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<tr>
<td>Week 15:</td>
<td>Presentations on student paper; FINAL PAPER DUE</td>
</tr>
<tr>
<td>Week 15:</td>
<td>Review for Final</td>
</tr>
<tr>
<td>Week 15:</td>
<td>Final exam (not comprehensive)</td>
</tr>
</tbody>
</table>

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

**Class Attendance:** Students are expected to attend class unless satisfactory evidence is presented to substantiate the reason for absence [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07).
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): Molecular and Environmental Plant Sciences

2. Course prefix, number, and complete title of course: MEPS, 619, Plant-Associated Microorganisms

3. Catalog course description (not to exceed 50 words):
   Basic concepts and current topics in plant-microbe interactions including the diversity of plant-associated microorganisms; the plant as a microbial environment; endophytes; microbial roles in plant nutrition and fitness; uses of microorganisms for improved plant health and sustainable agriculture; microbial roles in food safety and future challenges; discussion of current literature.

4. Prerequisite(s):
   Basic: plant biology or plant ecology is recommended; microbiology is helpful, but not required.

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)

All majors in the college of Agriculture and Life Sciences

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

9. Prefix Course Title (excluding punctuation)

<table>
<thead>
<tr>
<th>MEPS</th>
<th>619</th>
<th>PLANT-ASSOCIATED MICROBES</th>
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<tbody>
<tr>
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<tr>
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<td>6</td>
<td>2</td>
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</tbody>
</table>

Approval recommended by:

[Signature] [Date 5/15/13]

Chair, College Review Committee
[Signature] [Date 9/13/13]

Dean of College
[Signature] [Date 9/13/13]

Submitted to Coordinating Board by:

[Signature] [Date 5/15/13]

Associate Director, Curricular Services
[Signature] [Date 5/15/13]

Questions regarding this form should be directed to Sandra Williams at 845-8301 or sandra.williams@tamu.edu.
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: PLPA 619 Plant-Associated Microorganisms

3. Course description (not more than 50 words): Basic concepts and current topics in plant-microbe interactions including the diversity of plant-associated microorganisms; the plant as a microbial environment; endophytes; microbial roles in plant nutrition and fitness; uses of microorganisms for improved plant health and sustainable agriculture; microbial roles in food safety and future challenges; discussion of current literature.

4. Prerequisite(s) Cross-listed with

Basic Plant biology or plant ecology is recommended. Microbiology is helpful but not required.

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.

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 Majors in the College of Agriculture and Life Sciences

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

10. Prefix Course # Title (excluding punctuation)
    PLPA 619 PLANT-ASSOCIATED MICROBES

    Lect. Lab SCH Subject Matter Content Code Admin. Unit Acad. Year FICE Code
    0 3 0 0 3 0 1 1 1 0 5 0 0 5 1 5 2 0 1 4 - 15 0 0 3 6 3 2

    Level 6

Approval recommended by:

Head of Department: Charles M. Kamphues 13 May 2013

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

Submitted to Coordinating Board by:

Director of Academic Support Services: Date

Questions regarding this form should be directed to Sanden Williams at 815-893-6072.

OAR/AS 04/07
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): College of Science

2. Course prefix, number and complete title of course: SCEN 677-STEM Teaching Professional Development

3. Catalog course description (not to exceed 50 words):
Center for Teaching Excellence (CTE) consultation and faculty mentoring in STEM teaching; course topic and syllabus design; learning outcomes and assessment; teaching methodology; reflection on teaching philosophy; reflection on teaching as research

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

Cross-listed with: GEOS 677 & ENGR 677

Stacked with:

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

5. Is this a variable credit course? ☑ No

If yes, from _____ to _____

6. Is this a repeatable course? ☑ No

If yes, this course may be taken _____ times.

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

7. This course will be:

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

N/A

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

Any PhD student in College of Science

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

9. Prefix Course # Title (excluding punctuation)

<table>
<thead>
<tr>
<th>SCEN</th>
<th>677</th>
<th>STEM-TEACHING PROF DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lect.</td>
<td>Lab</td>
<td>SCH</td>
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<td>1</td>
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</tbody>
</table>

Approval recommended by:

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

Chair, College Review Committee Date

Dean of College Date

Chair, CEC 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
Course title and number: SCEN 677 STEM Teaching Professional Development
Term: Spring 20XX
Meeting times and location: Specific Fridays listed in schedule, 3:00-5:00 p.m., Blocker 117

Course Description and Prerequisites
Description: Center for Teaching Excellence (CTE) consultation and faculty mentoring in STEM teaching; professional development in teaching; course topic and syllabus design; learning outcomes and assessment; teaching methodology; reflection on teaching philosophy; reflection on teaching as research
Prerequisites: Graduate classification and approval of instructor

Instructor Information
Name: Mark J. Zoran
Telephone number: 979.458.8001
Email address: zoran@science.tamu.edu
Office hours: By Appointment
Office location: 514 Blocker
Name: Ra'sheedah Richardson
Telephone number: 979.845.0793
Email address: sheedah@tamu.edu
Office hours: By Appointment
Office location: 109 Henderson

The format of the course will be interactive lecture as well as online, small group and large group discussion. Required readings will be posted in elearning and the expectation is that they will be read prior to the class session. (see schedule)

Learning Outcomes
By the end of this class, students will be able to:

• Apply principles of integrated course design in the development of a course within your discipline (aligned learning outcomes, assessments and learning experiences/teaching methods)
• Develop a reflective and purposeful approach to teaching
• Develop a teaching philosophy statement
• Practice self-assessment and peer assessment of teaching

Grading Policies
Course is graded as pass/fail. Student attendance and completion of learning experiences and course assignments will be evaluated as passing utilizing rubrics. Examples of the teaching philosophy, peer review and syllabus rubrics are included with this syllabus.

Pass > or = 75 points; Fail < 75 points

Learning Experiences and Assignments

Online Discussion Forum (10 pts)
The online discussion forum provides you with opportunities to draw broader connections with teaching and learning topics, such as relating these topics to your personal experience in the classroom and linking these topics with the larger body of research in teaching and learning. Engagement in "frequent" and "quality" discussion, characteristic of graduate level work, is encouraged.
Philosophy of Teaching Statement (15 pts – first draft; 15 pts – final draft)
Each of us has a unique approach to teaching and most academic positions will require that you can articulate why you use the approach that you do. Documenting your teaching philosophy is a highly reflective process regarding what teaching and learning mean to you.

Classroom Teaching (40 pts)
Each of you will have an opportunity to design a module or section of content for a specific course in your discipline. You will either teach the content to a class of undergraduates or to a group of your graduate peers in this course. Each of these teaching experiences will be peer reviewed.

- You will choose your topic in collaboration with your faculty mentor in this course. The module will contain learning outcomes, an assessment, and a learning experience/teaching method capturing the interest of and challenging the students. The activity should include the following:
  - A lesson plan that communicates the learning outcomes, organization and activities of your session (10 pts)
  - Handouts or a bibliography of resources that you found useful in designing your session (10 pts)
  - Self-evaluation and reflection (It is preferred that supplementary materials such as results of feedback from the class and peer review forms be included with your self-evaluation and reflection.) (20 pts)
  - The self-evaluation and reflection, including supplementary materials, will be discussed with your faculty mentor and the CTE consultant as appropriate.

Syllabus for a Proposed Class in Your Discipline (20 pts)
You will compile a syllabus and a rationale for the course and statement of where the course fits into a larger program or degree. A short description of the situational factors (i.e., context, subject matter, student, instructor; Fink, 2005) should be included with the syllabus so the context is understood. The syllabus should contain learning outcomes, assessment methods and student experiences that will be incorporated into the course. Use the current TAMU required syllabus components. You will receive a rubric that outlines these requirements.

Create an open and safe classroom by doing your part. Please adhere to the following:

The Ten Components of a Thinking Environment
*Time to Think by Nancy Kline*

1. Attention: Listening with respect, interest and fascination.
2. Incisive Questions: Removing assumptions that limit ideas.
3. Equality: Treating each other as thinking peers.
   - Giving equal turns and attention.
   - Keeping agreements and boundaries
4. Appreciation: Practicing a five-to-one ratio of appreciation to criticism.
5. Ease: Offering freedom from rush or urgency.
6. Encouragement: Moving beyond competition.
7. Feelings: Allowing sufficient emotional release to restore thinking.
8. Information: Providing a full and accurate picture of reality.
9. Place: Creating a physical environment that says back to people, ‘You matter.’
10. Diversity: Adding quality because of the differences between us.
CLASS SCHEDULE/TOPICS/ASSIGNMENT DUE DATES

(This schedule is subject to change)

Note: All Readings can be found online at the TAMU elearning site.

<table>
<thead>
<tr>
<th>DAY</th>
<th>TOPIC</th>
<th>ESSENTIAL QUESTIONS</th>
<th>ASSIGNMENTS and DUE DATES</th>
</tr>
</thead>
</table>
| Week 1:     | Course Intro – What will the semester bring? Knowledge Survey Course Development Cycle Teaching Philosophy | Who are we as a cohort and how will that support our learning experience? What do I know about college teaching and student learning? How do we promote learning through informed course design? | Teaching Philosophy Statement
Reading: Coppola 2002, Eierman 2008
Reading: Integrated Course Design, Fink 2005
Reading: Constructive Alignment, Biggs 2003 |
| Friday, 1/25| 3:00 – 5:00                                |                                                                                     |                                                                                           |
| Week 2:     | Situational Factors/Learning Outcomes Blooms Taxonomy |                                                                                     | DUE: First Draft Teaching Philosophy Statement
Bring: Situational Factors for Course Design
Reading: Bransford, Vye & Bateman 2002 |
<p>| Friday, 2/8 | 3:00 – 5:00                                |                                                                                     |                                                                                           |
| Week 3:     | Intellectual Development of Scientists and Engineers |                                                                                     | Reading: Felder and Brent 2004 (I)                                                       |
| Friday, 2/22| 3:00 – 5:00                                |                                                                                     | DUE: Date for teaching session established and signed off by instructor                  |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Activity</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/25–3/21</td>
<td>Individual Consultations with faculty and CTE</td>
<td>Where do I begin my design? Who will I be teaching?</td>
<td><strong>DUE: one day prior to classroom teaching:</strong> Lesson Plan</td>
</tr>
<tr>
<td>(Optional)</td>
<td>Classroom Teaching</td>
<td>How do I apply teaching and learning theory in the classroom?</td>
<td><strong>DUE: one week following classroom teaching:</strong> Handouts and/or Bibliography of teaching resources; and Self Evaluation and Reflection</td>
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<td></td>
<td>Classroom Observation</td>
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<tr>
<td>Week 4:</td>
<td>Assessment and Rubrics</td>
<td>How do we know when the expectations have been met and how do we communicate that to students?</td>
<td><strong>Reading:</strong> Felder and Brent 2004 (II)</td>
</tr>
<tr>
<td>Friday, 3/22</td>
<td>Student Experiences/Teaching Methods</td>
<td>How can we best utilize class time?</td>
<td></td>
</tr>
<tr>
<td>3:00 – 5:00</td>
<td>Reflection and Feedback on our Teaching</td>
<td>How can we use reflection to integrate what we've learned and deepen our understanding of learning and good teaching?</td>
<td><strong>Reading:</strong> Brookfield 1995 CIRTL Reading <strong>DUE: Final Draft of Teaching Philosophy Statement</strong></td>
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<td>Teaching as Research</td>
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<td></td>
<td>Peer Review</td>
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<tr>
<td>Week 5:</td>
<td>Syllabus Development</td>
<td>How does the type of class influence how we teach?</td>
<td><strong>DUE: Draft of Syllabus</strong></td>
</tr>
<tr>
<td>Friday, 4/5</td>
<td>Final Peer Review- Key learning experiences</td>
<td>How do we create an environment that is welcoming for all learners?</td>
<td></td>
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<tr>
<td>3:00 – 5:00</td>
<td>Special Topics</td>
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</table>

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References


