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): Computer Science and Engineering  
   CSCE 657 - High Performance Computing for Earth Science and Petroleum Engineering

2. Course prefix, number and complete title of course:  
   Cross-listed with: PETE 657  
   Stacked with:  

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

3. Catalog course description (not to exceed 50 words): Numerical simulation of problems in Earth Sciences and Petroleum Engineering using high performance computing (HPC), development of a parallel reservoir simulator

4. Prerequisite(s):  
   Graduate classification

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., M.E., Ph.D. in Computer Science or 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)  
--- | --- | ---  
CSCE | 657 | HPC & EARTH SCIENCE & PETE

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Approval recommended by:  
D. W. Walker  
Department Head or Program Chair (Type Name & Sign)  
Date  
4/1/2013

Chair, College Review Committee  
Date  
5-9-13

Dean of College  
Date  
6-18-13

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  CSCE 657: High Performance Computing for Earth Science and Petroleum Engineering
Term (e.g., Fall 200X)  Fall 2013
Meeting times and location  Mondays, 11:30am-2:40pm, RICH 912B

Course Description and Prerequisites
Covers numerical simulation of problems in Earth Sciences and Petroleum Engineering using high performance computing (HPC). Students are expected to develop a parallel reservoir simulator as part of this course.
Graduate classification. Attendance will be limited to a maximum of 15 students.

Learning Outcomes or Course Objectives
The objectives of the course are for students to:
1. Develop an in-depth understanding of current approaches to building and simulating complex models of flow in porous media and Earth sciences using high performance computing.
2. Bridge the gap between reservoir modeling and simulation, high performance computing and parallel implementations, having a solid theoretical background in parallel architectures (software and hardware) and practical solutions to real world large-scale problems faced by scientist and petroleum engineers.

Instructor Information
Name  Dr. Eduardo Gildin, Dr. Vivek Sarin and Dr. George Moridis
Telephone number  (979) 862-4578
Email address  eduardo.gildin@pe.tamu.edu
Office hours  TBD
Office location  401J Richardson Building

Textbook and/or Resource Material
The main source of material for the course will be a series of notes and slides handed out to the students. Complementary textbooks are:
Introduction to Parallel Computing, 2nd ed., by A. Grama, A. Gupta, G. Karypis, and V. Kumar, Addison-Wesley
Numerical Analysis, Burden and Faires, 2005
Matrix Computations, Golub and Van Loan, 1996
Understanding and Implementing the Finite Element Method by Mark S. Gockenbach, SIAM, 2006.
Theory and Practice of Finite Elements by Alexandre Ern and Jean-Luc Guermond, Springer, 2004
Finite Volume Methods for Hyperbolic Problems, Randall LeVeque, 2004
Petroleum Reservoir Simulation, by Khalid Aziz and A. Settari, 1979
Grading Policies

Homework ................................................................. (50%)
Final Project Presentation ........................................ (15%)
Final Project Report .................................................. (35%)
Total ................................................................. (100%)

Grading Scale

A ............................................................................ 90-100%
B ............................................................................ 80-89%
C ............................................................................ 70-79%
D ............................................................................ 60-69%
F ............................................................................ 0-59%

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
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<tr>
<th>WEEK</th>
<th>TOPICS</th>
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<tbody>
<tr>
<td>1</td>
<td>Intro to Reservoir Simulation - Gildin</td>
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<tr>
<td>2</td>
<td>Intro to numerical computing (linear solvers, numerical linear algebra, etc) - Gildin</td>
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<tr>
<td>3</td>
<td>The need for parallel computing in reservoir simulation - Industry perspective</td>
</tr>
<tr>
<td>4</td>
<td>Introduction to Final Project (Reservoir Simulation) - Moridis</td>
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<tr>
<td>5</td>
<td>Parallel computing technology - Sarin</td>
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<tr>
<td>6</td>
<td>Algorithms – Sarin</td>
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<tr>
<td>7</td>
<td>Programming - Sarin</td>
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<tr>
<td>8</td>
<td>Programming - Sarin</td>
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<tr>
<td>9</td>
<td>Numerical algorithms – Sarin</td>
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<tr>
<td>10</td>
<td>Numerical algorithms – Sarin</td>
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<tr>
<td>11</td>
<td>Numerical algorithms – Sarin</td>
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<tr>
<td>12</td>
<td>Large-Scale Optimization</td>
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<tr>
<td>13</td>
<td>Tutorial on Parallel Eclipse/Intersect or any other Commercial software – Gildin - Hands-on session (lecture by Schlumberger)</td>
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<tr>
<td>14</td>
<td>Reservoir Simulation Code - Parallelization</td>
</tr>
<tr>
<td>15</td>
<td>Final project assignment</td>
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</tbody>
</table>

Other Pertinent Course Information

Since general reservoir simulation concepts will be discussed with no emphasis on specific areas, all engineering and computer science majors are welcome to attend the class. Also, mathematics and applied mathematics students are well suited to attend this course, although there will be no specific emphasis on the numerical algorithms and theorems proofs. Students are expected to know the following: Basic Reservoir Simulation or equivalent class; Linear Algebra and Matrix Computations of equivalent class; Advanced Calculus or equivalent class; Programming experience. Matlab, Fortran, C, C++.

Students may refer to Students Rule 07 for attendance policies: http://student-rules.tamu.edu/rule07
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://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): Texas A&M Institute for Neuroscience

2. Course prefix, number and complete title of course: NRSC 633, Neuropsychopharmacology

3. Catalog course description (not to exceed 50 words):
Interaction of drugs and toxins with neurotransmitter systems with primary emphasis on mechanisms involving receptor function that impacts central nervous system integration.

4. Prerequisite(s):

Cross-listed with:

Stacked with:

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

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

6. Is this a repeatable course? ☑ No
Will this course be repeated within the same semester? ☑ 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)

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: NRSC 633
Title (excluding punctuation): NEUROPSYCHOPHARMACOLOGY

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<th>Acad. Year</th>
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Approval recommended by:

Dr. Jane Welsh
Department Head or Program Chair (Type Name & Sign) Date

Chair, College Review Committee Date 5-13-13

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

Dean of College Date 6-18-13

Chair, GC or UCC 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
NRSC 633 NEUROPSYCHOPHARMACOLOGY

FALL 2013: Credit hours: 4

Prereqs: Permission of coordinator required

TUESDAYS: 2:00 PM-4:00 PM and THURSDAYS: 2:00 PM-4:00 PM, ILSB TBA

The class will offer students a comprehensive overview of current neuropharmacological concepts, neurotransmitter systems and their receptors, and neurotoxins used to characterize different receptor classes. Students will present research papers and lead a discussion on selected topics. In the second half neurological diseases and pharmacological intervention strategies will be discussed and the students will have an opportunity to research their favorite neurological disease and present their findings to the class in form of a lecture under the supervision of a skilled facilitator.

Grading: Exams: 60%; Student lecture presentation: 20%; two Class journal club (JC) presentations 10%; Summaries of JCs and summaries of lectures: 10%.

90% - 100% of 500 points = A
80% - 89% of 500 points = B
70% - 79% of 500 points = C
60% - 69% of 500 points = D
59% and below of 500 points = F

Course coordinator: Ursula Winzer-Serhan, Ph.D., Associate Professor, 979-436-0330, uwserhan@tamhsc.edu

Instructors: Gerald Frye, Ph.D., Professor, 979-436-0326, gdfrye@tamhsc.edu
William Griffith, Ph.D., Professor, (979) 436-0315, griffith@tamhsc.edu
David Murchison, Ph.D., Assistant Professor, DMurchison@tamhsc.edu
Samba Reddy, Ph.D., Associate Professor, 436-0324, reddy@tamhsc.edu
Gregg Wells Ph.D., Associate Professor, 979-458-8888, 204 RMB, gbwells@tamhsc.edu
Dustin DuBois Ph.D., Assistant Professor, dubois@tamhsc.edu

<table>
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<tr>
<th>Date</th>
<th>Topic</th>
<th>Instructor</th>
<th>Room (RMB)</th>
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<tr>
<td>08/27/13</td>
<td>Class Introduction</td>
<td>Winzer-Serhan</td>
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<tr>
<td>08/29/13</td>
<td>General principals of Pharmacology and pharmacokinetics and drug metabolism I. (lecture)</td>
<td>DuBois</td>
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<td>09/03/13</td>
<td>General principals of Pharmacology and pharmacokinetics and drug metabolism II. (lecture)</td>
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<td>09/05/13</td>
<td>Drug/receptor interaction, allosteric modification, Drug development. (lecture)</td>
<td>Reddy</td>
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<td>09/10/13</td>
<td>Excitatory neurotransmitters: Glutamate I. (lecture)</td>
<td>Reddy</td>
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<td>09/12/13</td>
<td>Excitatory neurotransmitters: Glutamate II. (lecture) (student JC presentations)</td>
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<tr>
<td>09/17/13 T</td>
<td>Pharmacology of Voltage gated Ion channels: (lecture)</td>
<td>Murchison</td>
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<td>09/19/13</td>
<td>MID TERM EXAM 1 (Covers 08/29-09/17/13) 2:00 - 4:00 PM</td>
<td>Griffith/Murchison/Reddy</td>
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<tr>
<td>09/24/13 T</td>
<td>Pharmacology of the Autonomic nervous system</td>
<td>Griffith</td>
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<td>09/26/13 R</td>
<td>Ligand gated ion channels: structure and function. (lecture)</td>
<td>Wells</td>
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<td>10/01/13 T</td>
<td>A,B,Cs of GABA receptors / GABA pre-synaptic mechanisms / Glycine receptors (lecture)</td>
<td>Frye</td>
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<td>10/03/13 R</td>
<td>Allosteric modulation and GABA_ARs (lecture)</td>
<td>Frye</td>
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<td>10/08/13 T</td>
<td>Molecular-cellular-systems level mechanisms of general anesthesia (lecture/student JC presentations)</td>
<td>Frye</td>
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<td>10/10/13 R</td>
<td>Ligand gated ion channels: nicotinic Acetylcholine receptors: medical pharmacology (lecture)</td>
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<td>10/15/13 T</td>
<td>Ligand gated ion channels: nicotinic Acetylcholine receptors: medical pharmacology (lecture/Student JC presentation)</td>
<td>Winzer-Serhan</td>
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<td>10/17/13 R</td>
<td>MID TERM EXAM 2 (Covers 09/26/13-10/15/13) 2:00 - 4:00 PM</td>
<td>Frye, Wells, Winzer-Serhan</td>
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<td>10/22/13 T</td>
<td>G-protein coupled receptors: muscarinic cholinergic receptors. (lecture)</td>
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<td>10/24/13 R</td>
<td>G-protein coupled receptors: opioids. (lecture)</td>
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<td>Monoamine transporters (lecture)</td>
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<td>Catecholamines; Neurotransmitters and receptors. (lecture)</td>
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<td>Event Description</td>
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<td>11/21/13</td>
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<td>Lecturer: Reddy</td>
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<td>11/26/13</td>
<td>Thanks Giving</td>
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<td>11/28/12</td>
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<td>Guest lecturer: Dr. Lee Shapiro Temple</td>
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<tr>
<td>12/10/13</td>
<td>Neurological diseases: Addiction</td>
<td>Guest lecturer: Dr. Russell Sanchez, Temple</td>
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**Grading:** Exams are 60% of the final grade

*Midterm 1 = 20% of final grade* -- covers material and paper discussions for the first part of the course.

*Midterm 2 = 20% of final grade* -- covers material and paper discussions for the second part.

*Midterm 3 = 20% of final grade* -- covers material and paper discussions for the second part.

**Student topic presentation must include a handout = 20% of final grade** – Each student will prepare and present one 60 min lecture that includes a handout and other relevant lecture materials to a clinically relevant topic.

The lecture and the handouts will be evaluated as follows: The material presented is relevant to the topic and is presented clearly. Questions are answered correctly. The handout is easy to follow and covers the relevant material presented in the lecture. The presentations will be evaluated by the attending faculty.

The lecture should address:

a) clinical signs and symptoms of the disease,

b) relevance for society in terms of treatment costs, and lost productivity etc..
c) relevant preclinical models used to develop new treatment strategies
d) currently available drugs, their mechanism of actions, effects and side effects.

**Topics for student lectures:** Topics need to be coordinated with the course coordinator. Faculty mentors (in parenthesis for each topic) will assist the students in the preparation of the lecture material.
Neurological diseases: Schizophrenia. (Griffith)
Neurological diseases: Anxiety. (Winzer-Serhan)
Neurological diseases: Alzheimer’s. (Griffith)
Neurological diseases: Parkinson’s (Frye)
Neurological diseases: ADHD (Reddy)
Neurological diseases: Insomnia (Reddy)

**Presentations and summaries of research papers and guest lectures:** = 20% of final grade. Each student will present a research paper on a topic assigned by the lecturer, when not presenting themselves, the students will write a review about the paper to be discussed and turn it in prior to the discussion.
Paper presentations will be evaluated as follows: Obvious effort has been made to read, understand and prepare an outline (to hand out) and transparencies of the papers in such a way as to effectively lead the discussion of their meaning (100%); the paper has been read but the contents were not understood sufficiently to be effectively discussed and/or no outline was prepared for the class (70%); being totally unprepared or absent (0%). Each student will be assigned at 1 paper to prepare for presentation to the class during the course. Students also will be held accountable for the content of all papers on the Midterm and Final exams.

**Research Paper Presentations / Discussions:**
One week prior to each class discussion period, a research papers will be assigned. A specific student will be assigned to prepare and present the paper. All members of the class are expected to read and be prepared to ask questions about all the papers, and hand in a one page summary about the paper. Grades for the paper discussions will be based on the paper presentation and participation in paper discussion in class. The faculty strongly encourages use of the following outline to prepare written notes for your paper presentation. To facilitate presentation of the papers, overhead transparencies of tables and figures also should be prepared.

1. Introduction: What is the purpose of the study? What evidence makes this experiment the next logical step? What is the background literature upon which the proposed experiment is based?

2. Methods: Describe the methodology in general terms such as cell culture, whole cell electrophysiology or single cell RTPCR. Do not present excessive detail concerning such things as the pH of solutions, extraction procedures, or temperature of the vivarium. Be prepared to discuss these details if asked. Why are these specific techniques being used as opposed to alternative methodologies? Are these techniques appropriate?

3. Results: What are the major findings of the study? As much as possible this should be explained using the figures and tables of the paper. Are there appropriate controls? Are the statistics appropriate?

4. Discussion: What are the major conclusions of the study? What experimental evidence do the authors use to support their conclusions? Are the conclusions appropriate? Are the data misinterpreted or inappropriately emphasized? What future experiments would you propose based on these findings, i.e. what's the next logical step?
Plagiarism: passing off as one's own ideas, words, writings, etc. those that belong to another. Accordingly, you commit plagiarism if you copy the work of another person and submit it as your own, even if you have the permission of that person. Plagiarism destroys the trust among colleagues without which research cannot be safely communicated.

Academic Integrity: As stated in the Texas A&M Student Rules (www.tamu.edu/aggiehonor):

Student Rule 2.15: Plagiarism is the intentional use of ideas, words or data of another person without giving appropriate credit.

Student Rule 20.1: Commission of the following acts shall constitute scholastic dishonesty.

Student Rule 20.1.3: Plagiarism: Failing to credit sources used in a work product in an attempt to pass off the work as one's own. Attempting to receive credit for work performed by another, including papers obtained in whole or in part from individuals or other sources.

Student Rule 20.1.4: Conspiracy: Agreeing with one or more persons to commit any act of scholastic dishonesty.

To ensure your understanding of academic integrity, plagiarism, and the importance of citation, you are required to complete two online tutorials through the TAMU Libraries web page for this course. To complete each tutorial and its accompanying proficiencies:

- Go to TAMU Libraries http://library.tamu.edu.
- Login to email instructor the results of the proficiencies. Choose Tutorials under Class Resources and select the "Academic Integrity" button from the top listing.
- Complete the Citing Your Sources and the Academic Integrity & Plagiarism tutorials. Once you have completed the tutorial, choose the "Email results" button and email instructor the results by the specified date (see class schedule above for due dates).
- Failure to complete both tutorials, with a grade of at least 85%, and to submit results to instructor will result in a 5% deduction from final grade.

Plagiarism on any assignment will not be tolerated, and it will be recommended that you receive an "F" in this course if evidence of plagiarism is found.

Cheating: Aggies do not lie, cheat, or steal, nor do they tolerate those who do.

Visit www.tamu.edu/aggiehonor for more information.

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.
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): Petroleum Engineering

2. Course prefix, number and complete title of course: PETE 657-High Performance Computing for Earth Science and Petroleum Engineering


4. Prerequisite(s): Graduate classification

Cross-listed with: CSCE 657

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., M.E., Ph.D. in Petroleum Engineering or related 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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<thead>
<tr>
<th>PETE</th>
<th>657</th>
<th>HPC</th>
<th>EARTH SCIENCE &amp; PETE</th>
</tr>
</thead>
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<tr>
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<td>Lab</td>
<td>SCH</td>
<td>COP and Fund Code</td>
</tr>
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</tr>
</tbody>
</table>

Approval recommended by:

A.D. Hill 4/9/13 Department Head or Program Chair (Type Name & Sign) Date

Duncan Walker 4/9/13 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
PETE 657: High Performance Computing for Earth Science and Petroleum Engineering

Term (e.g., Fall 200X)
Fall 2013

Meeting times and location
Mondays, 11:30am-2:40pm, RICH 912B

Course Description and Prerequisites

Covers numerical simulation of problems in Earth Sciences and Petroleum Engineering using high performance computing (HPC). Students are expected to develop a parallel reservoir simulator as part of this course.

Graduate classification. Attendance will be limited to a maximum of 15 students.

Learning Outcomes or Course Objectives

The objectives of the course are for students to:

1. Develop an in-depth understanding of current approaches to building and simulating complex models of flow in porous media and Earth sciences using high performance computing.
2. Bridge the gap between reservoir modeling and simulation, high performance computing and parallel implementations, having a solid theoretical background in parallel architectures (software and hardware) and practical solutions to real world large-scale problems faced by scientist and petroleum engineers.

Instructor Information

Name
Dr. Eduardo Gildin, Dr. Vivek Sarin and Dr. George Moridis

Telephone number
(979) 862-4578

Email address
eduardo.gildin@pe.tamu.edu

Office hours
TBD

Office location
401J Richardson Building

Textbook and/or Resource Material

The main source of material for the course will be a series of notes and slides handed out to the students. Complementary textbooks are:

Introduction to Parallel Computing, 2nd ed., by A. Grama, A. Gupta, G. Karypis, and V. Kumar, Addison-Wesley
Numerical Analysis, Burden and Faires, 2005
Matrix Computations, Golub and Van Loan, 1996
Understanding and Implementing the Finite Element Method by Mark S. Gockenbach, SIAM, 2006.
Theory and Practice of Finite Elements by Alexandre Ern and Jean-Luc Guermond, Springer, 2004
Finite Volume Methods for Hyperbolic Problems, Randall LeVeque, 2004
Petroleum Reservoir Simulation, by Khalid Aziz and A. Settari, 1979
Grading Policies

Homework .................................................................................. (50%)
Final Project Presentation ....................................................... (15%)
Final Project Report .................................................................. (35%)
Total........................................................................................ (100%)

Grading Scale

A......................................................................................... 90-100%
B......................................................................................... 80-89%
C......................................................................................... 70-79%
D......................................................................................... 60-69%
F......................................................................................... 0-59%

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intro to Reservoir Simulation - Gildin</td>
</tr>
<tr>
<td>2</td>
<td>Intro to numerical computing (linear solvers, numerical linear algebra, etc) - Gildin</td>
</tr>
<tr>
<td>3</td>
<td>The need for parallel computing in reservoir simulation - Industry perspective</td>
</tr>
<tr>
<td>4</td>
<td>Introduction to Final Project (Reservoir Simulation) - Moridis</td>
</tr>
<tr>
<td>5</td>
<td>Parallel computing technology - Sarin</td>
</tr>
<tr>
<td>6</td>
<td>Algorithms - Sarin</td>
</tr>
<tr>
<td>7</td>
<td>Programming - Sarin</td>
</tr>
<tr>
<td>8</td>
<td>Programming - Sarin</td>
</tr>
<tr>
<td>9</td>
<td>Numerical algorithms - Sarin</td>
</tr>
<tr>
<td>10</td>
<td>Numerical algorithms - Sarin</td>
</tr>
<tr>
<td>11</td>
<td>Numerical algorithms - Sarin</td>
</tr>
<tr>
<td>12</td>
<td>Large-Scale Optimization</td>
</tr>
<tr>
<td>13</td>
<td>Tutorial on Parallel Eclipse/Intersect or any other Commercial software - Gildin - Hands-on session (lecture by Schlumberger)</td>
</tr>
<tr>
<td>14</td>
<td>Reservoir Simulation Code - Parallelization</td>
</tr>
<tr>
<td>15</td>
<td>Final project assignment</td>
</tr>
</tbody>
</table>

Other Pertinent Course Information

Since general reservoir simulation concepts will be discussed with no emphasis on specific areas, all engineering and computer science majors are welcome to attend the class. Also, mathematics and applied mathematics students are well suited to attend this course, although there will be no specific emphasis on the numerical algorithms and theorems proofs. Students are expected to know the following: Basic Reservoir Simulation or equivalent class; Linear Algebra and Matrix Computations of equivalent class; Advanced Calculus or equivalent class; Programming experience. Matlab, Fortran, C, C++.

Students may refer to Students Rule 07 for attendance policies: http://student-rules.tamu.edu/rule07
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://www.tamu.edu/aggiehonor

"An Aggie does not lie, cheat, or steal, or tolerate those who do."
Departmental Request for a New Course
Undergraduate • Graduate • Professional

1. Request submitted by (Department or Program Name): Department of Teaching, Learning and Culture

2. Course prefix, number and complete title of course: RDNG 630: Writing: Development, Assessment, and Instruction

3. Catalog course description (not to exceed 50 words):
Examines the nature of writing development and how to assess both formally and informally; includes successful instructional techniques based on empirical evidence.

Graduate Classification

4. Prerequisite(s):

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

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

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

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

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

M.Ed., M.S., PhD in EDCI

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>RDNG</th>
<th>630</th>
<th>WRITE</th>
<th>DEV</th>
<th>ASSESS</th>
<th>INSTR</th>
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<tbody>
<tr>
<td>Lect.</td>
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<td>Acad. Year</td>
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<td>3</td>
<td>1</td>
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</table>

Approval recommended by:

Yeping Li
Department Head of Program Chair (Type Name & Sign) Date

George Cunningham
Chair, College Review Committee Date

Doug Palmer
Dean of College Date

Mark Zoran
Chair, GC or UCC 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.
Texas A & M University
College of Education
Dept. of Teaching, Learning, and Culture

RDNG 630: Writing: Development, Assessment, and Instruction

Spring 2014

Instructor: R. Malatesha Joshi, Ph.D.    E-Mail Address: MJOSHI@TAMU.EDU
Office Address: 204, Harrington    Office Hours: Mondays and Wednesdays 1-4 pm

Course Description

The main content of the course is to examine the nature of writing development and how
to assess both formally and informally, as well as successful instructional techniques based on
empirical evidence.

The prerequisite for the class is graduate classification.


Publishing Co.

Course Objectives

After the successful completion of the course, each student is expected to be able to apply
the knowledge to understand:

a. the development of writing both from phylogenetical and ontogenetical perspectives;

b. different stages of writing development among English-speaking students as well as
speakers of other languages;

c. formal and informal assessment instruments of writing;

d. various instructional techniques in improving writing at various grade levels;

e. various research techniques used in studying writing development; and

f. the relationship between reading and writing
Grading Policies:

COURSE REQUIREMENTS AND EXPECTATIONS

Although it is important to complete all assignments, the quality of the work is the most important factor. So as to insure effective instruction, students are expected to attend all class sessions in their entirety. Further, the responsibility for the materials covered, assignments given, etc., during the student's absence rests with the student. The student should make every possible effort to turn in all assignments at the scheduled time on the scheduled date. It will be necessary to discuss any exceptions to this policy, should they occur, with the instructor. (http://student-rules.tamu.edu/rule07)

Grades will be determined by the following criteria:

1. **Class attendance/class participation:** (After the first unexcused absence, three points may be deducted from the total points.) (15 points)

2. **Paper #1:** A paper of approximately 15 pages summarizing the current research on a topic mutually agreed by student and instructor. Your paper must include a minimum of ten references from at least three different peer-reviewed high-impact journals. (25 points)

3. **Paper #2 (Could be continuation of paper #1):** Expanding on paper #1, this paper should synthesize current research on a topic relating to writing and should be approximately 25 double-spaced typed pages with current references from journal articles following APA format. The topic must be approved in advance by the instructor. Your paper must include a minimum of fifteen references from at least five different peer-reviewed high-impact journals. (35 points)

4. **Oral presentation:** In this assignment, you will prepare a 10-12 minutes oral presentation to the class on a topic related to recent research on writing. Select topics from journal articles from refereed journals, books, and recent publications depending upon your needs and interests. You may want to select topics about which you would like more information. The topics must be approved in advance by the instructor. Your presentation must include a minimum of ten references from at least four different peer-reviewed high-impact journals. (25 points)

5. **Final Exam:** A comprehensive exam based on the lectures and discussions (100 points)

   The main goal of these projects is to give you the opportunity to apply the knowledge gained through readings and class discussions to your research and teaching experiences. You will be expected to share your findings and to distribute a 1-2 page summary paper to your classmates. The guidelines for judging your project will include applicability of the assignment to the course, adequacy with which you present your ideas, and support which you provide for your ideas.

   // Grading scale will be as follows: A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%
Outline for Presentation:

a. Clear explanation and definition of terms and materials
b. Use research to outline the pros/cons; compare and contrast the topic
c. Clearly summarize and interpret the research materials with reference to specific articles/authors
d. Application to teaching and research discussed (used different resources that are recently published)
e. Conclusion: summarize the presentation

QUESTIONS & ANSWERS: HANDOUTS & VISUAL AIDS

REFERENCES: (APA format and Cited): You may be interested in checking the following websites

            http://owl.english.purdue.edu/owl/resource/560/01/
            http://flash1r.apa.org/apastyle/basics/index.htm

In the above reference, click on Social Sciences, then check: Documenting Sources; APA formats for citations, references, and a sample paper.

There will be several research papers that will be distributed during the course.

Supplementary Readings

Students should familiarize themselves with current topics by reading the following journals regularly throughout the semester:

Reading Research Quarterly
Journal of Learning Disabilities
Literacy Research and Instruction
Journal of Research in Reading
Journal of Educational Psychology
Cognition
Applied Psycholinguistics
Journal of Psycholinguistic Research
Journal of Experimental Child Psychology
Reading and Writing: An Interdisciplinary Journal

Accommodation for students

Americans with Disabilities Act (ADA) Policy Statement

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

**Academic Integrity Statement**

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


For specific details on the Texas A&M University Honor Code and other regulations, consult: http://student-rules.tamu.edu/aggiecode.htm

For specific information about plagiarism consult the “Academic Misconduct” section of the Texas A&M Student Rules: http://student-rules.tamu.edu

**Academic Honesty**

The handouts used in this course are copyrighted. By “handouts”, I mean all materials generated for this class, which include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless I expressly grant permission.

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 the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated.

**Tentative class schedule:**

**Week #1:** Course/class introduction, Definition of Terms, Importance of writing in the society; Factors affecting writing acquisition, Nature of orthography in different writing systems
   Chapters 1-3 Handbook of Writing research (HWR)

**Week #2:** Theories and Models of writing
   Chapters 4-5 –HWR

**Week #3:** Writing Development
   Chapters 6-9 HWR

**Week #4:** Motivation and Writing
Chapters 10-12 HWR

Week #5: Assessment of Writing
   Chapters 24-28 HWR

Week #6: Assessment of writing (Continued)
   Chapters 24-28 HWR
   Term Paper #1 due

Week #7: Instructional Models and Approaches
   Chapters 13-16 HWR
   Chapters 1-3 Writing Better (WB)

Week #8: Instructional Models and Approaches (cont.)
   Chapters 17-19 HWR
   Chapters 4-9 WB

Week #9: Writing strategies that are Genre specific
   Chapters 10-14 WB

Week #10: Writing and special populations
   Chapters 20-23 HWR

Week #11: Writing and special populations
   Chapters 20-23 HWR

Week #12: Strategy Instruction in Writing
   Chapters 15-17 WB
   Term Paper #2 due

Week #13: Student presentations

Week #14: Current research and future directions; Final Exam

You may wish to refer to ISI Web of Science for up to date information on current publications.

Bibliography:


Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and 2 copies. Attach a course syllabus to each.

1. This request is submitted by the Department of Wildlife & Fisheries Sciences

2. Course prefix, number and complete title WFSC 654 - Amazon Field School

3. Course description (not more than 50 words) Introduction to social and ecological complexities of biodiversity conservation in tropical ecosystems. Field methods from biological and social sciences evaluate causes, consequences, and solutions to biodiversity loss through lenses of ecology, culture, and governance.

4. Prerequisite(s) graduate classification

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 489/689? ☐ Yes ☑ No If yes, how many times? _______ Indicate the number of students enrolled for each academic period it was taught. Summer 2011-10; Summer 2012-10

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

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

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

10. Prefix Course # Title (exclude punctuation)

<table>
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<tr>
<th>WFSC</th>
<th>654</th>
<th>AMAZON FIELD SCHOOL</th>
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</table>

Lect. Lab SCH Subject Matter Content Code Admin. Unit Acad. Year FICE Code

| 04 | 00 | 03 | 03 | 01 | 00 | 05 | 29 | 51 | 12 | 13 | 00 | 36 | 32 |

Do not complete shaded area.

Approval recommended by: D. W. 4/17/12
Head of Department

Chair, College Review Committee 4/17/12

Dean of College 6-18-13

To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.
OAR/AS-504
Syllabus

Applied Biodiversity Science NSF-IGERT Program
AMAZON FIELD SCHOOL
Summer I 2014
RPTS/WFSC/VPAT 689
11 May – 29 May 2014
Tambopata, Peru

Instructors:
Donald Brightsmith, dbrightsmith@cvm.tamu.edu
Amanda Stronza, astronza@tamu.edu
Lee Fitzgerald, lfitzgerald@tamu.edu
Leslie Ruyle, absigert@gmail.com

Local Counterparts:
Rainforest Expeditions
Native Community of Infierno

Description: This course is an introduction to the social and ecological complexities of biodiversity conservation in tropical ecosystems. We will use a variety of field methods from the biological and social sciences to evaluate the causes, consequences, and solutions to biodiversity loss through the lenses of ecology, culture, and governance. Students must have junior or senior standing and show a strong interest in conservation along with a minimum 2.0 GPA and instructor permission to participate in this course. There are no other prerequisites for participation in the course.

Field Site: The course will take place in the Tambopata National Reserve and Bahuaja Sonene National Park in the Department of Madre de Dios, Peru. The region has some of the highest recorded levels of biodiversity in the world, but it is vulnerable to many new threats, including extensive agriculture, gold mining, illegal logging, and land speculation associated with the Inter-Oceanic Highway.

Activities: We will explore a variety of terrestrial and freshwater habitats in various settings, including two ecotourism lodges, a frontier town, a national park, and a local community. Interdisciplinary teams will examine all sides of complex issues surrounding the region's conservation challenges, talking with conservation practitioners and scientists.

Guiding Questions:
1) What are the threats to biodiversity and human livelihoods in Tambopata? What are the responses from local institutions and actors?
2) What is the role of scientific inquiry in addressing threats to biodiversity and human livelihoods?
3) How can social scientists and natural scientists collaborate in the field?
4) In “cultural landscapes,” how do we see nature? In “natural landscapes,” how do we see culture?

Learning Activities
- Collaborate in teams to gather ecological, cultural, and economic information on the following Conservation Case Studies:
  a) WILDLIFE USE AND CONSERVATION: Ecological Challenges of Balancing Consumptive and Nonconsumptive Uses
  b) COMMUNITIES AND WATER: Governing Fish, Otters, Miners, and Tourists
c) FORESTS AND CHOICES: Managing for Charcoal, Palm Fruits, Macaws, and Brazil Nuts
  - Keep a journal of field notes and observations
  - Present findings on Conservation Case Studies

/\ Learning outcomes
  - Learn how to record relevant notes and observations in a field notebook
  - Improve abilities to communicate and collaborate with colleagues in the biological and social sciences
  - Understand the role of scientific inquiry in addressing threats to biodiversity and human livelihoods.
  - Have an increased understanding of the social and biological context in which issues of tropical biodiversity conservation are played out.
  - Learn how both data and perspectives from the biological and social sciences can inform decisions when addressing threats to biodiversity and human livelihoods

Course Grades

Graduate students:

Level of participation
  - Discussions 200
  - Field trips 150
  - Field research 150
  - Compliance with rules 100

Presentations
  - Group presentation 200
  - Presentation on proposed thesis research 100
  - Research skill presentation 100


Graduate students will be required to complete a presentation of a research skill in the field to the remainder of the class. They will be graded on their ability to clearly communicate the reasons to use this technique and demonstrate its use. They will also be required to make a short (10 – 15 min) formal presentation of their proposed thesis research in the format of a presentation for a scientific meeting. The graduate students will also be graded on their leadership roles within their research groups. Leadership responsibilities during specific research activities will be rotated among graduate students and this will be evaluated by the accompanying faculty.

If an assignment is completed after the due date, the grade will be reduced at a rate of up to 10% per day. Exceptions for this rule may be made for illness. Students are required to attend all activities unless they are prohibited from doing so by illness or logistical problems (transportation, etc) which are outside of their control. Failure to participate in required activities in the absence of illness, logistical problems or other extenuating circumstances will be penalized by the loss of up to 50 points per activity missed. There will be no makeup for regularly scheduled activities, however, students forced to miss trips, discussions or activities they can request to be briefed on them by the instructors. If students are unable to give their group
presentations at the appointed time, instructors will find an alternative time for the presentation if timing and logistics allow.

Study Abroad Course Itinerary – (see attachment for proposed itinerary)

Americans with Disabilities Act (ADA) Policy Statement

The following ADA Policy Statement (part of the Policy on Individual Disabling Conditions) was submitted to the University Curriculum Committee by the Department of Student Life. The policy statement was forwarded to the Faculty Senate for information.

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 Disability Services, Cain Hall Room B118 or call 979 845-1637.

Academic Integrity Statement

"Scholastic misconduct is defined broadly as "any act that violates the rights of another student in academic work or that involves misrepresentation of your own work." Plagiarism is one of the worst academic offenses, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student.

"An Aggie does not lie, cheat, or steal nor tolerate those who do."

The Aggie Code of Honor is an effort to unify the aims of all Texas A&M men and women toward a high code of ethics and personal dignity. For most, living under this code will be no problem, as it asks nothing of a person that is beyond reason. It only calls for honesty and integrity, characteristics that Aggies have always exemplified. The Aggie Code of Honor functions as a symbol to all Aggies, promoting understanding and loyalty to truth and confidence in each other. If you have any questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, Part 1, Section 20 which can be found online at http://student-rules.tamu.edu. Any suspected instances of scholastic dishonesty will be investigated and resolved according to the procedures outlined in the new Aggie Honor System (http://www.tamu.edu/a-iehonor/).
<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
<th>Organization</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00 am</td>
<td>Amanda Stronza</td>
<td>Texas A&amp;M, Applied Biodiversity Sciences Program</td>
<td>Welcome and opening of symposium</td>
</tr>
<tr>
<td>9:10 am</td>
<td>Juan Carlos Flores</td>
<td>Grupo de Trabajo de la Sociedad Civil para la Interoceánica Sur – Perú</td>
<td>Posición de la sociedad civil respecto a la construcción de la carretera Interoceánica Sur.</td>
</tr>
<tr>
<td>9:55 am</td>
<td>Juan Loja</td>
<td>ISUR</td>
<td>Proyectos de desarrollo y conservación a realizarse en el ámbito de la Interoceánica Sur</td>
</tr>
<tr>
<td>10.40 am</td>
<td>Coffee Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.00 am</td>
<td>Carlos Sanchez and Deyvis Huaman</td>
<td>AIDER</td>
<td>Contrato de administración parcial Reserva Nacional Tambopata y el Parque Nacional Bahuaja Sonene</td>
</tr>
<tr>
<td>11.45 am</td>
<td>Amanda Stronza</td>
<td>TAMU</td>
<td>Ecotourism: Local Effects in One Tambopata Community</td>
</tr>
<tr>
<td>12.30 pm</td>
<td>Lunch</td>
<td></td>
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<tr>
<td>2.30 pm</td>
<td>Ramón Rivero</td>
<td>Sociedad Peruana de Derecho Ambiental</td>
<td>Mecanismos de conservación privada desarrollándose en Madre de Dios</td>
</tr>
<tr>
<td>3.15 pm</td>
<td>Cesar Ascorra</td>
<td>CARITAS</td>
<td>Impacto social y ambiental de la minería en Madre de Dios</td>
</tr>
<tr>
<td>4.00 pm</td>
<td>Break</td>
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<tr>
<td>4.15</td>
<td>Chantelle Murtagh</td>
<td></td>
<td>Indigenous peoples of Madre de Dios - Politics and indigenous movements</td>
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<tr>
<td>5:00</td>
<td>John Janovec</td>
<td>Botanical Research Institute of Texas</td>
<td>Tropical botany and aguajales</td>
</tr>
</tbody>
</table>
Detailed schedule

11 May  Fly to Peru spend the night in Lima

12 May  Fly to Puerto Maldonado and take the boat up to Posada Amazonas
         Move in to rooms
         Brief guided walk in forest (depending on arrival time)
         Dinner
         Introduction to the course and Conservation Case Studies
         Overnight: Posada Amazonas

13 May  Overnight Posada Amazonas
         Breakfast
         Communities and water activity: Visit to Oxbow Lake
         Lunch
         Basic introduction to the ecology of Conservation Case Studies: Forest walk Focus on the
         forest and do NOT go to the canopy tower (wildlife, Brazil nuts, Dipterix trees, inland
         water bodies, wildlife)
         Field notes lecture (Fitzgerald, Stronza et al)
         Dinner
         Discussion: Local maps and satellite imagery: connecting ecology, culture and governance
         Students choose their case study teams

14 May  Overnight Centro Ñape
         Wildlife techniques: Bird and Mammal Identification (all go to canopy tower)
         Breakfast
         Leave after breakfast (move out of rooms take an overnight bag leave large luggage)
         Tour of Centro Ñape and Don Honorato presentation about medicinal plants
         Lunch at Ñape
         Participatory mapping activity
         Hunting and forest types walk (from late afternoon in to early evening return after dark)
         Late Dinner
         Brief discussion of transect methodology and estimating animal abundances

15 May  Overnight Posada Amazonas
         Early AM bird and primate transect methodology activity
         Breakfast
         Return to Posada after Breakfast
         Forests and Choices discussion and field lecture (walk down to harvested Brazil nut tree on
         way to big Kapok. Go to big Kapok, sit there and talk about the ecology of hardwoods versus
         softwoods, human park interactions, use of hardwoods and softwoods.)
         Lunch
         Tour of Posada Amazonas (with lodge manager, talk about Rainforest Alliance Certification,
         Green innovations, the importance of the lodge to the community etc.)
         Talk by Stronza on Tourism in Infierno
         Dinner
         Discussion of time at Centro Ñape

16 May  Overnight Puerto Maldonado
Early AM fishing activity (go super early 4 AM?) to make sure that we are early enough to be able to clearly see the transition from NIGHT fish to Day fish
Travel to Puerto Maldonado,
Visit to Mining site 2 hour drive to Quebrada Guacamayo
Lunch in car
Move in to Peru Amazonico
Lecture: Brief intro to the town and safety briefing
Dinner (students on their own)

17 May
Overnight Puerto Maldonado
9:00 AM – 5 PM Conservation Symposium (see schedule above)
Quick discussion on plans for visiting the market
Dinner (on your own)
Free Time

18 May
Overnight Puerto Maldonado
6 AM Visit to the local market
Students will be given instructions to search for information regarding a variety of local and regional products (wildlife, hardwood charcoal, Brazil nuts, Aguaje palm, edible palm larvae, fish, and gold). Breakfast on your own.
Lunch in PEM
2 PM Tour of farm with Victor Zambrano
Discussion of Market and or Victo Zambrano
Dinner on own

19 May
Overnight Infierno
8 AM pickup
Brief tour of the center of the community
Visit with community hunters
Meet with member of the Control Committee of the Native Community of Infierno
Box lunch provided by RFE
Transfer to homestays (split among Duran, Mishaja and one or two other sites)

20 May
Overnight Infierno
Breakfast
Ethnographic and biological field notes, participant observation, and informal conversations with local families
Lunch and Dinner with families

21 May
Overnight Infierno
Breakfast
Separate time in three households
Ethnographic and biological field notes, participant observation, and informal conversations with local families
Lunch and Dinner with families

22 May
Overnight Tambopata Research Center
11 AM Infierno to Tambopata Research Center (4 hours on river)
Move in to rooms
23 May
Overnight Tambopata Research Center
Early AM Wildlife: Visit to parrot clay lick
Breakfast
Forest walk (wildlife observation, macaw nest sites natural and artificial in Dipteryx, wildlife identification, visit small water bodies in trail system)
Lunch
Free time
Dinner
Faculty Research Lecture: Brightsmith (Wildlife: Parrot community nesting)

24 May
Overnight Tambopata Research Center
Breakfast 7:30
Wildlife research activity
Lunch
Forests research activity
Dinner
Wildlife techniques: Bat mist netting

25 May
Overnight Tambopata Research Center
Optional Early AM Visit to parrot clay lick or other activity
Breakfast
Aquatics activity: Trip to a stream for net fishing
Lunch
Team work on Conservation Case Studies
Dinner
Free time or night hike

26 May
Overnight Tambopata Research Center
Free time work on Conservation Case Studies
Lunch
Presentation of Conservation Case Studies findings
Dinner

27 May
Overnight El Gato
Early departure to travel from TRC to El Gato
Lunch on boat or at El Gato
Free time for swim or forest exploration
Final dinner at El Gato

28 May
Travel from El Gato to Puerto Maldonado
11:35 AM Flight to Lima
Afternoon in Lima (shopping and museums)
Overnight flight back to the USA

29 May
Return to TAMU