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. Course request type:  
   - [ ] Undergraduate  
   - [x] Graduate  
   - [ ] First Professional Degree

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

3. Course prefix, number and complete title of course:  
   BIOL 612 Fundamental Molecular Cell Biology

4. Catalog course description (not to exceed 50 words):  
   Provides non-biology majors a foundation in current molecular and cellular biology and genetics; covers the basis for many interdisciplinary studies including biostatistics, cancer biology, and biomedical materials and devices.

5. Prerequisite(s):
   - Graduate classification for non-biology majors

   Cross-listed with:  
   Stacked with:

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

6. Is this a variable credit course?  
   - [ ] Yes  
   - [x] No  
   If yes, from ______ to ______

7. Is this a repeatable course?  
   - [ ] Yes  
   - [x] No  
   If yes, this course may be taken ______ times.

8. Will this course be repeated within the same semester?  
   - [ ] Yes  
   - [x] No

9. Will this course be submitted to the Core Curriculum Council?  
   - [ ] Yes  
   - [x] No

10. How will this course be graded?  
    - [x] Grade  
    - [ ] S/U  
    - [ ] P/F (CLMD)

11. 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)

   PhD and MS for all majors except for BIOLOGY and MICROBIOLOGY

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

13. Prefix | Course # | Title (excluding punctuation)
   ------- | -------- | -------------------------------
   BIOL  | 612 | FUNDAMENTAL MOL CELL BIOL

   Lect. | Lab | Other | SCH | CIP and Fund Code | Admin. Unit | Acad. Year | ICE Code | Level  |
   ------- | --- | ------ | ---- | ----------------- | ------------ | ------------ | -------- | -------|
   3.00 | 0.00 | 3.00 |  | 0440 | 15 | 16 | 0 0 3 6 3 2 |

   Approval recommended by:  
   [Signature]  
   4-30-15

   Department Head or Program Chair (Type Name & Sign)  
   [Signature]  
   5-4-15  
   Chair, College Review Committee  
   [Signature]  
   5/4/15

   Department Head or Program Chair (Type Name & Sign)  
   (if cross-listed course)  
   [Signature]  
   6-19-15  
   Dean of College  
   [Signature]  

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

   Chair, GC or BCO  
   [Signature]  
   [Date]  

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu.  
Curricular Services - 07/14
BIOL 612      Fundamental Molecular Cell Biology           Summer 2016
Mon-Fri, 12:00pm-1:35pm
BSBW025

Course description and prerequisites
The purpose of this course is to provide graduate students with non-biology majors a foundation in current molecular and cellular biology and genetics. The material covered in this course is the basis for many interdisciplinary studies including biostatistics, cancer biology, and biomedical materials and devices.
Contact the instructor if you are not sure whether this is the right course for you.

Instructor:
Dr. Hongmin Qin
Tel 979 458 0512
228A BSBW
hqin@mail.bio.tamu.edu
Office hours - Monday - Immediately after class or by appointment

This text contains a collection of problems at the end of each chapter. The answers are included at the end of the book, but you should write your own before checking the keys to assess your mastery of the material.

Learning Objectives: By the end of the course students will be able to (1) describe the structures, molecules and mechanisms of cellular energy generation and management, (2) explain the molecular nature of a gene and how its expression affects cellular phenotype (3) describe the processes of cellular endomembrane sorting and the transport of cellular materials between different organelles, (4) know the molecular components and mechanisms of cellular signal transduction, (5) understand the processes and regulation underlying cell mitosis and division, and (6) use the principles of meiosis and inheritance to make genetic predictions. Students will be encouraged to discuss the relevance/application of these topics to their own fields.

eCampus: Grade information and materials posted by faculty may be located on the course eCampus site. To access eCampus Logon to http://ecampus.tamu.edu/
Choose the TAMU (Net ID) logon option. Logon with your Net ID and password. Choose the Biol 612 course list link.

Release of Grades: The Family Educational Rights and Privacy Act (FERPA) prohibits faculty and staff from posting grades to unsecured websites or reporting grades by e-mail or telephone. Individual grade information is available via eCampus or in person from faculty during office hours.

Grading policies:
There will be 3 exams each worth 100 points each and 5 homework assignments worth 100 points. Although class attendance and participation will not be graded, it is expected. Grades will be determined using total points accumulated. 400-360 points (90% and above) is an A, 359-320 points is a B, 319-280 is a C, 279-240 is a D. If necessary, the grades will be adjusted based on the students’ overall performance.

Attendance and make-up policies:
The university views class attendance as an individual responsibility. See http://student-rules.tamu.edu/rule07 for additional information. However, it is important to come to class, if for no other reason than to determine what material we expect you to know and to what level we expect you to know it.

Exams will consist primarily of short answer questions covering class lectures and assigned readings. Emphasis will be placed on data analysis and experimental design. Each exam is designed to take approximately the length of the class; however, you may take as long as you like. You may not leave and come back to finish at a later time.

Only valid excuses, as defined by the University Student Rules, will be considered for requests to make up exams. If you anticipate an excused absence will conflict with an exam, please contact me before the scheduled exam so that we can arrange something appropriate.

**Homework Assignments:**
There will be 5 weekly homework assignments worth 20 points each. Students may discuss the homework; however, each student must prepare his or her final answers independently. Plagiarism will not be tolerated.

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

**Academic Integrity:**
"An Aggie does not lie, cheat or steal, or tolerate those that 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. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information see: http://www.tamu.edu/aggiehonorr/

**Tentative Lecture and Exam Schedule**

| Introduction to Cells | Ch. 1 |
| Chemical Components of Cells | Ch. 2 |
| Energy, Catalysis and Biosynthesis | Ch. 3 |
| Protein Structure and Function | Ch. 4 |
| Membrane Structure | Ch. 11 |
| How Cells Obtain Energy from Food | Ch. 13 |
| Energy Generation in Mitochondria | Ch. 14 |

*Exam 1*

| DNA and Chromosomes | Ch. 5 |
| DNA Replication, Repair and Recombination | Ch. 6 |
| From DNA to Protein | Ch. 7 |
| Control of Gene Expression | Ch. 8 |

*Exam 2*

| Cytoskeleton | Ch. 17 |
| Cell communication | Ch. 16 |
| The cell division cycle | Ch. 18 |
| Sexual Reproduction and the power of genetics | Ch. 19 |

*Exam 3*
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and attach a course syllabus.

Form Instructions
1. Course request type:
   - ☐ Undergraduate
   - ☑ Graduate
   - ☐ First Professional (DDS, MD, JD, PharmD, DVM)
2. Request submitted by (Department or Program Name):
   Department of Teaching, Learning and Culture
   EDCI 754: Trends in Data Management & Analysis
3. Course prefix, number and complete title of course:

4. Catalog course description (not to exceed 50 words):
   Provides students with an understanding of basic principles behind modern data management and analysis; explores and analyzes data to identify school improvement needs and make informed decisions in effecting change.

5. Prerequisite(s):
   Graduate classification; admission to Online Ed.D. in Curriculum and Instruction

   Cross-listed with:

   Stacked with:

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

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

7. Is this a repeatable course?  ☑ Yes  ☐ No
   If yes, this course may be taken ________ times.

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

9. Will this course be submitted to the Core Curriculum Council?
   - ☐ Yes
   - ☑ No

10. How will this course be graded?
    - ☑ Grade
    - ☐ S/U
    - ☐ P/F (CLMD)

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

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

13. Prefix | Course # | Title (excluding punctuation) | Lec. | Lab | Other | SCH | CP and Fund Code | Admin. Unit | Acad. Year | HCE Code
---|---|---|---|---|---|---|---|---|---
EDCI | 754 | Trends in Data Management & Analysis | 3.00 | 0.00 | 0.00 | 3.00 | 13.0301.00 | 2804 | 16 | - | 17 | 0 | 0 | 3 | 6 | 3 | 2

Approval recommended by:

Yeping Li
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 – 07/14
Course title and number
EDCI 754: Trends in Data Management & Analysis

Term
Fall 2015

Meeting times and location
Online – e-Campus Class; Classes open on Monday at 7:30 a.m.
begining the first week of class. All class assignments and forum
postings must be completed by the next Sunday at midnight.

Instructor Information

Name
James Laub, PhD
Email address
jlaub@tamu.edu
Office hours
By appointment, 312 Harrington Tower

Course Description and Prerequisites

This course is designed for graduate students who are working toward a doctoral degree in Curriculum
and Instruction. Admission to Graduate Studies and Cohort V of the Online Ed.D. program are required in
order to take this course.

The course is designed for students to provide students with an understanding of the basic principles
behind modern data management and analysis. Students will explore and analyze data to identify school
improvement needs and make informed decisions in effecting change. Special attention will be given to
the various theoretical frameworks needed to address those issues and implications and advance student
understanding. Each topic draws attention to significant aspects of pedagogical processes and provides a
distinctive means of understanding and managing organizational situations.

The course represents potential topics to be entertained during class sessions. These topics and their
positions in the schedule should be viewed as a general framework for our discussions and should not be
considered firmly restricted to any specific class session. The course will use a collegial, inquiry-based form,
allowing learners and the instructor to learn from one another.

The course goals aim to enhance teacher and curriculum leaders’ professional competence and skill set in
discovering and solving problems leading to effective solutions to educational problems in school-based
settings. Goals include:

(1) investigate current trends in educational evaluation and data mining
(2) evaluate data sources concerning key issues in educational policy and practice
(3) gain knowledge of the fundamental principles of disaggregating data
(4) develop a basic philosophy of data management and analysis to guide future data exploration.
(5) identify school improvement needs and develop plans to address deficiencies

** Syllabus is intended as a guide, not a contract. If it is in the best interest of the class to make
revisions, the instructor will do so. The instructor will notify students promptly of any revisions:**
Textbook and/or Resource Material

Required Texts:


Additional resources (further readings will be developed)


Grading Policies and Course Expectations

You are required to log into the website at least twice a week. It is very important that you do not miss posting any of your discussions, because your peers are responsible for reading them and posting their comments within the next 48 hours. If your discussion is not promptly posted, there is no other way that your peers can read it in a timely manner and post their comments. I do understand that sometimes it is not possible to avoid emergency issues or any undesired circumstances that may lead you to miss a class assignment. If you are late with an assignment, one point per day will be deducted for an assignment; except for university excused absences. If you miss a class assignment by an entire week, it is your responsibility to notify the instructor in advance or as soon as possible afterwards to discuss ways to make up the work.

Only university-excused absences with required documentation will allow you to make up missed work. Refer to http://student-rules.tamu.edu/rule07 for details on excused absences.

Honor Code

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

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

Community Learning – Discussion Forum (DF)

Participation in Online Discussions– A major goal of this class is for you to be able to articulate your understandings in writing to others in class. Class discussion is crucial to the development of this skill. By participating in critical online discussions of the assigned readings, you and your classmates will improve abilities to write publicly and critically about issues and ideas and to question (politely) the positions of others. Each student is expected to make substantial posts. .

Contributions to the Discussion Forum (DF) - A second goal of this class is for you to learn to work collaboratively to produce new knowledge through the Discussion Forum postings. Discussion Forum work provides an opportunity for you to introduce new readings and resources to the rest of the class.

Discussion Forum Responses (DFR) to others’ postings. You will respond to two different Discussion Forum postings from the week before. Your response should indicate that you have read the individual’s posting and the attached resource to the post and that you have addressed important points made in the resource.

Substantial Posts – Note: the word “substantial” refers to posts indicating thought-provoking responses that (a) either generate a new idea or evaluate an idea expressed in the reading or in another student’s initial post; and (b) embeds or uses information from the required reading. “Off-the-top” responses without substance will receive no credit.
**Book Study**

Working in small groups, students will select a chapter from the course textbook, *Transforming teaching and learning through data-driven decision making* and present that chapter to the class. Groups will be determined by mutual consent of Dr. Laub and the students. The presentation must be narrated, and presented in an electronic format (PowerPoint, Prezi, etc.) and address the following:

- What are the main points of the chapter?
- What are the implications for education and curriculum leaders?
- What is the relevant research on the topic?
- Reflection and questions?
- Be specific and stay on point – minimum of 15 slides, maximum of 30 slides.

**Data Analysis Paper:**

Using the concepts explored throughout this course, students will analyze Federal, State and local data sources to identify and describe educational problem(s) or deficiencies that curriculum leaders could face in a specific school district, and prepare a 10 – 15 page paper, addressing possible solutions to that problem(s). Library research will be required to supplement data sources. The paper must follow APA guidelines, 12 pt. font, double spaced and address the following:

- What are the problem(s) and/or deficiencies?
- How were data sources collected and analyzed?
- What specific policies were addressed?
- What are the implications for that district?
- What type(s) of problem solving models/protocol will be used?
- What potential solutions should be developed to address the problem/deficiency?
- Identify a possible ways to evaluate the proposed solutions.
- How would you implement any changes on your campus/district?
- Annotated bibliography
- Literature Review

Your literature review should be at least four pages, and include previous work on the research problem(s) you are interested in. The literature review is supposed to make you start thinking about your topic. It should not be just synopsis of existing work – you should also raise questions based on the work, e.g. possible extensions, counterarguments, etc. This review is practice in both summarizing and critiquing research work in print.

**Comprehensive Final Exam:**

Students will complete a comprehensive final exam, consisting of open-ended questions, focusing on all concepts and materials covered in class. The exam will be similar to the preliminary exam you will take at the end of your doctoral coursework, prior to advancing into the Record of Study phase. Answers must include cited references/sources and follow APA guidelines. Writing mechanics, grammar and scholarship will be a major part of the grading rubric.
**Grading**

Collaboration is encouraged; you will not be forced into some type of distribution, normal or otherwise. The grade is based upon (a) participation in class assignments (b) final examination and (c) quality of the problem of practice paper. Collaboration is encouraged; you will not be forced into some type of distribution, normal or otherwise.

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<th>Total Points for that Category</th>
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<td>Community Learning Discussion Forum</td>
<td>Contributions to Discussion Forum Entries (DF) and Discussion Forum Responses (DFR)</td>
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<tr>
<td>Data Analysis Paper</td>
<td>10 – 15 page, APA style, including literature review and annotated bibliography</td>
<td>300</td>
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<td>Final Exam</td>
<td>Comprehensive Final Exam covering all materials presented in class</td>
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<td>Book Study</td>
<td>Multi-media presentation of book</td>
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**Grade Distribution**

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<td>Sept. 7</td>
<td>No Child Left Behind Regulations Federal Register, 67(321), Pages 71709–71771 PDF Articles</td>
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<td>Sept. 14</td>
<td>Ch. 1 &amp; 2 - Bernhardt</td>
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<td>Comprehensive Final Exam</td>
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Americans with Disabilities Act

The American with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. 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 accommodation, please contact Disability Services, in Cain Hall B118, or call 845-1637. For additional information visit http://disability.tamu.edu.

Diversity Statement for the Department of Teaching, Learning, and Culture:
The Department of Teaching, Learning, and Culture (TLAC) does not tolerate discrimination, violence, or vandalism. TLAC is an open and affirming department for people, including those who are subjected to racial profiling, hate crimes, heterosexism, and violence. We insist that appropriate action be taken against those who perpetuate discrimination, violence, or vandalism. Texas A&M University is dedicated to non-discrimination on the basis of race, color, religion, gender, age, sexual orientation, domestic partner status, national origin, or disability in employment, programs, and services. Our commitment to non-discrimination embraces the entire university community including faculty, staff, and students.

TLAC Statement

The Department of Teaching, Learning and culture does not tolerate discrimination, violence, or vandalism. TLAC is an open and affirming department for all people, including those who are subjected to racial profiling, hate crimes, heterosexism, and violence, and vandalism. Texas A&M University is an Affirmative Action and Equal Opportunity institution and affirms its dedication to non-discrimination on the basis of race, color, religion, gender, age, sexual orientation, domestic partner status, national origin, or disability in employment, programs, and services. Our commitment to non-discrimination and affirmative action embraces the entire university community including faculty, staff, and students.

ONLINE COURSE EVALUATION SURVEYS are required, https://pica.tamu.edu. Look for announcements on e-Campus. You will receive notifications by email.

Instructional Technology Services
004C Heldenfels Hall • Texas A&M University • 3002 TAMU
(979) 862-3977 • its@tamu.edu • http://itsinfo.tamu.edu

Bibliography


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

Form Instructions  

1. Course request type:  
   - Undergraduate  
   - ✓ Graduate  
   - □ First Professional (DDS, MD, JD, PharmD, DVMA)  

2. Request submitted by (Department or Program Name):  
   Department of Geography  

3. Course prefix, number and complete title of course:  
   GEOG 677 Geomorphometry  

4. Catalog course description (not to exceed 50 words):  
   Introduction to discipline of geomorphometry; represents science of quantitative land-surface characterization.  
   Focuses on fundamental principles of terrain analysis, theory and concepts of land-surface and dynamics, software  
   and digital terrain modeling, production of land-surface parameters and objects, and terrain mapping applications.  

5. Prerequisite(s):  
   Equivalent of GEOG 361 (Remote Sensing in Geosciences) and GEOG 390 (Principles of GIS), or approval of  
   instructor. Graduate classification.  

   Cross-listed with:  
   Stacked with: GEOG 477 Terrain Analysis and Mapping  

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

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

7. Is this a repeatable course?  
   - Yes  
   - □ No  
   If yes, this course may be taken _______ times.  

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

9. Will this course be submitted to the Core Curriculum Council?  
   - Yes  
   - □ No  

10. How will this course be graded?  
    - ✓ Grade  
    - □ S/U  
    - □ P/F (CLMD)  

11. 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., Ph.D. in Geography  

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

13. Prefix  
    - GEOG  
    - □ 677  

    Course #  
    - □ Geomorphometry  

    Title (excluding punctuation)  

    GEOG 677 Geomorphometry  

    Lect.  
    - 3.00  

    Lab  
    - 0.00  

    Other  
    - 0.00  

    SCH  
    - 3.00  

    CIP and Fund Code  
    - 1104010002  

    Admin. Unit  
    - 1250  

    Acad. Year  
    - 16  

    HICL Code  
    - 3  

    Level  
    - 6  

Approval recommended by:  

David M. Cairns  
Department Head or Program Chair (Type Name & Sign)  
Date  
5/1/15  

Chair, College Review Committee  
Date  
5/1/15  

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

Dean of College  
Date  
5/1/15  

Chair, GC or UCC  
Date  
5/1/15  

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 — 07/14
Geographic Information Science and Technology
Department of Geography, Texas A & M University

Geography 677, 3 Hrs

Geomorphometry

©2015 Dr. Michael P. Bishop

LiDAR DEM  Slope Angle  Profile Curvature

Tangential Curvature  Unsphericity  Negative Openness
# Course Instructor

Dr. Michael P. Bishop  
Professor & Haynes Chair  
Founding Director - GEOSAT  
Office: O&M 707E  
Phone: (979) 845-7998  
Email: michael.bishop@tamu.edu  
Skype: mbishop

## Schedule, 2015

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
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<tr>
<td>5:00 pm</td>
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</tr>
</tbody>
</table>
2 Course Materials


3 Copyright Policy Statement

All materials used in this class are copyrighted. These materials include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, project assignments, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts or data, unless permission is explicitly granted.

4 Attendance Policy

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

5 Lectures and Reading

Lectures, chapter readings and discussion will be associated with each topic covered in the course. Students should read all assigned chapters to prepare for each meeting session. Lecture and discussion material frequently consist of information not found in general introductory and intermediate level GIScience, remote sensing, and terrain analysis textbooks. Consequently, it is essential that students attend all lecture sessions and read assigned book chapters before class. This also facilitates classroom participation and student questions. Students not able to attend lecture should contact the professor, teaching assistants and/or a student regarding presented information, as this information is necessary to do well on examinations. Students will also be involved in classroom discussions and debate.

Cell-phones should be turned off in the classroom, as they disrupt students and the professor. Students are required to ask questions and participate in classroom discussions and debate. This must be done with special attention to language and respect for others. Students will be asked to leave the classroom if they disrupt the class. Tape-recording of lectures will not be allowed except in accommodation of a student disability per Student Disability Services advisement.
6 Laboratory Exercises

Graduate students are not required to attend laboratory sessions, although they are encouraged to do so. There will be nine laboratory exercises during the semester. They are as follows:

1. Terrain analysis software
2. Digital terrain modeling
3. Digital terrain error analysis
4. Land surface parameters: First derivatives
5. Land surface parameters: Second derivatives
6. Land surface parameters: Statistical, multi-scale, climate, hydrological
7. Land surface objects
8. Terrain mapping I
9. Terrain mapping II

7 Graduate Student Project and Paper

Graduate students must design and implement a terrain analysis project. The topic and the outline of the project/paper must be approved by the professor. The paper should be single spaced and must have 10-15 pages of text with at least two high-quality graphics. Students will email a MS WORD document to the professor. Handwritten work will not be accepted. Project papers will be due at the beginning of class on Monday, the week before finals. Late papers will not be accepted unless a student has an excused absence.

All project papers must have the following headings:

- **Title.** The title should accurately reflect the project/topic. Special emphasis should be given to the nature of the problem (application), type of data, analysis algorithms, and/or the GIS methodological workflow approach where appropriate.

- **Introduction.** The introduction should introduce the topic/project to the reader and set the stage for subsequent sections. It is important that the reader be given sufficient background regarding the project and the inherent problems associated with using geospatial data and geospatial technologies. In addition, the introduction should present the potential role of spatial analysis and modeling for information extraction/problem solving.

- **Methodology.** The methods section should describe the characteristics of the data that are being utilized or evaluated. In addition, analytical procedures and sequential processing procedures associated with analysis and product generation should be presented.
• **Results and Discussion.** Students should present the results of their project. These results should also be discussed in terms of how GIS analysis can produce different kinds of information and be used to solve problems. Students are encouraged to utilize images, maps, tables, diagrams, and graphics to help demonstrate information to the reader. Students should attempt to discuss the implications of their results for science and society.

• **Summary and Conclusions.** This section should contain a general summary of the project with final conclusions and recommendations. Students should elaborate on their insights regarding the topic/project and discuss future advances and new directions.

• **References.** Students should reference research articles where appropriate.

## 8 Student Evaluation and Grading

<table>
<thead>
<tr>
<th>Assignments/Exams</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Examination</td>
<td>200</td>
</tr>
<tr>
<td>Final Examination</td>
<td>200</td>
</tr>
<tr>
<td>Lab Exercises</td>
<td>400</td>
</tr>
<tr>
<td>Project/Paper</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total Points</strong></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>

Laboratory exercises and project papers will be graded on overall quality and student effort. Final course grades will be determined by relative ranking of cumulative point scores. This usually equates to a scale of 90-100%(A), 80-89%(B), 70-79%(C), 60-69%(D), and ≤59%(F). Undergraduate and graduate students will be graded separately.

Academic dishonesty is regarded as a serious offense by the University, the Department of Geography, and the faculty. Academic dishonesty will result in a course grade of failure, regardless of the form of dishonesty. These include, but are not limited to, copying of laboratory assignments, copying of exam answers, plagiarism and use of Internet materials (not referenced) in papers.

## 9 Academic Integrity Statement and Policy

All students should be aware of the Aggie Honor Code and refer to the Honor Council Rules and Procedures on the web at http://aggiehonor.tamu.edu.

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

## 10 Student Issues and Questions

Students are encouraged to meet with the professor to discuss their progress in the class. This includes questions regarding any aspect of the course. Students are expected to meet with the pro-
fessor during scheduled office hours or by appointment. Do not wait until the end of the semester for an evaluation.

Students with disabilities are expected to discuss their situation with the professor as it relates to the course and individual performance issues. Approved accommodations, as defined by disability services, will be followed to assist the student in completing the course.

11 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.

12 Course Description and Prerequisites

Geography 689 is a graduate level special topics course designed to introduce students to the field of Geomorphometry, which represents the science of quantitative land-surface analysis. This course focuses on the theory and concepts of geomorphometry, software and digital terrain modeling, production of land-surface parameters and objects, and terrain analysis applications. Students are expected to have the equivalent of GEOG 361 (Remote Sensing in Geosciences), GEOG 390 (Principles of GIS), or approval of the instructor.

13 Course Objectives

This course is designed to provide graduate students exposure to the field of geomorphometry. Students will receive an introductory understanding of the science of quantitative land-surface analysis and modeling. Specifically, the course will emphasize various topics categorized as theoretical and conceptual issues, software analytical capabilities, digital terrain modeling an assessment, computation of land-surface parameters and objects, terrain mapping applications, and landscape evolution simulation. It emphasizes mastering the theoretical and fundamental principles of geomorphometry, and the utilization of geospatial technologies and analytical methods for landscape characterization. Students will receive exposure to the latest issues, information technologies, and application perspectives. Lectures, classroom discussions, reading assignments, applied projects, written assignments and a presentation will provide students with hands-on experience and problem-solving experience.
13.1 Learning Outcomes

At the end of the course, the student will be able to:

1. Describe the complex nature of topographic evolution.
2. Define the advantages and limitations of utilizing geospatial software technologies.
3. Use software and develop a reliable digital elevation model
4. Use software to generate land-surface parameters.
5. Use software to generate land-surface objects.
6. Search for and evaluate geomorphometry literature.
7. Synthesize technical and application domain knowledge to address mapping problems.
8. Compose their own original writing.
9. Interpret results within the context of a problem.
10. Apply technical skills to solve a problem.
11. Develop project plans and present results to an audience.

14 Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Course Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction and principles</td>
<td>Chapter 1, Articles from list to be assigned.</td>
</tr>
<tr>
<td>2</td>
<td>Theory and concepts</td>
<td>Chapter 2, Articles from list to be assigned.</td>
</tr>
<tr>
<td>3</td>
<td>Geodesy and representation</td>
<td>Articles from list to be assigned.</td>
</tr>
<tr>
<td>4</td>
<td>The software landscape</td>
<td>Chapters 10-18, Articles from list to be assigned.</td>
</tr>
<tr>
<td>5</td>
<td>DTM: Data sources</td>
<td>Chapter 3, Articles from list to be assigned.</td>
</tr>
<tr>
<td>6</td>
<td>DTM: Interpolation</td>
<td>Chapter 4, Articles from list to be assigned.</td>
</tr>
<tr>
<td>7</td>
<td>DTM: Assessment and quality</td>
<td>Articles from list to be assigned.</td>
</tr>
<tr>
<td>8</td>
<td>Land-Surface Parameters</td>
<td>Chapter 6, 7, Articles from list to be assigned.</td>
</tr>
<tr>
<td>9</td>
<td>Land-Surface Parameters</td>
<td>Chapter 8, Articles from list to be assigned.</td>
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<tr>
<td>10</td>
<td>Land-Surface Objects</td>
<td>Chapter 9, Articles from list to be assigned.</td>
</tr>
<tr>
<td>11</td>
<td>Land-Surface Objects</td>
<td>Articles from list to be assigned.</td>
</tr>
<tr>
<td>12</td>
<td>Terrain mapping applications</td>
<td>Chapter 19-27, Articles from list to be assigned.</td>
</tr>
<tr>
<td>13</td>
<td>Terrain mapping applications</td>
<td>Articles from list to be assigned.</td>
</tr>
<tr>
<td>14</td>
<td>Terrain Mapping applications</td>
<td></td>
</tr>
</tbody>
</table>
15 Topical Outline

15.1 Principles of Geomorphometry

15.1.1 Sampling the Land Surface
15.1.2 Generating a Surface Model
15.1.3 Correcting Errors and Artifacts
15.1.4 Deriving land-Surface Parameters and Objects
15.1.5 Mapping Applications using Parameters and Objects
15.1.6 Landscape simulations using Parameters and Process Mechanics

15.2 Theory and Concepts

15.2.1 Lithospheric Processes
15.2.2 Systems Coupling and Feedback

15.2.3 Controlling factors
   - Climate
   - Surface processes
   - Tectonics
   - Topographic forcing

15.2.4 Concepts in Geomorphometry
   - Process mechanics
   - Process regime
   - Scale and scale dependence
   - Conceptual models of land surface
   - Terrain Complexity
   - Surface deformation
   - Surface parameters
15.3 Geodesy and Representation

15.3.1 Earth Geometry and Topography

15.3.2 Mathematical Models

15.3.3 Digital Models

15.3.4 Sampling and Scale

15.4 The Software Landscape

15.4.1 Digital Image Processing Systems

15.4.2 Geographic Information Systems

15.4.3 Hydrology Software Systems

15.4.4 Geomorphometry Software Systems

15.5 Digital Terrain Modeling

15.5.1 Sources of Topographic Data

- Ground survey
- Topographic maps
- Remote sensing

15.5.2 Filtering LiDAR Point Clouds

15.5.3 DEM Interpolation Methods

- Bilinear
- Inverse distance weighted
- Cubic spline
- Kriging
15.5.4 DEM Quality Assessment

- Types of errors
- Horizontal and vertical accuracy
- Spatial interpolation
- Processing voids
- Filling in sinks
- Quantitative description of error
- DEM differencing
- Surface parameters
- Geostatistical simulations of error
15.6 Land-Surface Parameters

15.6.1 First-Order Derivatives
15.6.2 Second-Derivatives
15.6.3 Statistical Parameters
15.6.4 Climatological Parameters
15.6.5 Hydrological Parameters

15.7 Land-Surface Objects

15.7.1 Terrain Features
15.7.2 Form Elements
15.7.3 Hydrological objects
15.7.4 Landforms
15.7.5 Landscape Units

15.8 Mapping and Modeling Applications

15.8.1 Land cover
15.8.2 Geomorphological
15.8.3 Hydrological
15.8.4 Biological

16 Books

For the latest in terrain analysis textbooks, go to the following publishers Websites and search using the appropriate key phrases.

http://www.crcpress.com
http://www.wiley.com
//www.springer.com
References


Course title and number: Terrain Analysis and Mapping, Geography 477, 4 Credit Hours
Term (e.g., Fall 200X): Fall 2015
Meeting times and location: Tuesday and Thursday, location TBA

Course Description and Prerequisites
Introduces students to the field of terrain analysis (geomorphometry), that represents the science of quantitative land-surface characterization. This course focuses on the fundamental principles of terrain analysis, theory and concepts of land-surface and dynamics, software and digital terrain modeling, production of land-surface parameters and objects, and terrain analysis applications. Prerequisites: GEOG 361, GEOG 390 or equivalents, or approval of the instructor.

Course Objectives
This course provides students exposure to the field of geomorphometry. Students will receive an introductory understanding of the science of quantitative land-surface analysis and modeling. Specifically, the course emphasizes various topics categorized as theoretical and conceptual issues, software analytical capabilities, digital terrain modeling an assessment, computation of land-surface parameters and objects, terrain mapping applications, and landscape-evolution simulation. It emphasizes mastering the theoretical and fundamental principles of geomorphometry, and the utilization of geospatial technologies and analytical methods for landscape characterization. Students will receive exposure to the latest issues, information technologies, and application perspectives. Lectures, classroom discussions, reading assignments, and laboratory exercises will provide students with hands-on experience and problem-solving experience.

Learning Outcomes
At the end of the course, the student will be able to:
- Describe the complex nature of topographic evolution.
- Define the advantages and limitations of utilizing geospatial software technologies.
- Use software and develop a reliable digital elevation model
- Use software to generate land-surface parameters.
- Use software to generate land-surface objects.
- Synthesize technical and application domain knowledge to address mapping problems.
- Interpret results within the context of a problem.
- Apply technical skills to solve a problem.

Instructor Information
Name: Dr. Michael P. Bishop
Telephone number: (979) 845-7998
Email address: michael.bishop@tamu.edu
Office hours: Tuesday and Thursday 2:00-4:00, Other times by appointment
Office location: O&M 707E

Textbook and/or Resource Material
Grading Policies

<table>
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<tr>
<th>Assignments</th>
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<th>Percentage</th>
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<tr>
<td>Mid-Term examination</td>
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<td>30</td>
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<tr>
<td>Final Examination</td>
<td>300</td>
<td>30</td>
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<tr>
<td>Laboratory Exercises</td>
<td>400</td>
<td>40</td>
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<tr>
<td><strong>Total Points</strong></td>
<td><strong>1000</strong></td>
<td><strong>100</strong></td>
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</table>

Students will be graded based upon their performance on examinations and completion of laboratory exercises. Final grades will be determined by relative ranking of cumulative point scores. This usually equates to a scale of 90-100%(A), 80-89%(B), 70-79%(C), 60-69%(D), and <= 59%(F).

Attendance and Make-Up Policies

Lectures will be given for each topic covered in the course. In addition, students will be responsible for reading assigned book chapters to prepare for lectures. Lecture material frequently consists of information not found in the textbook. Consequently, it is essential that students read assigned chapters and attend all lectures. Reading assigned chapters before class facilitates questions and classroom participation. Given the aforementioned nature of information dissemination, it is essential that students take detailed notes during class lectures. Students not able to attend lecture should contact the professor and/or students regarding presented information. Students will be tested on lecture material and all assigned readings.

All students will be required to complete laboratory exercises and take examinations. Collectively, students will take two exams and be tested on various terrain analysis topics. These examinations will only cover material from the preceding section of the course. In general, late laboratory exercises will not be accepted and there will be **NO MAKEUP EXAMS** !!, unless a student has an excused absence.

Students should familiarize themselves with student rule 7 at [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07).

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Exam/Lab</th>
<th>Required Reading</th>
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<tr>
<td>01</td>
<td>Introduction &amp; Principles</td>
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<td>Chapter 1</td>
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<td>02</td>
<td>Theory &amp; Concepts</td>
<td>Lab 1</td>
<td>Chapter 19</td>
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<td>03</td>
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<td>Lab 2</td>
<td>Chapter 2</td>
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<td>04</td>
<td>The Software Landscape</td>
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<td>Chapter 10</td>
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<td>05</td>
<td>Terrain Modeling Data Sources</td>
<td>Lab 3</td>
<td>Chapter 3</td>
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<td>06</td>
<td>Terrain Modeling Interpolation</td>
<td>Midterm Exam</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>07</td>
<td>Terrain Modeling Error &amp; Quality</td>
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<td>Chapter 5</td>
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<td>08</td>
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<td>Lab 4</td>
<td>Chapter 6</td>
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<td>Chapter 9</td>
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<td>Chapter 20, 21, 22</td>
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<tr>
<td>13</td>
<td>Terrain Mapping Applications</td>
<td>Lab 6</td>
<td>Chapter 23, 25, 26</td>
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</tr>
<tr>
<td>15</td>
<td>Final Exam week</td>
<td>Final Exam</td>
<td></td>
</tr>
</tbody>
</table>

Other Pertinent Course Information
Laboratory Exercises

Undergraduate students must attend a scheduled laboratory meeting time and allocate additional laboratory time (approximately 5-15 hours) to work on, and complete laboratory assignments in the course. Laboratory exercises vary in length and are designed to expose students to fundamental concepts in terrain analysis that reinforce lecture material. Laboratory assignments are also designed to provide students with basic technical training and problem-solving experience. Students will usually have 2 weeks to complete each exercise. All exercises should be submitted to the laboratory instructor. Hand-written work will not be accepted. In general, late laboratory assignments will not be accepted, except for an excused absence.

The course laboratory exercises are as follows:

- Digital elevation model generation
- Digital elevation model error assessment
- Land-surface parameters
- Land-surface objects
- Land cover mapping
- Geomorphological mapping

Topical Outline

Principles of Geomorphometry
- Sampling the Land Surface
- Generating a Surface Model
- Correcting Errors and Artifacts
- Deriving land-Surface Parameters and Objects
- Mapping Applications using Parameters and Objects
- Landscape simulations using Parameters and Process Mechanics

Theory and Concepts
- Lithospheric Processes
- Systems Coupling and Feedback
- Controlling factors
- Process mechanics
- Process regime
- Scale and scale dependence
- Conceptual models of land surface
- Terrain Complexity
- Surface deformation
- Surface parameters
- Lithology
- Geologic and topographic structure
- Terrain features and landforms

Geodesy and Representation
- Earth Geometry and Topography
- Mathematical Models
- Digital Models
- Sampling and Scale

The Software Landscape
- Digital Image Processing Systems
- Geographic Information Systems
- Hydrology Software Systems
- Geomorphometry Software Systems

Digital Terrain Modeling
- Sources of Topographic Data
- Filtering LiDAR Point Clouds
- DEM Interpolation Methods
- DEM Quality Assessment

Land Surface Parameters
- First-Order Derivatives
- Second-Order Derivatives
- Statistical Parameters
- Climatological Parameters
- Hydrological Parameters

Land-Surface Objects
- Terrain Features
- Form Elements
- Hydrological objects
- Landforms
- Landscape Units

Mapping and Modeling Applications
- Land cover
- Geomorphological
- Hydrological
- Ecological
- Landscape

Americans with Disabilities Act (ADA)
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Academic Integrity

Academic dishonesty is regarded to be a serious offense by the University, the Department of Geography, and the faculty. Academic dishonesty will result in a course grade of failure, regardless of the form of dishonesty. These include, but are not limited to, copying of laboratory assignments, copying of exam answers, plagiarism and use of Internet materials (not referenced) in assignments.

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

"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.

Form Instructions

1. Course request type:
   - [ ] Undergraduate
   - [X] Graduate
   - [ ] First Professional (DO, MD, JD, Ph.D, DPhil)

2. Request submitted by (Department or Program Name):
   Education for Healthcare Professionals

3. Course prefix, number and complete title of course:
   HCP 551: Healthcare Quality Improvement and Information

4. Catalog course description (not to exceed 50 words):
   Overview of health care from the viewpoint of quality improvement and health care
   information; using the sciences of quality measurement and improvement in conjunction
   with information science to propose a quality improvement initiative; legal and ethical
   implications of current trends in information technology and safety.

5. Prerequisite(s):
   Cross-listed with: NURS 551
   Stacked with:

6. Is this a variable credit course?
   - [ ] Yes
   - [X] No
   If yes, from ___ to ___

7. Is this a repeatable course?
   - [ ] Yes
   - [X] No
   If yes, this course may be taken ___ times.

8. Will this course be repeated within the same semester?
   - [ ] Yes
   - [X] No

9. Will this course be submitted to the Core Curriculum Council?
   - [ ] Yes
   - [X] No

10. How will this course be graded:
    - [X] Grade
    - [ ] S/U
    - [ ] P/F (CL/BD)

11. This course will be:
    a. required for students enrolled in the following degree program(s) (e.g., B.A. in History)
       MS in Education for Healthcare Professionals
    b. an elective for students enrolled in the following degree program(s) (e.g., M.S. in Geography)

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

13. Prefix: HCP
    Course #: 551
    Title: HEALTHCARE QUAL IMPROV AND INFO

<table>
<thead>
<tr>
<th>Unit</th>
<th>Lab</th>
<th>Other</th>
<th>Semester</th>
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<th>Admin Unit</th>
<th>Acad. Year</th>
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<td>15 - 16</td>
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</tbody>
</table>

Approval recommended by:

[Signatures and dates]

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu.
Curricular Services – 07/14
Course title and number  Healthcare Quality Improvement and Informatics—NURS/HCPI 551
Term  Summer 2015
Meeting times and location  Online/3 Credit Hours

Course Description
This course provides an overview of health care from the viewpoint of quality improvement and health care informatics. The student will use the science of quality measurement and improvement in conjunction with information science to propose a quality improvement initiative. The legal and ethical implications of current trends in information technology and safety are discussed. Cross-listed with NURS 551.

Learning Outcomes
The student will demonstrate the use of systems-based practice and health information technology to improve quality patient care. Students will utilize quality improvement measurement tools for changes to systems to improve quality, safety, and patient outcomes. The student will describe important epidemiology and statistical concepts necessary for interpreting data and literature. Students will select tools for evaluating evidence in health professions literature. The student will recognize ethical issues and legal implications of health informatics and quality improvement.

Instructor Information
Name  Alison Pitman, MSN, RN, CPN
Telephone number  979-436-0140
Email address  pitman@tamhsc.edu
Office hours  By appointment
Office location  HPEB 3020
  8447 Hwy 47
  Bryan, TX
  77807

Textbook and/or Resource Material

Institute for Healthcare Improvement-online modules
http://www.ihi.org/education/ihopenschool/Pages/default.aspx

Other articles/course materials can be found on Blackboard.
Grading Policies

The final course grade will be based on the following:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>30%</td>
</tr>
<tr>
<td>Participation Grade for Discussion Boards</td>
<td>15%</td>
</tr>
<tr>
<td>Innovation Proposal Assignment 1: Discussion Board</td>
<td>10%</td>
</tr>
<tr>
<td>Innovation Proposal Assignment 2: Annotated Bibliography</td>
<td>20%</td>
</tr>
<tr>
<td>Innovation Proposal Assignment 3: Clinical Problem Paper</td>
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</table>

The grading scale for this course is as follows:
Only the grades of A, B, C are acceptable for graduate credit in this course in the EDHP program. Nursing students must maintain a grade of "B" or better. Graduate students must maintain a grade point (GPR) of 3.00 average for all courses listed on the degree plan.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
</tr>
<tr>
<td>F</td>
<td>Below 70</td>
</tr>
</tbody>
</table>

Attendance and Make-up Policies

All assignments are to be submitted within the stated deadlines as listed under the Assignments tab in Blackboard. All written assignments will use APA formatting in substance and style befitting graduate level writing.

Late Work Policy: Late work will be accepted without penalty through individual negotiations with assigned faculty at least 24 hours prior to the due date and in accordance with TAMU's excused absence policies. The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence.

Please review the Student rule 7 for university excused absences, attendance and make-up policies at http://student-rules.tamu.edu/rule07.

Course Topics, Calendar of Activities, Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Essence of Improvement</td>
<td>• IHI Module QI 101: Fundamentals of Improvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• IHI Module QI 102: The Model for Improvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• IHI Module QI 103: Measuring for Improvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sollecito &amp; Johnson Ch. 2</td>
</tr>
<tr>
<td>2</td>
<td>Quality Improvement Process</td>
<td>• IHI Module QI 104: The Life Cycle of a Quality Improvement Project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• IHI Module QI 105: The Human Side of Quality</td>
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<tr>
<td></td>
<td></td>
<td>Improvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IHI Module QI 106: Mastering PDSA Cycles and Run Charts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Sollecito &amp; Johnson, Ch. 3</td>
</tr>
<tr>
<td>3</td>
<td>Patient Safety Innovation Assignment 1 (Discussion Board) due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IHI Module PS 100: Introduction to Patient Safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IHI Module PS 101: Fundamentals of Patient Safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IHI Module PS 102: Human Factors and Safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IHI Module PS 103: Teamwork and Communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Sollecito &amp; Johnson Ch. 5</td>
</tr>
<tr>
<td>4</td>
<td>Culture of Safety</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IHI Module PS 105: Communicating with Patients after Adverse Events</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IHI Module PS 106: Introduction to the Culture of Safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IHI Module QCV 101: Achieving Breakthrough Quality, Access, and Affordability</td>
</tr>
<tr>
<td>5</td>
<td>Role of HIT in CQI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Sollecito &amp; Johnson Ch. 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Nelson &amp; Staggers: Complete Interactive Review for Unit 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Then Read Ch. 20 Nelson &amp; Staggers</td>
</tr>
<tr>
<td>6</td>
<td>Applications: Obstacles &amp; Opportunities Assignment 2: Annotated Bibliography: Examine the Evidence due</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Nelson &amp; Staggers Ch. 22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Other articles on BB</td>
</tr>
<tr>
<td>7</td>
<td>Telehealth &amp; Telemedicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Nelson &amp; Staggers Ch. 8</td>
</tr>
<tr>
<td>8</td>
<td>HITS in Decision Support &amp; Communication; Ethics of HITS, Informatics and CQI</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Nelson &amp; Staggers Ch. 3, 6, 19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Other articles on BB</td>
</tr>
<tr>
<td>9</td>
<td>Research Basics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Articles on BB</td>
</tr>
<tr>
<td>10</td>
<td>Assignment 3 due</td>
<td></td>
</tr>
</tbody>
</table>

**Other Pertinent Course Information**

**FERPA**

The Federal Education Rights & Privacy Act, requires that we advise students that by registering for this course, their HSC assigned e-mail address will be revealed to classmates and the instructor. By continuing your enrollment in the course you acknowledge your understanding of this policy.

**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](http://disability.tamu.edu).
## Unit Number and Topic

<table>
<thead>
<tr>
<th>Unit Number and Topic</th>
<th>Unit Objective</th>
</tr>
</thead>
</table>
| 1. The Essence of Improvement | 1. Discuss principles of quality improvement.  
2. Analyze principles of a "just culture" and discuss its relationship to examining healthcare errors  
3. Determine the role of the master's prepared health care professional in quality improvement and information technology including:  
a. Quality control officer  
b. Informatics specialist |
| 2. Quality Improvement Process | 1. Review common QI models including structure, process, and outcome indicators  
2. Discuss common QI methods and tools such as:  
a. Brainstorming  
b. Fishbone diagrams  
c. Flow charts  
d. PDSA, POCA, FOCUS-POCA  
e. Six Sigma  
f. Lean |
| 3. Patient Safety | 1. Examine National Patient Safety Goals and other regulatory standards such as:  
a. CMS core measures  
b. Pay for performance indicators  
c. Never events  
2. Verify methods of error analysis such as:  
a. Root Cause Analysis  
b. Failure Mode Effect Analysis |
| 4. Culture of Safety | 1. Apply techniques of HROs (high reliability organizations) to health care systems  
2. Examine QI indicators such as NDNQI and their relevance in a culture of safety  
3. Discuss the role of communication in a culture of safety (hand-off, chain of command, error disclosure)  
4. Determine the impact of fatigue and distractions on patient safety (fit for duty, alarm fatigue, etc.) |
| 5. Role of HIT in CQI | 1. Summarize information management systems in current health care delivery, including retrieval, evaluation, and application of data to patient care.  
2. Discuss data management methods in quality improvement such as:  
a. Collection tools  
b. Display techniques (e.g. hospital performance dashboard)  
c. Data and trend analysis  
d. Control charts  
3. Evaluate the role of simulation education in quality improvement |
| 6. Applications: Obstacles & Opportunities outcomes | 1. Assess current standardized terminology to document and analyze  
2. Determine regulatory requirements for electronic data monitoring |
Innovation Proposal Assignment

During this course, you will learn about the methods for initiating a change in your clinical area to improve practice and patient safety. The purpose of the project is to begin exploring a project that integrates the knowledge gained in graduate nursing courses to address a specific health education or clinical practice problem. You will begin a proposal for an innovative change related to quality improvement in your clinical area. Your project can be in the arena where you currently work, or it can be in an area where you plan on working in the future.

The objectives for this assignment are for the student to:

1. Identify area(s) in need of quality improvement in the student’s clinical arena.
2. Examine scholarly evidence and data to support the problem.
3. Describe the clinical problem and potential outcomes and/or implications in a clear, concise written format that incorporates socio-cultural factors, evidence-based practice, quality improvement principles, and best practice use of health care informatics.
4. Promote a professional environment that includes collaboration with peers, accountability, high-level communication skills, and scholarly writing using APA format.

The project is divided into three assignments:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Description</th>
<th>Due date and Percentage of Course Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1: Discussion Board: Develop your area of interest</td>
<td>Start exploring your clinical area of interest for a specific, measurable problem related to quality improvement. Consider the following questions when thinking about your topic: • What is the population of interest? What are their characteristics? • What is the setting? Is this where you currently work, or where you plan to work in the future?</td>
<td>Due: June 22, 2014 @ 11:59 p.m. Graded Discussion Board worth 10% of course grade</td>
</tr>
</tbody>
</table>
- What do you know about issues regarding quality of care and patient safety in this clinical area? What are some of the problems/challenges you are considering for your proposal?

On BlackBoard Discussion Board for this assignment, tell us about your clinical arena and your answers to the above questions. You will also be required to provide feedback for peers and their postings. A grading rubric for this assignment is posted on BlackBoard.

<table>
<thead>
<tr>
<th>Assignment 2: Annotated Bibliography; Examine the Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>After completion of Assignment 1, you should be able to narrow your search to one clinical problem in your area of interest that you want to explore. Now you need to examine the body of knowledge for evidence to support the need for a solution to this problem.</td>
</tr>
<tr>
<td>1. Search scholarly journals and documents in your clinical area for information about the presence and significance of your chosen problem.</td>
</tr>
<tr>
<td>2. Have any solutions already been proposed? Implemented? Were they successful? Do they translate well to your practice?</td>
</tr>
<tr>
<td>3. Select 7-10 articles that address your clinical problem and assemble them in an annotated bibliography in APA format.</td>
</tr>
<tr>
<td>A rubric for this assignment is posted on BlackBoard.</td>
</tr>
<tr>
<td>For information on APA format, consult the Publication Manual of the American Psychological Association (6th ed.) or the Purdue OWL resource website for APA format at <a href="https://owl.english.purdue.edu/owl/resource/560/01/">https://owl.english.purdue.edu/owl/resource/560/01/</a></td>
</tr>
<tr>
<td>A sample APA annotation can be found at <a href="https://owl.english.purdue.edu/owl/resource/614/03/">https://owl.english.purdue.edu/owl/resource/614/03/</a></td>
</tr>
</tbody>
</table>

| Due: July 13, 2014 @ 11:59 p.m. |
| Worth 20% of course grade |

<table>
<thead>
<tr>
<th>Assignment 3: Describe the project and potential implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using the resources you annotated in Assignment 2, write a paper describing the clinical problem and possible innovations to resolve it. In this paper you will want to:</td>
</tr>
<tr>
<td>- Describe the clinical problem and potential outcomes and/or implications in a clear, concise written format using data/evidence to support the scope of the issue and undesired outcomes associated with it.</td>
</tr>
<tr>
<td>- Address socio-cultural factors (are only certain cultural or socioeconomic groups affected? If so, who are those groups?)</td>
</tr>
<tr>
<td>- Are any of the learned quality improvement principles from this course applicable to the clinical problem? Describe.</td>
</tr>
<tr>
<td>- Are any of the best practices uses of health care applied?</td>
</tr>
</tbody>
</table>

<p>| Due: August 4, 2014 @ 11:59pm |
| Worth 25% of course grade |</p>
<table>
<thead>
<tr>
<th>care informatics applicable to the problem? Describe.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Present any solutions already proposed in the literature and whether or not they were successful, repeatable, and translatable to your practice.</td>
</tr>
</tbody>
</table>

A rubric for this assignment is posted on BlackBoard.
Texas A&M University
Departmental Request for a New Course
Undergraduate ♦ Graduate ♦ Professional
• Submit original form and attach a course syllabus.

Form Instructions
1. Course request type:
   □ Undergraduate  ☑ Graduate  □ First Professional (DDS, MD, JD, PharmD, DVM)

2. Request submitted by (Department or Program Name):
   Health and Kinesiology Department

3. Course prefix, number and complete title of course:
   KINE 614 External Research Fund Development

4. Catalog course description (not to exceed 50 words):
   Preparation of external research funding applications with emphasis on NIH proposals
   and other external funding sources; methods and commonly used processes of federal grant review and the funding decision process.
   Prerequisite: Graduate Classification

5. Prerequisite(s):
   Graduate Classification

   Cross-listed with:  none  Stacked with:  none
   Cross-listed courses require the signature of both department heads.

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

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

8. Will this course be submitted to the Core Curriculum Council?
   □ Yes  ☑ No

9. How will this course be graded?  ☑ Grade  □ S/U  □ P/F (CLMD)

10. 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)
   PhD in Exercise Physiology and PhD in Health Education. Students in other PhD programs will be enrolled with permission of
   instructor.

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

12. ☑ I verify that I have reviewed the FAQ for Export Control Basics for Distance Education (http://vpr.tamu.edu/resources/export-
    controls/export-controls-basics-for-distance-education).

13. Prefix  Course #  Title (excluding punctuation)

   KINE  614  EXTERNAL RESEARCH FUND DEVELOPMENT

   Lect.  Lab  Other  SCH  CIP and Fund Code  Admin. Unit  Acad. Year  Cal. Code
   3.00  0.00  3.00  3105050014  1402  16  -  17  0  0  3  6  3  2

   Approval recommended by:
   Dr. R. Kreider
   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  Date

   Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu.
   Curricular Services – 07/14

   Level 6

   Dr. George Cunningham
   Chair, College Review Committee  Date

   Dr. George Cunningham
   Dean of College  Date

   Dr. Mark Zoran
   Chair, GC or UCC  Date

   Effective Date
Course title and number: EXTERNAL RESEARCH FUND DEVELOPMENT – KINE 614
Term (e.g., Fall 20XX): Spring 20XX
Meeting times and location: M 2-5 pm, BLOCKER 313

Course Description and Prerequisites
Preparation of external research funding applications with emphasis on NIH proposals and other external funding sources; methods and commonly used processes of federal grant review and the funding decision process. Prerequisite: Graduate Classification

Learning Outcomes or Course Objectives
1. At the end of this course, the student will synthesize and develop an NIH funding application; specifically, an F32 application.
2. At the end of this course, the student will apply these grant writing tools to external funding proposals for a variety of governmental, industry, and foundation purposes.
3. At the end of this course, the student will describe the role that external fund development plays in the academy, as well as its role in science.
4. At the end of this course, the student will identify the role of peer review in grant funding and the process of grant review in assigning funding scores.

Instructor Information
Name: Dr. J. Timothy Lightfoot
Telephone number: 979-845-8744
Email address: Tlightfoot@hkn.tamu.edu
Office hours: 9:30-11 am M-Thurs.
Office location: 356 Blocker

Textbook and/or Resource Material

Grading Policies
The grade in this course will be based on two items: 1) the final priority score of the F32 proposal that each student will complete; and 2) participation in class discussion, activities, and study section reviews. Both of these items are the result of the semester long development of an appropriate NIH proposal (e.g. F32) and participation in mock Study-Section grant review sessions. The development of the NIH proposal will consist of weekly submissions and feedback from the Instructor.

1) Priority Score: At the end of the course, your grant proposal will receive a final priority score from the Instructor. This priority score will be based on two initial priority scores (there will be at least two resubmit periods for improvement of the score). You will be awarded the following number of points, based on this score:

If your priority score = 10 – 25 then you get _________ points:
90
2) Participation: At the end of the course, you will receive a grade indicative of your participation in the course. This score has three possible values: 10 points for participation, 5 points for only some participation, and 0 points if you don’t participate. BE AWARE that participation also includes timeliness with your assignments including your grant sections and your reviews.

Your final grade will be determined using a 10% scale based on the total possible points of 100. Thus, “A” = 90-100 points, “B” = 80-89 points, “C” = 70-79 points, “D”=60-69 points, and “F”= 59 points or less.

There is no attendance policy in this class and assignments are expected to be submitted on the dates indicated on the syllabus (this is part of the Participation grade).

Attendance and Make-up Policies
Attendance in this course is governed by Student Rule 7 (http://student-rules.tamu.edu/rule07). As such, attendance is the personal responsibility of the student. It is expected that if the student is absent from the course, the student will notify the instructor and will make all efforts to attend class during the review sessions where each student will play a major role in the grant review process. Assignments missed as a result of attendance will be made-up after consultation with instructor.

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Other items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Funding orientation/developing an idea</td>
<td>Submit Major Topic for Grant Development</td>
</tr>
<tr>
<td>2</td>
<td>Types of Funding</td>
<td>Submit Specific Aims section</td>
</tr>
<tr>
<td>3</td>
<td>Development of the Specific Aims</td>
<td>Submit Scientific Plan section</td>
</tr>
<tr>
<td>4</td>
<td>Significance/Innovation</td>
<td>Submit Scientific Plan Innovation sections</td>
</tr>
<tr>
<td>5</td>
<td>Scientific Plan</td>
<td>Submit Budget and Environment sections</td>
</tr>
<tr>
<td>6</td>
<td>Budget/Environment/minor things that are actually major things</td>
<td>Submit grant before beginning of spring break</td>
</tr>
<tr>
<td>7</td>
<td>Compliance Issues: Human Subjects, Animal Models, and Biosafety</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>The process of Grant review</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Study Section (IRG) assignment/review protocols and mechanisms</td>
<td>Initial reviews must be completed and submitted by XX/XX/XXXX (5 pm)</td>
</tr>
<tr>
<td>10</td>
<td>Study Sections meet at assigned times</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Summary sheets reviewed / How to prepare resubmits</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Further development of your grant after the first review</td>
<td>Resubmits must be in by XX/XX/XXXX (5 pm); proposals assigned to IRGs; IRG reviews due by XX/XX/XXXX (5 pm)</td>
</tr>
<tr>
<td>13</td>
<td>Study Sections meet again to consider resubmitted grants</td>
<td></td>
</tr>
</tbody>
</table>
14 Summary sheets reviewed / Debrief
15 Final Review of course and submitted grants
(serves as the Final Exam and is part of the final grant submission)

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."
March 16, 2015

To: Richard Kreider, Head
   HLKN/CEHD

From: Yeping Li, Head
      TLAC/CEHD

About: Letter of support for new course (KINE 614 - External Research Fund Development)

The Department of Teaching, Learning and Culture has reviewed the proposed course, (KINE 614 - External Research Fund Development), and do not find it as conflicting with the course we offer in grant writing. We support its approval by the GIC and the University.
March 25, 2014

Richard B. Kreider, PhD, FACSM, FISSN, FACN
Professor & Head
Thomas A. & Joan Read Endowed Chair for Disadvantaged Youth Director,
Exercise & Sport Nutrition Lab
Department of Health & Kinesiology

Dear Dr. Kreider:

Thank you for contacting the Department of Educational Administration and Human Resource Development regarding the relationship between the proposed grant writing course KINE 614 and our grant writing course EHRD 679 as part of the curricula offered by your department and the course offered by our department. We appreciate the opportunity to review the syllabus for the proposed course KINE 614 and to interact with you regarding this important curriculum development matter.

The similarity between EHRD 679 and KINE 614 appears to create situations where overlap could exist between courses offered by our respective departments. As promised in my e-mail communication with you yesterday, I would like to inform you that the Executive Committee comprised of Program Leaders in the Department met today March 25, 2015 and discussed the syllabus that you shared with me. I am pleased to inform you that the faculty who reviewed your course syllabus and the EC members were very impressed with your course syllabus and requested me to inform you that you should go ahead and submit KINE 614 as a new course; however, they requested that there should be distinct differences between the two courses. Faculty who reviewed your course syllabus appreciated the fact that while we offer a grants and contracts course in the Department, the focus of KINE 614 will be on NIH grants and will mainly enroll HLKN students, and the research focus will be basic and applied science/health grants.

Thank you again for the opportunity to comment about the proposed KINE course relative to the grants and contracts courses offered by our Department.

Sincerely,

Fredrick M. Nafukho

Fredrick M. Nafukho, PhD, MDP’13
Professor and Department Head
Texas A&M University

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

Form Instructions:
1. Course request type:
   - [ ] Undergraduate
   - [ ] Graduate
   - [ ] First Professional
   - [ ] Second Professional

2. Request submitted by (Department or Program Name):
   Department of Oceanography

3. Course prefix, number and complete title of course:
   OCNG 669 Python for Geosciences

4. Catalog course description (not to exceed 50 words):
Core language Python programming, scientific programming analysis methods, analysis of large geophysical data sets, plotting geophysical data, interpolation.

5. Prerequisite(s):

   graduate classification

   Cross-listed with:       Stacked with: OCNG 469

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

6. Is this a variable credit course?
   - [ ] Yes
   - [X] No
   If yes, from ________ to ________

7. Is this a repeatable course?
   - [ ] Yes
   - [X] No
   If yes, this course may be taken ________ times.

   Will this course be repeated within the same semester?
   - [ ] Yes
   - [X] No

8. Will this course be submitted to the Core Curriculum Council?
   - [ ] Yes
   - [X] No

9. How will this course be graded:
   - [X] Grade
   - [ ] S/U
   - [ ] P/F (CLAD)

10. 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 geology)

   M.S., Ph.D. in all Geosciences majors.

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

12. [X] I verify that I have reviewed the FAQ for Export Control Basics for Distance Education (http://vpr.tamu.edu/resources/export-control-basics-for-distance-education).

13. Prefix  Course #  Title (excluding punctuation)
    OCNG  669  Python for Geosciences

<table>
<thead>
<tr>
<th>Lec.</th>
<th>Lab</th>
<th>Other</th>
<th>SCH</th>
<th>CRIP and Fund Code</th>
<th>Admin. Unit</th>
<th>Acad. Year</th>
<th>HCL Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00</td>
<td>1.00</td>
<td>0.00</td>
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   Approval recommended by:
   Department Head or Program Chair (Type Name & Sign) Date 5/14/15
   Chair, College/Copy Committee Date 5/14/15
   Dean of College Date
   Chair, GC or UCC Date 6-19-15

   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 – 07/14
Special Topics in Python for Geosciences
3 credits

Instructor: Robert Hetland
Office: O&M Building Room 618d Phone: 458-0096
E-mail: hetland@tamu.edu

Description:
This course provides an introduction to data analysis and graphical representation of oceanographic data using the Python programming language. Topics include how to read and write data using standard formats; modern programming techniques including object oriented programming, version control systems, and the model-view-controller paradigm; plotting geophysical data using various projections, best practices in plotting, and interactive plotting.

Prerequisites: Graduate: None; Undergraduate: U3 or U4 status.

Learning outcomes:
Students will compile and run parallel codes for use on distributed memory supercomputers, use batch scheduling of computer programs, and identify and fix problems in standard supercomputer management software. Students will create programs that use multiple processors using the Message Passing Interface. Students will analyze large data sets. Students will collaborate on a class project using standard tools such as Version Control Systems for maintaining collaborative software projects. Students will create scripts in the Python programming language to solve research problems.

Course Outline:

Week 1-2: Core language
Overview of the standard python programming language, standard data containers (lists, tuples, dictionaries, etc), importing packages, for/while loops, and functions.

Week 3-4: Numerical python
Using numpy and scipy, vector operations, and best practices for large numerical datasets.

Week 5: Basic plotting in python
Overview of the matplotlib plotting package.

Week 6-7: Plotting on the earth
The Basemap package, the proj3 library, and other geospatial applications.

Week 8: NetCDF
Reading and writing NetCDF files locally and over the Internet.

Week 9-10: Object Oriented programming and data structures
Object oriented programming (OOP) techniques, and good programming practices. OOP as a surrogate for data structures.
Week 11: Wrapping FORTRAN code
Wrapping FORTRAN code using f2py, and other numerical performance code techniques.

Week 12: Creating and distributing large projects
How to create and distribute a large python package using standard techniques, like distutils and github.

Week 13-14: Group project presentations.

Prerequisites:
None, however, basic understanding of some programming language is strongly recommended.

Grading:
Homework will be assigned approximately every other week. Students will be expected to bring unique
problems to the class, so that the homework can involve real applications. There will be no exams.
Undergraduate grading: Homework will account for 75% of the grade, class participation 25%.
Undergraduate students are welcome to participate in the group projects, but it is not required.
Graduate grading: Graduate students will be expected to also work on a group project, with results
presented in class in the final weeks of the course, and code distributed publicly; homework will account
for 50% of the grade, class participation 25%, and the group project 25%.
The grading scale for all students is 90-100% = A, 80-89% = B, 70-79% = C, etc.

Text:
There will be no text for this class. Online resources will be sufficient.

Attendances:
Please inform me before any planned absences, and I will try to be accommodating. University excused
absences are always accepted.

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comprehensive civil rights protection for persons with disabilities. Among other things, this legislation
requires that all students with disabilities be guaranteed a learning environment that provides for
reasonable accommodation of their disabilities. If you believe you have a disability requiring an
accommodation, please contact the Department of Student Life, Services for Students with Disabilities in
Room B118 of Cain Hall. The phone number is 845-1637.

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quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because
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expressly granted.

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