New Core Component Proposal

Date Submitted: 05/23/18 10:03 am

Viewing: GEOG 215-C : Geospatial Cornerstone

Last edit: 05/23/18 10:03 am

Changes proposed by: daniel.goldberg

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel Goldberg</td>
<td><a href="mailto:daniel.goldberg@tamu.edu">daniel.goldberg@tamu.edu</a></td>
<td>979-845-7141</td>
</tr>
</tbody>
</table>

Course Prefix: GEOG

Academic Level: UG

Complete Course Title: Geospatial Cornerstone

Abbreviated Course Title: GEOSPATIAL CORNERSTONE

Crosslisted With:

Semester Credit: 1

Hour(s):

Proposal for:

Communication Designation

Number of Sections per Academic Year: 3

Enrollment per Section (Avg.): 25

Are the graded writing and presentations evaluated by any assistants (i.e., GATs or undergraduates)?

No

If you are working with assistants (graduate or undergraduate included), briefly explain how you will monitor and supervise their work and what roles they will play in the teaching of communication.

Not applicable

All syllabi should contain one of the following statements. Select the statement that applies to your course.

To pass this course you must pass the C component.

List all graded writing and speaking assignments along with the approximate word count or length of time speaking of each. (Note that for most 12-point fonts there are about 250 words on a page if double-spaced and 500 if single-spaced.) In addition, list the percentage of the final grade each assignment represents.

<table>
<thead>
<tr>
<th>Writing/Speaking Assignment</th>
<th>Word count</th>
<th>Length of Speaking Assignment</th>
<th>% of final grade</th>
<th>Collaborative?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaking Assignment: Week 03; Topic: Industry Presentation; Type: Presentation + Writing + Discussion</td>
<td>250</td>
<td>5</td>
<td>11.6</td>
<td>No</td>
</tr>
<tr>
<td>Weekly Writing Assignment: Week 05; Topic: Resume &amp; Cover Letter; Type: Writing + Discussion</td>
<td>1000</td>
<td>0</td>
<td>15.5</td>
<td>No</td>
</tr>
<tr>
<td>Weekly Writing Assignment: Week 07; Topic: Career Plan V1; Type: Writing + Discussion</td>
<td>750</td>
<td>0</td>
<td>11.6</td>
<td>No</td>
</tr>
</tbody>
</table>
### Writing/Speaking Assignment

<table>
<thead>
<tr>
<th>Description</th>
<th>Word count</th>
<th>Length of Speaking Assignment</th>
<th>% of final grade</th>
<th>Collaborative?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaking Assignment: Week 09; Topic: Expert Presentation; Type: Presentation + Writing + Discussion</td>
<td>250</td>
<td>5</td>
<td>11.6</td>
<td>No</td>
</tr>
<tr>
<td>Speaking Assignment: Week 12; Topic: Networking Presentation; Type: Presentation + Writing + Discussion</td>
<td>250</td>
<td>5</td>
<td>11.6</td>
<td>No</td>
</tr>
<tr>
<td>Speaking Assignment: Week 13; Topic: Teamwork Presentation; Type: Presentation + Writing + Discussion</td>
<td>250</td>
<td>5</td>
<td>11.6</td>
<td>Yes</td>
</tr>
<tr>
<td>Weekly Writing Assignment: Week 14; Topic: Career Plan V2; Type: Writing + Discussion</td>
<td>750</td>
<td>0</td>
<td>11.6</td>
<td>No</td>
</tr>
</tbody>
</table>

- **Add word count of each graded writing assignment and put total word count here.** 3500
- **Add length of each graded speaking assignment and put total presentation time here.** 20
- **Add the percentage of final grade based on writing/speaking and put the total percentage here.** 85%

**Any combination is allowed, as long as the total meets the requirement.**

**Explain how collaboration is monitored to ensure equal participation.**

- This course will follow the guidance of the TAMU University Writing Center for monitoring collaboration. Specifically, we will follow the guidance of the University of Michigan Sweetland Center for Writing:
  1. The instructor will check in with student groups and individuals at key points.
  2. Soon after the assignment is assigned, each student group will submit a "Group Work Plan" including a plan specifying how and when they will meet, who will complete what tasks, and how they will exchange drafts or files (Google Docs? Dropbox?).
  3. Students will submit portions of the assignment or progress reports along the way.
  4. Each student will be informed that the instructor will solicit their input in determining each group member’s grade, and the instructor will distribute the evaluation form before they begin working together.

**Describe the formative feedback provided on student writing and speaking, especially on major assignments.**

**Writing:**

- This course will follow the guidance of the TAMU University Writing Center for formative feedback. Specifically, the instructor will use several tools to point out tendencies and patterns that the writer can then further identify and fix rather than to comment on every error or infelicity:
  1. The instructor will provide comments on student work while still in draft form.
  2. Student peer groups will provide comments on student work while still in draft form.
  3. The instructor will provide feedback using the rubrics developed for this course.

**Speaking:**

- This course will follow the guidance of the TAMU University Writing Center for formative feedback. Specifically, the instructor will use several tools to point out tendencies and patterns that the speaker can then further identify and fix rather than to comment on every error or infelicity:
  1. The instructor will provide comments on student work while still in draft form.
  2. Student peer groups will provide comments on student work while still in draft form.
  3. The instructor will provide feedback using the rubrics developed for this course.
  4. Student peer groups will provide feedback using the rubrics developed for this course.
Describe how you provide writing and speaking instruction.

This course will utilize the resources of the TAMU University Writing Center to provide speaking instruction to enrolled students. In particular, the following strategies will be utilized (Adapted from "Best Practices for W&C Courses"):

1. Show the value good communication. Students will be reminded from time to time that the instructor is willing to spend time on communication skills because they are important to their professional development. As students read course material or listen to oral performances, the instructor will comment on the quality of the writing or speaking, and encourage them to develop their own abilities.

2. Demonstrate what is meant by good writing and speaking. The instructor will review the basics of good writing and speaking, as she/he understands them, in order to demonstrate that not everyone has the same standards for good writing or speaking and to demonstrate that many conventions change with the audience, type, and purpose of a document. The instructor will make clear her/his bottom-line issues, what her/his pet peeves might be (for example, sentences that end in prepositions), and how these expectations affect her/his evaluation of student writing. Pet peeves and expectations, that every essay needs a thesis statement or every paragraph needs a topic sentence for example, will be explained explicitly.

3. Remind students that good writing and speaking vary with the rhetorical situation. There is no universal, unchanging formula for good communication. Even the "rules" of grammar and punctuation can be flexible and are best thought of as conventions. The best communicators develop an understanding of the constraints under which they work in each situation and accommodate their style to those constraints. To enforce this point, the instructor will create assignments that require students to adjust to different situations. As assignments are introduced, the instructor will spend a few moments discussing audience expectations, the constraints and expectations of the document type, and other matters that can affect the finished product.

4. Demystify the composing process. The instructor will use every opportunity to demystify the composing process and show that writing and speaking are skills that can be learned through effort and practice. The instructor will look to her/his own advice and experience as a writer and speaker to provide examples of how a real communicator in the real world manages this complex and challenging task. Where, when, or how has the instructor struggled with writing? Does the instructor get nervous before a presentation? Does the instructor have peers review her/his most important work? Does the instructor solicit editing advice?

5. Provide many and varied opportunities for practice. Students will be asked to present information to themselves and peers several times in order to reinforce concepts, organize thoughts, encourage critical thinking, and develop fluency.

6. All graded work will begin with a written prompt that includes the evaluation criteria.

7. Provide ample formative feedback in many different forms. Feedback will be provided during the composing process on drafts and/or outlines, and as a final evaluation on finished works. A grading rubric will be used during the composing and prewriting stages so that students can assess their own and their peers' efforts. When students are working on a similar assignment, the instructor will randomly read and publicly assess samples, and/or models from previous classes. All students, even those who feel confident, will be encouraged to use the services of consultants at the University Writing Center.

8. Make sure assistance is available. Students will know that if they are blocked or confused, help is available. Students will also know that even the best writers and presenters receive feedback from others to guide revision.

Additional Comments

Please ensure that the attached course syllabus sufficiently and specifically details the appropriate core objectives.
GEOG 215: GEOSPATIAL CORNERSTONE

Instructor: Dan Goldberg, daniel.goldberg@tamu.edu | Office Hours: TBD or by appt.

Lecture: TBD TBDam - TBDam @TBD

PreReqs: None.

Catalog Description

Professional career options, methods, strategies and skills involved in successful career planning in the geospatial sciences; highlights high impact learning opportunities such as study abroad and internships and the development of scientific communication skills.

Course Description and Prerequisites

This class is an introduction to the professional career options, methods, strategies, and skills involved in successful career planning in the geospatial sciences. This class highlights high impact learning opportunities such as study abroad and internships and the development of scientific communication skills. Prerequisites: GEOG and GIST majors; sophomore classification or approval of instructor.

Learning Outcomes or Course Objectives
This course is designed to introduce students to career opportunities that are available across the geospatial industry including both the public and private sectors. The course will include an introduction to various means by which students can be best-prepared for obtaining professional employment in the geospatial industry and for ensuring a successful career, including the types of skills that required in different segments of the industry and how and where students can find instruction and practical experience to obtain them. This course will highlight how and why high impact learning experiences such as undergraduate research, internships, and study abroad are important components of a student's portfolio that will aide them in gaining professional employment before and following graduation. This course will provide training on effective writing and communication, and emphasize the importance of both as key aspects of successful careers in the geospatial industry.

At the end of this class, each student will be able to:

1. Enumerate and compare the types of jobs that are available in the geospatial industry, in both the public and private sectors;
2. Enumerate and evaluate the sets of geospatial skills required by different types of jobs, and develop an academic and extra-curricular plan to achieve those that are required for the types of professional employment that they desire;
3. Describe the application process for graduate and professional school, and develop a plan for improving the competitiveness of their application;
4. Develop an effective career plan including a reflection on the impact that internships and other high impact learning experiences may have on their job-seeking potential;
5. Prepare, present, and discuss the strengths of different resume styles and contents; and
6. Develop effective communication skills for geospatial information and topics in writing, visually, and in spoken presentations.

Email

All Texas A&M students should use their university-associated email accounts when emailing the instructor and teaching assistants.

Textbook and/or Resource Material

No required textbooks. Course readings will include online and other videos and resources and materials provided by the instructor.

Attendance and make-up policies

Attendance is mandatory for all classes and events. This course will follow the University's policy if a student cannot complete assigned activities by their deadlines due to excused absences.

Grading Policies

Grading for this course will be based on completion of the University "C" course requirements. 70% of the assignments for the course will include writing assignments totaling at least 1250 words. This writing will be complemented with a combination of oral presentation slides, handouts, scripts, web sites, and posters which accompany an oral presentation. The course will also require "public speaking" which will be done in person and/or electronically, for example in video or podcast formats. Collaborative work (i.e., group assignments) will be counted as no more than 30% of a student’s grade, with the remaining 70% being individual work. Student assignments will be provided with formative feedback including review and assessment by the instructor as well as peer-review by fellow students. To pass this course you must pass the C component.

Grades will be calculated as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoughtful engagement in class discussions, including questions for speakers</td>
<td>15%</td>
</tr>
<tr>
<td>Writing and speaking assignments</td>
<td>85%</td>
</tr>
</tbody>
</table>
Grading Scale

The typical grading scheme for this course has the following cutoffs: ≥90% A, 80-89% B, 70-79% C, 60-69% D, <60% F. An average performance in the class will earn a satisfactory grade.

Academic Integrity

Aggie Code of Honor For many years Aggies have followed a Code of Honor, which is stated in this very simple verse: "An Aggie does not lie, cheat or steal or 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. For additional information please visit http://aggiehonor.tamu.edu.

Due Dates and Time Zones

All homework and other assignments will be due following the class that they were assigned, unless otherwise indicated on the assignment.

Texas A&M University Student Services

Texas A&M University offers a variety of student services to on-campus and online students. For more information, please visit http://distance.tamu.edu/Student-Services.

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, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Readings</th>
<th>Topic</th>
<th>Writing Assignment</th>
<th>Speaking Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>TBD</td>
<td>The Geospatial Industry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>TBD</td>
<td>Graduate School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>TBD</td>
<td>Public vs. Private</td>
<td></td>
<td>S03 (Ind.</td>
</tr>
<tr>
<td>04</td>
<td>TBD</td>
<td>The Hiring Process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>TBD</td>
<td>Resumes/Cover Letter</td>
<td>W05 - Resume + Cover Letter (Ind.</td>
<td>1000w)</td>
</tr>
<tr>
<td>06</td>
<td>TBD</td>
<td>Internships/Research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>TBD</td>
<td>Career Planning</td>
<td>W07 - Career Plan V1 (Ind.</td>
<td>750w)</td>
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<tr>
<td>08</td>
<td>TBD</td>
<td>Other HILEs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>TBD</td>
<td>Communicating Effectively</td>
<td></td>
<td>S09 (Ind.</td>
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<tr>
<td>Week</td>
<td>Readings</td>
<td>Topic</td>
<td>Writing Assignment</td>
<td>Speaking Assignment</td>
</tr>
<tr>
<td>------</td>
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<td>------------------------------</td>
<td>--------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>10</td>
<td>TBD</td>
<td>Scientific/Professional Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>TBD</td>
<td>Networking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>TBD</td>
<td>Public Speaking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>TBD</td>
<td>Effectiveness in a Team</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>TBD</td>
<td>Project Management</td>
<td>W14 - Career Plan Final</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Ind.</td>
<td>5m</td>
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</table>

**Totals**

<table>
<thead>
<tr>
<th></th>
<th>Individual Writing</th>
<th>Group Writing</th>
<th>Individual Speaking</th>
<th>Group Speaking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Words/Minutes</td>
<td>2500</td>
<td>250</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Points</td>
<td>2500</td>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Points</td>
<td>5500</td>
<td></td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

**Assignment Types and Weights**

<table>
<thead>
<tr>
<th>Style</th>
<th>Assignment Type</th>
<th>Words/Mins</th>
<th>Points</th>
<th>% Writing/Speaking Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Presentation</td>
<td>15</td>
<td>1500</td>
<td>27%</td>
</tr>
<tr>
<td>Individual</td>
<td>Writing</td>
<td>2500</td>
<td>2500</td>
<td>46%</td>
</tr>
<tr>
<td>Individual</td>
<td>Presentation Response</td>
<td>750</td>
<td>750</td>
<td>14%</td>
</tr>
<tr>
<td>Group</td>
<td>Presentation</td>
<td>5</td>
<td>500</td>
<td>9%</td>
</tr>
<tr>
<td>Group</td>
<td>Presentation Response</td>
<td>250</td>
<td>250</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>5500</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

**Writing & Speaking Instruction Methods**

This course will follow the "Best Practices for W & C Courses" from the TAMU University Writing Center for teaching writing and speaking.

**Grading Rubrics**

- Preparation - Pre-Class
- Participation - In-Class
- Presentations - Individual Assessment
- Presentations - Group Assessment
- Writing - Individual Assessment
- Writing - Group Assessment
- Teamwork - Individual Assessment
- Teamwork - Group Assessment

New Core Component Proposal

Date Submitted: 05/18/18 1:49 pm

Viewing: PHYS 328-C : Experimental Physics II

Last edit: 05/31/18 3:44 pm
Changes proposed by: skessler

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sherree Kessler</td>
<td><a href="mailto:skessler@tamu.edu">skessler@tamu.edu</a></td>
<td>979-458-5948</td>
</tr>
</tbody>
</table>

Course Prefix    PHYS
Academic Level   UG
Complete Course Title Experimental Physics II
Abbreviated Course Title EXPERIMENTAL PHYSICS II
Crosslisted With
Semester Credit  1
Hour(s)
Proposal for: Communication Designation

Communication Designation

Number of Sections per Academic Year  2  Enrollment per Section (Avg.) 16
Are the graded writing and presentations evaluated by any assistants (i.e., GATs or undergraduates)? No

If you are working with assistants (graduate or undergraduate included), briefly explain how you will monitor and supervise their work and what roles they will play in the teaching of communication.

N/A

All syllabi should contain one of the following statements. Select the statement that applies to your course.

- To pass this course you must pass the C component.

List all graded writing and speaking assignments along with the approximate word count or length of time speaking of each. (Note that for most 12-point fonts there are about 250 words on a page if double-spaced and 500 if single-spaced.) In addition, list the percentage of the final grade each assignment represents.

<table>
<thead>
<tr>
<th>Writing/Speaking Assignment</th>
<th>Word count</th>
<th>Length of Speaking Assignment</th>
<th>% of final grade</th>
<th>Collaborative?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral presentation</td>
<td>0</td>
<td>10</td>
<td>40</td>
<td>No</td>
</tr>
<tr>
<td>Poster presentation</td>
<td>1500</td>
<td>5</td>
<td>40</td>
<td>No</td>
</tr>
</tbody>
</table>

Add word count of each graded writing assignment and put total word count here.

Add length of each graded speaking assignment and put total presentation time here.

In Workflow

1. PHYS Department Head
2. SC College Dean UG
3. W & C Preparer
4. W & C Advisory Committee Chair
5. Faculty Senate Preparer
6. Faculty Senate
7. Provost II
8. President
9. Curricular Services

Approval Path

1. 05/29/18 4:16 pm Lewis Ford (a-ford): Approved for PHYS Department Head
2. 05/29/18 4:20 pm Lucas Macri (lmacri): Approved for SC College Dean UG
3. 06/05/18 4:35 pm Donna Pantel (dpantel): Approved for W & C Preparer
4. 06/05/18 4:41 pm Donna Pantel (dpantel): Approved for W & C Advisory Committee Chair
Add the percentage of final grade based on writing/speaking and put the total percentage here. Any combination is allowed, as long as the total meets the requirement.

Explain how collaboration is monitored to ensure equal participation. Students do not collaborate on presentations.

Describe the formative feedback provided on student writing and speaking, especially on major assignments.

Formative feedback on poster preparation occurs when students first discuss their poster with the instructor and aspects related to the communication of the important physical ideas behind the experiment they have been assigned. Formative feedback is given again when students submit a draft and receive written comments on its strengths and weaknesses.

Formative feedback is provided on the oral presentations as students prepare their talks and show their drafts to the instructor, who provides feedback on their strengths and weaknesses.

Describe how you provide writing and speaking instruction.

Instruction in poster presentation is provided in lectures. The instructor explains the point of such presentations and what normal and essential features are present. Examples from faculty presentations at national and international conferences are shown and discussed. Examples of prior student poster presentations and shown (with features that could identify the students removed) and strengths and weaknesses are discussed.

Instruction in oral presentations are given by the instructor providing examples of oral presentations. The instructor shows samples that display common pitfalls as well as excellence. The instructor gives a sample talk in class. Considerable time is dedicated to how this type of presentations are commonly used in the field, to understand their limitations, and how to make them most effective.

Required writing component: Students prepare a poster in the style of those used in poster sessions in physics conferences. Posters are typically about one square meter and show background, experimental layout, data, relevant theory, analysis, and results, and are roughly equivalent to a 1500 word essay.

Required communication component: Students give a 10 minute talk in class in the style of those at divisional meetings of the American Physical Society. The talk includes questions. All students are required to ask two questions at other students talks. Additionally, students present the poster described above at a 50 minute poster session in which the entire department attends. Students stand in front of their poster and explain its physical concepts (background, methods, uncertainty propagation, precision and accuracy, systematic effects, etc.) to the members of the department who walk up to their poster.

Percentage of final grade shown above is based on 1 credit hour for PHYS-328. See syllabus.

This is a recertification.

Please ensure that the attached course syllabus sufficiently and specifically details the appropriate core objectives.

Attach Course Syllabus
PHYS 328 - Syllabus - Recertification - Fall 2018.pdf

Reviewer Comments
Valerie Balester (v-balester) (03/12/18 4:19 pm): Rollback: The course needs to include (1) writing and (2) formative feedback on both the writing and the presentations. The current feedback listed is on final delivery so is not formative. The poster can be listed as writing. See the word count and feedback requirements: http://writingcenter.tamu.edu/Faculty/Apply-for-W-or-C-Course-Approval/W-C-Course-Approval-Process/Checklist-of-C-Course-Requirements
Lewis Ford (a-ford) (03/26/18 12:04 pm): Rollback: as requested by Sherree Kesler
Valerie Balester (v-balester) (05/16/18 2:00 pm): Rollback: For revisions as discussed, including new syllabus.
Donna Pantel (dpantel) (06/05/18 4:29 pm): This course has been submitted for re-certification and has been approved from 9/1/2018 to 9/1/2022.
Syllabus: PHYS 328, Experimental Physics II,
Sections 901, 902
Spring 2018

Instructor information
Instructor    George R. Welch
Email          grw@tamu.edu
               Please write PHYS-328 in the subject line for preferred response.
Office        MPHY 314
Office hours  M 9:00-10:00, T 9:00-10:00 (subject to changes announced in class)
Telephone     979-458-7735 (department office)

Course meeting times and locations
Lecture        W 1:50 p.m. – 2:40 p.m., MPHY-213
Lab            Section 901: M 5:00 p.m. – 6:50 p.m, MPHY-150
               Section 902: W 5:00 p.m. – 6:50 p.m, MPHY-150
Note error on Howdy with lab meeting times.
Exam           Wednesday, Week 15 (in class)

Course description and prerequisites
Description    Laboratory experiments in modern physics and physical optics
               with an introduction to current, state-of-the-art recording tech-
               niques.
Corequisites    PHYS 327 and PHYS 328 must be taken together. You may not enroll in one PHYS
               328 without enrolling in the PHYS-327.
Prerequisites   PHYS 221

Learning outcomes or course objectives
By the end of this course, students will be able to:
1. Perform experiments that were critical to the development of modern
   physics.
2. Perform calculations relevant to the physics behind these experiments.
3. Calculate uncertainty in the quantities derived by their experimental data.
5. Give an oral presentation of the style used in physics conferences on a topic
   relevant to their work in this course.
7. Present their experimental results at a poster session as commonly practices
   by professional physicists.
**Textbook:** *Experiments in Modern Physics*, by Melissinos and Napolitano. This is “sort-of” optional. It’s a great book and I recommend it if you are planning a career in physics. We will use it some, but if the purchase is a financial hardship then talk to me.

**Laboratory Notebook:** *Computation Book*, Ampad #22-157. This exact model is absolutely required. No substitutions.

**Notes:** Instructor’s notes will be provided via email or on course web site.

**Grading policies:**
Rules regarding excused absences are found at [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07). Only work missed with excused absences may be made up.

<table>
<thead>
<tr>
<th>The grade in PHYS-328 will consist of</th>
<th>Grading scale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 20%</td>
<td>A: 90-100%</td>
</tr>
<tr>
<td>Oral presentation 40%</td>
<td>B: 80-89%</td>
</tr>
<tr>
<td>Poster presentation 40%</td>
<td>C: 70-79%</td>
</tr>
<tr>
<td></td>
<td>D: 60-69%</td>
</tr>
<tr>
<td></td>
<td>F: 0-59%</td>
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To pass this course you must pass the communication component. To receive C credit for this course you must pass the communication component. You must pass PHYS-327 to pass PHYS-328.

**Course topics and major assignment dates**

<table>
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<tr>
<th>Week</th>
<th>Lecture topic</th>
<th>Lab topic</th>
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</thead>
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<td>1</td>
<td>Introduction</td>
<td>No labs</td>
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<tr>
<td>2</td>
<td>Lab topics</td>
<td>No labs</td>
</tr>
<tr>
<td>3</td>
<td>About oral presentations</td>
<td>Intro/Tour</td>
</tr>
<tr>
<td>4</td>
<td>About oral presentations</td>
<td>Lab 1</td>
</tr>
<tr>
<td>5</td>
<td>Oral Presentations</td>
<td>Lab 2</td>
</tr>
<tr>
<td>6</td>
<td>Oral Presentations</td>
<td>Lab 3</td>
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<td>8</td>
<td>Oral Presentations</td>
<td>Lab 5</td>
</tr>
<tr>
<td>9</td>
<td>— Spring Break —</td>
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<td>10</td>
<td>Oral Presentations</td>
<td>Lab 6</td>
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<td>11</td>
<td>Oral Presentations</td>
<td>Lab 7</td>
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<td>12</td>
<td>Oral Presentations</td>
<td>Lab 8</td>
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<td>13</td>
<td>Poster preparation</td>
<td>Lab 9</td>
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<td>14</td>
<td>Posters/Review</td>
<td>Lab 10</td>
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<td>15</td>
<td>Poster Session</td>
<td>No Labs</td>
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<tr>
<td>16</td>
<td>Exam</td>
<td>No Labs</td>
</tr>
</tbody>
</table>
Handouts
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