Core Curriculum Management

New Core Component Proposal

Date Submitted: 04/11/19 6:06 pm

Viewing: MARB 435-W : Marine Invertebrate Zoology

Last edit: 04/11/19 6:06 pm

Changes proposed by: ballr

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rachel Ball</td>
<td><a href="mailto:ballr@tamug.edu">ballr@tamug.edu</a></td>
<td>409-740-4531</td>
</tr>
</tbody>
</table>

Course Prefix         | MARB
Academic Level       | UG
Complete Course Title | Marine Invertebrate Zoology
Abbreviated Course Title | INVERTEBRATE ZOOLOGY
Crosslisted With

Semester Credit | 4
Hour(s)

Proposal for:
Writing Designation

Writing Designation

Number of credits offered for W sections of course.

Number of Sections per Academic Year | 10
Enrollment per Section (Avg.) | 12

If the course is a variable topics course (e.g., 289, 489, 291, or a course that regularly changes in topic such as “Studies in Rhetoric”), how will the department ensure that the course consistently meets the requirements for a W course?

Do any assistants (i.e., GATs or undergraduates) help with the course?

How many?

Who will evaluate writing assignments?

One assignment is graded by the professor only (worth 10% of the final grade); remaining assignments (worth 16% of the grade) are graded by graduate assistants (2-3 per semester; each graduate student handles two sections)

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 writing. If they help with grading, explain how you will ensure consistency and oversight of the grading (e.g., rubrics).

Once the students have submitted their first lab assignment, I meet with the teaching assistants to discuss the grading rubric and criteria. We go over one or two assignments together and each grade them independently. We then compare notes and discuss any discrepancies among the graders.

Pick a syllabus statement:

To receive W credit for this course, you must pass the writing components. [NOTE: In this case the section number would be changed from a 900 to a 500, so the student would pass the course but would not receive W credit.]
List all graded writing assignments along with the approximate word count 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 Assignment</th>
<th>Word Count</th>
<th>% of Final Grade</th>
<th>Collaborative?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article Critique</td>
<td>800</td>
<td>10</td>
<td>No</td>
</tr>
<tr>
<td>Field Trip Report</td>
<td>800</td>
<td>8</td>
<td>No</td>
</tr>
<tr>
<td>Taxon Description</td>
<td>200</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>Taxon Description</td>
<td>200</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>Taxon Description</td>
<td>200</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>Taxon Description</td>
<td>200</td>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

Add the total of the word count and % of the final grade here.

Explain how collaboration is monitored to ensure equal participation.

Although students collaborate in the lab, there are no team assignments. Each student submits their own report.

Describe the formative feedback provided on student writing, especially on major assignments. Formative feedback is feedback given before a grade is assigned. You can meet this requirement with comments on drafts or with peer review, or you can give feedback on graded writing if there are 5 or more assignments in the same genre.

For the first assignment (field trip report), the students are required to submit a draft two weeks after the field trip. The teaching assistant will provide feedback on the draft and assign a preliminary grade based on a rubric. The students will then have the opportunity to address the comments and improve their grade by a maximum of 15 points. For example, if a student made 70/80 points on the first draft, they can make up to 85 points (including 5 bonus points) on the final version. In my experience, this is preferable to not assigning grades to the first draft, because students usually do not put a lot of effort in a first draft unless there is an incentive.

Describe how you provide writing instruction.

At the beginning of each semester, I usually invite a representative from the TAMUG Writing Lab for a classroom presentation. The presentation usually covers available writing and library resources, some general writing guidelines, correct citation/reference format, and plagiarism. In some semesters we have also offered voluntary writing workshops that were led by a representative from the Writing Lab and the professor or one of the TAs.

In the lecture I devote at least half of one 75 min lecture to go over the writing instructions and common mistakes that students make.

One of the writing assignments is an article critique. The article critique is based on one of 5 peer-reviewed scientific articles we discuss in class. During these discussions we address not only the scientific content but also the general organization and writing style of the scientific papers.

On eCampus I provide the students with additional resources, such as examples of article critiques with my comments inserted from previous semesters (I change the articles every semester, so students cannot plagiarize from these examples).

For the lab portion, the teaching assistants provide at least 45 min of a 3 hour lab to discussing the writing assignments. Once the field trip report is submitted, they also go over some general points in class and address common mistakes that they observed.

Additional Comments I am providing a draft syllabus for Fall 2019, the writing instructions and the grading rubrics.

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

Attach Course Syllabus
MARB 435 Writing Designation Questions.docx
08 Rubric taxon descriptions.pdf
07 Instructions taxon descriptions.pdf
06 Rubric field trip report.pdf
05 Instructions field trip report.docx
04 Rubric article critique.pdf
03 Instructions article critique.pdf
02 Draft syllabus MARB435-635. F19.docx

Reviewer Comments Donna Pantel (dpantel) (10/10/19 1:35 pm): REPORT ON RECERTIFICATION OF W COURSE: MARB 435 We recommend that MARB 435 Marine Invertebrate Zoology be certified as a writing (W) course for four academic years (1/20 to 1/24). We have reviewed a representative syllabus and have determined that the course meets or exceeds the following criteria: (1) 26% of the final grade is based on writing quality; (2) the total number of words is 2,400; (3) the instructor to student ratio is 1:12; and (4) the assigned writing is appropriate to the major. MARB 435 is a 4-credit course. Students write an article critique, a field trip report, and four Taxon descriptions. Students submit a draft of the field trip report for written instructor comment. The TAMUG Writing Lab visits the class to cover writing and library resources and discuss general writing guidelines and citations/plagiarism. The instructor also lectures on common errors and uses examples of scientific articles.

Key: 991
SYLLABUS

Course Information

Course number and title  MARB 435/635 – Marine Invertebrate Zoology

Term  Fall 2019

Lecture (OCSB 142): TR 8:00 am –9:15 am

Lab (CLB 201):
901: M 11:30 am – 2:20 pm
902: W 2:45 pm – 5:35 pm
903: M 2:45 pm – 5:35 pm
904: F 11:30 am – 2:20 pm
905: T 2:20 pm – 5:10 pm
906: R 2:20 – 5:10 pm

Meeting times and location

Course Description

Overview of approximately 20 phyla of invertebrate animals with an emphasis on marine representatives. Lectures cover diversity, morphology, evolution and ecology of each taxon. Labs focus on local fauna and include several field trips in the Galveston area and an independent study project for students taking the class at the graduate level.

Prerequisites

UG students: BIOL 111 and 112. Junior or senior classification or approval of instructor.
G students: Graduate standing or approval by instructor

Learning Outcomes

- Gain a basic understanding of marine invertebrate diversity, ecology, physiology and evolution
- Research and analyze current literature in invertebrate zoology and synthesize the information
- Collect, analyze and interpret invertebrate-related data and summarize in written reports.

Instructor Information

Name  Anja Schulze, Ph.D.
Telephone number  409-740-4540
Email address  schulzea@tamug.edu
Office hours  T 9:30 -11:00 or by appointment
Office location  OCSB 258

Required Textbooks and/or Resource Material

Writing-Intensive class
This is a Writing Intensive class. To pass this course you must pass the W component (at least 156/260 points). To receive W credit for this course, you must pass the W component. The writing component consists of one article critique (100 points), one field trip report (80 points) and four taxon descriptions (20 points each).

Quizzes
We will be using iClicker Cloud for quizzes in class. You will need to download and install the software on your phone, laptop or tablet from here: https://reef-education.com/get-started/for-students/, link it to the course and bring your device to class with you on days when quizzes are scheduled. Additional information, including step-by step instructions can be found here: https://macmillannv.desk.com/?b_id=11491. There will be five quizzes throughout the semester, but only four will count towards your grades. The lowest two quiz grades will be dropped. You cannot make up a quiz.

Exams
The tests, except the lab finals, will mainly cover the material since the last test, but comparative questions referring to previously covered material can be expected.
If you miss a test due to an excused absence you will have the opportunity to take it within 5 business days after the original date. If you have an excused absence exceeding five business days, alternative assignments for extra credit can be arranged.

Independent project (graduate students only)
Each graduate student will work on a topic related to marine invertebrates throughout the semester. The project will include a field and/or laboratory component and may be related to the student’s graduate work. At the end of the semester, you will submit a mock grant proposal based on the data from your project and present your project to the class.

Written Assignments (undergraduate students only)
You are required to submit one research article critique (500-800 words), one field trip report (800 words) and four taxon descriptions (200 words each). The field trip report is due two weeks after ‘Habitat’ field trip at the beginning of your lab section. You will receive written feed-back on your first submission and will have chance to revise it. The penalty for a late assignment is 2 points per day. No late assignments will be accepted after the final deadline on Nov 2, 2019.
For additional guidance on written assignments, consult with the TAMUG Writing Lab (CLB, writinglab@tamug.edu).
# Grading

## Undergraduate students:

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>Percent of final grade</td>
</tr>
<tr>
<td>Research article critique</td>
<td>Field trip report 1</td>
</tr>
<tr>
<td>Quizzes</td>
<td>4 taxon descriptions (20 points each)</td>
</tr>
<tr>
<td>Test 1</td>
<td>Lab practical 1</td>
</tr>
<tr>
<td>Test 2</td>
<td>Lab practical 2</td>
</tr>
<tr>
<td>Test 3</td>
<td>Lab final</td>
</tr>
<tr>
<td>Trivia quiz</td>
<td>Quizzes</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>600</td>
</tr>
</tbody>
</table>

## Graduate students

- Test 1 (120 points): 12%
- Test 2 (120 points): 12%
- Test 3 (120 points): 12%
- Quizzes (80 points): 8%
- Trivia quiz (60 points): 6%
- Concept paper: 10%
- Peer review: 10%
- Research presentation: 10%
- Final proposal: 20%

## All students

A: 90-100%
B: 80-89.9%
C: 70-79.9%
D: 60-69.9%
F: < 60%

---

### Deadlines

**UG Students:**

- TBA Field trip report, first submission
- TBA Field trip report, final submission
- TBA Taxon description 1
- TBA Taxon description 2
TBA  Taxon description 3
TBA  Taxon description 4
TBA  Last deadline to submit all written assignments; no assignments will be accepted after this date.

G Students
TBA  One page concept paper for independent study project
TBA  Submit proposal to peer review
TBA  Class presentation
TBA  Complete peer review
TBA  Final proposal

Absences
Information concerning absences is contained in the University Student Rules Section 7. The University views class attendance is an individual student responsibility. All students are expected to attend class and to complete all assignments. Please consult the University Student Rules for reasons for excused absences, detailed procedures and deadlines as well as student grievance procedures (Part III, Section 45).

Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Office of Student Counseling, in Seibel Student Services Center, Suite 104, or call 409-740-4736. For additional information visit http://www.tamug.edu/counsel/Disabilities.html

Academic Integrity
For additional information please visit: http://www.tamug.edu/catalog/calendar.html

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

Helpful Websites
Academic Calendar http://registrar.tamu.edu/General/Calendar.aspx
Final Exam Schedule http://www.tamug.edu/admr RECORDS.html
On-line Catalog http://www.tamug.edu/catalog/
Student Rules http://www.tamug.edu/stulife/studentrules.html
Religious Observances http://dof.tamu.edu/content/religious-observance
Center for Teaching Excellence http://cte.tamu.edu/
<table>
<thead>
<tr>
<th>Week 1</th>
<th>Lecture Topic</th>
<th>Required Readings</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Syllabus, Introduction</td>
<td>Chapter 2: Classification through Molecular Phylogenetics, p. 36-52</td>
<td>Introduction</td>
</tr>
<tr>
<td></td>
<td>Zooplankton,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Phylogenetics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>Metazoa</td>
<td>Chapter 5: Eggs and embryos, p. 187; Life cycles, p. 197-200</td>
<td>Field trip:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter 6: Introduction (p. 213-214); Phylum Placozoa (215-216); Phylum Porifera (p. 216-220); the poriferan body plan (p. 222-249)</td>
<td>Zooplankton, scientific drawing</td>
</tr>
<tr>
<td></td>
<td>Placozoa and Porifera</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>Cnidaria</td>
<td>Chapter 7: Introduction (p. 265-268); the cnidarian body plan (274-316)</td>
<td>Porifera, Cnidaria</td>
</tr>
<tr>
<td></td>
<td>Writing Lab presentation;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ctenophora</td>
<td>Chapter 8: Introduction (p. 327-328); the ctenophoran body plan (p. 332-341)</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>Article Quiz 1</td>
<td>Article 1: TBA</td>
<td>Field trip:</td>
</tr>
<tr>
<td></td>
<td>Bilateria</td>
<td></td>
<td>oyster reefs, habitat deployment</td>
</tr>
<tr>
<td></td>
<td>Platyhelminthes I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 5</td>
<td>Platyhelminthes II,</td>
<td>Chapter 10: p. 372-405</td>
<td>Lab practical 1,</td>
</tr>
<tr>
<td></td>
<td>Nemertea</td>
<td></td>
<td>mollusc shell</td>
</tr>
<tr>
<td></td>
<td>Test 1</td>
<td>Chapter 12: p. 435-450</td>
<td>identification</td>
</tr>
<tr>
<td>Week 6</td>
<td>Mollusca I</td>
<td></td>
<td>Field trip:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>trawling</td>
</tr>
<tr>
<td>Week 7</td>
<td>Mollusca II</td>
<td>Chapter 13: Introduction (p. 453); molluscan body plan (p 472-521)</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>---------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Article quiz 2</td>
<td>Mollusca III</td>
<td>Article 2: TBA</td>
<td>Mollusca</td>
</tr>
<tr>
<td>Annelida I</td>
<td>Chapter 14: Introduction (p. 531); annelid body plan (p. 541-572)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 8</th>
<th>Annelida I</th>
<th>Chapter 14: Sipuncula, Echiurida, Siboglinidae, Hirudinoidea (p. 572-597)</th>
<th>Field trip: habitat recovery</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Week 9</th>
<th>Test 2</th>
<th>Chapter 17: Introduction (p. 635-636); the lophophorate body plan through brachiopod body plan (p. 637-665)</th>
<th>Field trip: meiofauna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phoronida, Brachiopoda, Bryozoa</td>
<td>Chapter 17: Introduction (p. 635-636); the lophophorate body plan through brachiopod body plan (p. 637-665)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 10</th>
<th>Spiralia/Ecdysozoa, Article quiz 3</th>
<th>Article 3: Butler et al. (2017) - acoustics</th>
<th>Lab Practical 2: Annelida</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tardigrada, Onychophora, Arthropoda I</td>
<td>Chapter 20: Entire chapter!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 11</td>
<td>Arthropoda II, Article quiz 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Article 4: Robinson et al. (2014) – blue crabs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 21: p. Introduction (p. 761); the crustacean body plan (p. 798-831)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 22: Introduction (p. 843-846); the hexapod body plan p. 859-887</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 23: Introduction (p. 895-897); the myriapod body plan (p. 899-908)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arthropoda III</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tardigrada, Arthropoda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 12</td>
<td>Nematoda, Protostomia and Deuterostomia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 24: Introduction (p. 911-912); the euchelicerate body plan (p. 927-955), class Pycnogonida (p. 955-961)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 18: Phylum Nematoda (p. 671-686)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deuterostomes, review</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 13</td>
<td>Echinodermata I; Article quiz 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Article 5: Barry et al. (2017) – crabs and sea pigs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 9: Protostomes and deuterostomes (p. 347-350)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thanksgiving Day – no class!</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 25: Introduction to deuterostomes (p. 967-968), Phylum Echinodermata (p. 968-969)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO LABS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 14</td>
<td>Echinodermata Hemichordata, Invertebrate Chordates</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 25: The echinoderm body plan (p. 975-999)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 26: Entire chapter</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chapter 27: p.1021-1041</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Graduate student presentations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lab Final</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 15</td>
<td>Invertebrate Trivia Quiz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MARB 435 Writing Assignment: Research Article Critique

Objectives

• Become familiar with peer-reviewed literature in Invertebrate Zoology
• Critically evaluate and review a research article

Deadline

• Nov. 18, 2018

Guidelines for Article Critique

Pick one of the five peer-reviewed journal articles posted on ECampus to review.

Your review should be 500-800 words

Start with a full reference for the article, following the formatting guidelines below exactly. Pay attention to bold and italic print, punctuation, author initials, order of authors etc.

The review can briefly summarize the most important results and conclusions, but the main portion should be your own evaluation of the article. Examples of article reviews with comments from previous semesters have been posted.

Here are some important points that you should address in your critique:
• Was this an important study for the field of Invertebrate Zoology and science in general? Why?
• Were the methods appropriate to address the questions and hypotheses?
• Were the conclusions reasonable?
• Should anything have been done differently?
• Which new experiments could be developed based on the results?
• What are the broader implications of the study for society?
• Should anything else have been addressed?

Submission

Submit through the Assignment tab in ECampus. Please UPLOAD your text as a .doc or .docx file, as opposed to copying and pasting. If you copy and paste, most of the formatting will be lost.

Reference:

We will be using the reference format of the journal "Marine Biology". Detailed instructions are posted here: [https://www.springer.com/life+sciences/ecology/journal/227?detailsPage=ptc1_1060810](https://www.springer.com/life+sciences/ecology/journal/227?detailsPage=ptc1_1060810) (see under 'Instructions for Authors')

This is how you reference a scientific journal article (also see posted powerpoint):


Ideally, the names of all authors should be provided, but the usage of “et al” in long author lists will also be accepted: Smith J, Jones M Jr, Houghton L et al (1999) Future of health insurance. N Engl J Med 965:325–329. The DOI is the Digital Object Identifier. Most recent scientific articles have one, but they won’t be available for many older articles.
This is how you reference a **book**:


This is how you reference a **book chapter**:


This is how you cite an **online document**:

## Article Critique

### Levels of Achievement

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Novice</th>
<th>Competent</th>
<th>Proficient</th>
<th>Expert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference</td>
<td>1 Points</td>
<td>4 Points</td>
<td>7 Points</td>
<td>10 Points</td>
</tr>
<tr>
<td>Reference missing or incorrect</td>
<td></td>
<td>Reference largely incomplete</td>
<td>Reference somewhat incomplete</td>
<td>Reference complete and following correct format</td>
</tr>
<tr>
<td>Understanding of article content</td>
<td>4 Points</td>
<td>8 Points</td>
<td>12 Points</td>
<td>16 Points</td>
</tr>
<tr>
<td>Poor understanding of article content</td>
<td></td>
<td>General understanding of article content but missing some major points</td>
<td>General understanding of article content but missing a few points</td>
<td>Firm grasp of subject matter</td>
</tr>
<tr>
<td>Evaluation of article content</td>
<td>4 Points</td>
<td>8 Points</td>
<td>12 Points</td>
<td>16 Points</td>
</tr>
<tr>
<td>Unrealistic and unoriginal evaluation</td>
<td></td>
<td>Somewhat original and realistic evaluation</td>
<td>Mostly original and realistic evaluation</td>
<td>Original and realistic evaluation</td>
</tr>
<tr>
<td>Ideas for future directions</td>
<td>4 Points</td>
<td>8 Points</td>
<td>12 Points</td>
<td>16 Points</td>
</tr>
<tr>
<td>Ideas for future directions poor or missing</td>
<td></td>
<td>Ideas for future directions not particularly original or realistic</td>
<td>Somewhat original and realistic ideas for future directions</td>
<td>Original and realistic ideas for future directions</td>
</tr>
<tr>
<td>Evaluation of broader implications</td>
<td>4 Points</td>
<td>8 Points</td>
<td>12 Points</td>
<td>16 Points</td>
</tr>
<tr>
<td>Poor assessment of broader implications</td>
<td></td>
<td>Decent assessment of broader implications</td>
<td>Good assessment of broader implications</td>
<td>Excellent assessment of broader implications</td>
</tr>
<tr>
<td>Structure</td>
<td>1 Points</td>
<td>4 Points</td>
<td>7 Points</td>
<td>10 Points</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Essay poorly structured and organized</td>
<td>Essay fairly well structured and organized</td>
<td>Essay for the most part logically structured and organized</td>
<td>Essay logically structured and organized</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spelling</th>
<th>1 Points</th>
<th>4 Points</th>
<th>7 Points</th>
<th>10 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor grammar and spelling</td>
<td>Some spelling and/or grammatical errors</td>
<td>Spelling and grammar consistently correct</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>0 Points</th>
<th>2 Points</th>
<th>4 Points</th>
<th>6 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length is much too long or too short</td>
<td>Length slightly too long or too short</td>
<td>Length within limits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

View Associated Items
APPENDIX: GUIDELINES FOR FIELD TRIP REPORTS

You are required to submit reports for two of the required field trips. Reports should be a minimum of 800 words long and should be submitted through the eLearning site. You will receive feedback for your first submission and will have a chance to revise it following the suggestions given to you by your TA. Follow the instructions below closely.

Due date: 2 weeks after the field trip. See syllabus. Late reports will lose 2 points per day.

Structure of Report

Title (4 points): Give a concise title that reflects the contents of your report. For examples, “Meiofauna field trip” is not specific enough. A better title would be: “Comparison of meiofaunal diversity in subtidal and intertidal sand at 99th Street, Galveston, TX”
Uploaded files should have a specific name format: Last name First initial_name of paper.doc (or .docx).

Introduction (8 points): Give a short general introduction to the topic and list the objectives of the field trip

Material and Methods (8 points): In your own words, briefly describe the methods you used to obtain and examine samples. Also list any environmental parameters such as water and air temperature, tide, wind, rain, cloud cover etc.

Results (8 points): Summarize the most important findings. You can present a species list in the form of a table. If you include a table, it needs a heading and you need to refer to it in the text.

Discussion (12 points): What are some possible explanations for the observed results? Were your findings expected or unexpected? Why?

Taxon description (12 points): Pick one invertebrate species that you collected or observed in the field and provide a short description. The description should include the taxonomic classification, major defining characteristics and a description of the animal’s life style. How does it feed? How does it reproduce? Use textbooks and cite at least two scientific publications.

Figure (8 points): For the zooplankton and meiofauna field trips, provide a drawing of the species that you have described in the previous section. You should prepare the drawing in class, following the guidelines for scientific drawings given in Chapter 1, including labels, figure captions and scale bars. For the other field trips, the figure may be a drawing or photograph of the animal or of the field site. If you provide a photograph, it has to be of good quality and of informational value (no group pictures of people sitting on the jetty or the like!). Just as a drawing, it also needs figure captions, labels and scale bars (if it is a picture of an animal). All figures need to be referenced in the text.
References and citations (10 points):
Cite all the literature you are referencing in the text following the name and date system, as customary in most biological journals. Here are some examples:

Smith (1987) described...
Smith (1987, 1988) found that...
Smith and Brown (1986) state....
Smith et al. (1983) suggest... (use "et al." if more than two authors are involved)
The phylum Porifera comprises sedentary filter-feeding organisms, well defined by the possession of an aquiferous system (Bergquist 1978; Brusca and Brusca 1990; Ruppert et al. 2004).

The last section of your report should have the heading "References". List all your references here, including textbooks, journal articles and websites, using the formats below. Pay attention to bold print, italics, punctuation and indentation. Think of your field trip report as a mini journal article. If you submit a paper to a scientific journal with the references in the wrong format, it will be rejected. In this report you will lose points for using incorrect formatting.

Reference format
We will be using the reference format of the journal “Marine Biology”. Pay very close attention to capitalizations, punctuation, indentation and abbreviations.

This is how you cite a scientific journal article:

Ideally, the names of all authors should be provided, but the usage of “et al.” in long author lists will also be accepted: Smith J, Jones M Jr, Houghton L et al. (1999) Future of health insurance. N Engl J Med 965:325–329. The DOI is the Digital Object Identifier. Most recent scientific articles have one, but they won’t be available for many older articles.

This is how you cite a book:

This is how you cite a book chapter:

This is how you cite an online document*:

*Important:
Web pages and the lab manual are not appropriate references, and will not count towards the required number of references for reports.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Unsatisfactory</th>
<th>Need Improvement</th>
<th>Meet Expectations</th>
<th>Exceptional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong></td>
<td>0 Points - No title; missing name and identifying information</td>
<td>2 Points - Title does not reflect the contents of the paper</td>
<td>3 Points - Title somewhat reflects the content of the paper; may not be concise</td>
<td>4 Points - Title accurately reflects the contents of the paper and is concise</td>
</tr>
<tr>
<td><strong>Introduction</strong></td>
<td>0 Points - Introduction is missing; plagiarism in section</td>
<td>4 Points - Information presented is irrelevant; no clear objectives; missing references</td>
<td>6 Points - Information presented is somewhat relevant but aspects may be missing; objectives not clear</td>
<td>8 Points - Relevant information is presented in the student’s own words; objectives are clearly stated</td>
</tr>
<tr>
<td><strong>Materials and Methods</strong></td>
<td>0 Points - Materials and methods missing; plagiarism in section</td>
<td>4 Points - Materials and Methods unclear and inaccurate; environmental parameters missing</td>
<td>6 Points - Materials and methods not entirely clear or accurate; environmental parameters incomplete or inaccurate</td>
<td>8 Points - Materials and methods clearly and accurately described in the student’s own words; environmental parameters listed</td>
</tr>
<tr>
<td><strong>Results</strong></td>
<td>0 Points - Results section missing; plagiarism in section</td>
<td>4 Points - Results presented are largely inaccurate, unclear and incomplete</td>
<td>6 Points - Results presented are not very clear, partially inaccurate or incomplete</td>
<td>8 Points - Results are complete and clearly and accurately presented</td>
</tr>
<tr>
<td><strong>Discussion</strong></td>
<td>0 Points - Discussion section missing; plagiarism in section</td>
<td>6 Points - Interpretation of results is clearly wrong; not original; missing references</td>
<td>9 Points - Interpretation of results is not entirely correct or reasonable; not original; may be missing references</td>
<td>12 Points - Correct and reasonable interpretation of the results; evidence of original thought</td>
</tr>
</tbody>
</table>
## Levels of Achievement

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Unsatisfactory</th>
<th>Need Improvement</th>
<th>Meet Expectations</th>
<th>Exceptional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Taxon description</strong></td>
<td>0 Points Classification and descriptive part missing; plagiarism in section</td>
<td>6 Points Classification and/or descriptive part incorrect.</td>
<td>9 Points Classification and/or descriptive not entirely or not backed up by references</td>
<td>12 Points Correct classification; major defining characters presented; information about the biology of the species is backed up with references</td>
</tr>
<tr>
<td><strong>Figure</strong></td>
<td>0 Points Figure missing; figure is not original work</td>
<td>4 Points Figure not neat and clear and major formatting issues; figure not cited in text</td>
<td>6 Points Figure not neat and clear and/or some issues with formatting</td>
<td>8 Points Figure neat and clear; relevant to topic; is referred to in the text and has correct captions, labels and scale bar</td>
</tr>
<tr>
<td><strong>Citations and References</strong></td>
<td>0 Points References and citations missing</td>
<td>4 Points References missing or major formatting issues; references not cited and/or citations not referenced</td>
<td>7 Points Some formatting errors in citations and/or references; Not all references cited and/or citations referenced</td>
<td>10 Points References and citations follow correct format; all references cited and all citations referenced</td>
</tr>
<tr>
<td><strong>Grammar</strong></td>
<td>0 Points Major grammatical errors; major issues with sentence structure; major punctuation errors</td>
<td>2 Points Major grammatical errors; bad sentence structure; punctuation issues</td>
<td>4 Points Some grammatical errors; odd sentence structure; punctuation issues</td>
<td>6 Points Correct grammar, sentence structure and punctuation throughout the paper</td>
</tr>
<tr>
<td><strong>Spelling</strong></td>
<td>0 Points Major spelling errors throughout paper</td>
<td>2 Points Bad spelling throughout paper</td>
<td>3 Points Some spelling errors</td>
<td>4 Points Correct spelling throughout the paper</td>
</tr>
</tbody>
</table>
Instructions for taxon descriptions

Each taxon description should focus on a species of your choice that falls into a given category (e.g. zooplankton, meiofauna, Cnidaria, Mollusca, etc.). The description should contain the following elements:

1. Scientific and specific common name: Always try to identify the organism to species. If species identification is impossible, find another species that you can identify. It is NOT usually acceptable to use larger categories (genera, families etc.) except if your TA specifically gives you permission to do so (e.g. for meiofauna because they are too difficult for a non-expert to identify to species).

2. Classification: look up the major taxonomic categories and list them (make sure to use a legitimate source and cite/reference it properly).

3. Morphology (100-200 words): describe the morphological characteristics of this species; focus on those that you can use to distinguish it from related species. Make sure to highlight some of these characteristics in your figure.

4. Ecology (100-200 words): Briefly describe the habitat and lifestyle (feeding mode, reproduction, locomotion etc.) of the species. Describe your own observations and cite primary literature.

5. Original image: this can be a good quality drawing or photograph which shows some of the important morphological characters. Follow all the guidelines for scientific images in Chapter 1 of the lab manual: every image needs to be referenced in the text, have a meaningful and accurate figure caption, labels and a scale. Feel free to use multiple images if you cannot show the important features in a single image.

6. References: Each taxon description should have at least two references from primary literature. You can use textbooks and reputable websites as well, but they are in addition to the references from the primary literature.

We will be using the reference format of the journal ‘Marine Biology’. The instructions can be found here: https://www.springer.com/life+sciences/ecology/journal/227 (check under ‘Instructions for Authors’)

This is how you cite a scientific journal article:


Ideally, the names of all authors should be provided, but the usage of “et al” in long author lists will also be accepted: Smith J, Jones M Jr, Houghton L et al (1999) Future of health insurance. N Engl J Med 965:325–329. The DOI is the Digital Object Identifier. Most recent scientific articles have one, but they won’t be available for many older articles.

This is how you cite a book:

This is how you cite a **book chapter**:


This is how you cite an **online document**:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Levels of Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification</strong></td>
<td><strong>Novice</strong></td>
</tr>
<tr>
<td></td>
<td>0 Points</td>
</tr>
<tr>
<td></td>
<td>Species names and classification largely incomplete or incorrect; poor formatting</td>
</tr>
<tr>
<td><strong>Morphology</strong></td>
<td>1 Points</td>
</tr>
<tr>
<td></td>
<td>Morphological descriptions incorrect, unclear or largely incomplete</td>
</tr>
<tr>
<td><strong>Ecology</strong></td>
<td>1 Points</td>
</tr>
<tr>
<td></td>
<td>Ecological characteristics poorly or incorrectly described</td>
</tr>
<tr>
<td><strong>Figure</strong></td>
<td>1 Points</td>
</tr>
<tr>
<td></td>
<td>Poor quality figure; figure, caption, scale and/or labels missing or incorrect; not referenced in text.</td>
</tr>
<tr>
<td><strong>References</strong></td>
<td>1 Points</td>
</tr>
<tr>
<td></td>
<td>Citation/references missing and/or not following formatting instructions</td>
</tr>
</tbody>
</table>
Writing Designation

1. Number of Sections per Academic Year: 10

2. Enrollment per Section (Avg.): 12

3. Are the graded writing assignments evaluated by any assistants (i.e., GATs or undergraduates)? Include all assistants, and indicate if they are graduates or undergraduates. You do not need to use specific names; rather, you can specify "7 undergraduates not taking the course," or "3 Graduate Assistants." One assignment is graded by the professor only (worth 10% of the final grade); remaining assignments (worth 16% of the grade) are graded by graduate assistants (2-3 per semester; each graduate student handles two sections).

4. 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 writing. No more than 10% of the final grade can be determined by undergraduate assistants. This does not include the use of Peerceptiv. Once the students have submitted their first lab assignment, I meet with the teaching assistants to discuss the grading rubric and criteria. We go over one or two assignments together and each grade them independently. We then compare notes and discuss any discrepancies among the graders.

Failure to earn a passing grade on the writing requirements precludes the assignment of W credit, irrespective of the student’s making a passing grade for the entire course on a straight calculation basis. Students cannot receive W credit for this course without earning a passing grade on the writing component, no matter how the points are distributed.

5. 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 W component.

To receive W credit for this course, you must pass the W component.

6. List all graded writing assignments along with the approximate word count 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.

Do NOT count rough drafts, only finished, graded writing. Enter 0 or N/A if field is not applicable.

<table>
<thead>
<tr>
<th>Writing assignment</th>
<th>Word count</th>
<th>% of final grade</th>
<th>Collaborative?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Article critique</td>
<td>500-800</td>
<td>10</td>
<td>No</td>
</tr>
<tr>
<td>2. Field trip report</td>
<td>800</td>
<td>8</td>
<td>No</td>
</tr>
<tr>
<td>3. Taxon description</td>
<td>200</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>4. Taxon description</td>
<td>200</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>5. Taxon description</td>
<td>200</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>6. Taxon description</td>
<td>200</td>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

Add word count of each graded writing assignment and put total word count here: 2100-2400

Add the percentage of final grade based on writing and put the total percentage here: 26
7. **Explain how collaboration is monitored to ensure equal participation.** Although students collaborate in the lab, there are no team assignments. Each student submits their own report.

8. **Describe the formative feedback provided on student writing, especially on major assignments.** Do NOT include commenting on finished, graded work unless there are at least 5 assignments of the same type spaced throughout the semester and each is graded before the next is due. Appropriate forms of formative feedback may include peer review or in-class draft workshops, written or oral instructor comments on written drafts, Peerceptiv, or other methods. Feedback should focus on helping students improve their rough drafts. For more information on formative feedback, see [http://writingcenter.tamu.edu/Faculty/Feedback/Formative-Feedback](http://writingcenter.tamu.edu/Faculty/Feedback/Formative-Feedback).

   For the first assignment (field trip report), the students are required to submit a draft two weeks after the field trip. The teaching assistant will provide feedback on the draft and assign a preliminary grade based on a rubric. The students will then have the opportunity to address the comments and improve their grade by a maximum of 15 points. For example, if a student made 70/80 points on the first draft, they can make up to 85 points (including 5 bonus points) on the final version. In my experience, this is preferable to not assigning grades to the first draft, because students usually do not put a lot of effort in a first draft unless there is an incentive.

9. **Describe how you provide writing instruction.**

   *For example, do you assign readings related to writing in your field? Do you use lecture, modeling, discussion, in-class writing, or other methods to help your students learn to write in your discipline? For more information about possible teaching methods, see [http://writingcenter.tamu.edu/Faculty/Instruction](http://writingcenter.tamu.edu/Faculty/Instruction).*

   At the beginning of each semester, I usually invite a representative from the TAMUG Writing Lab for a classroom presentation. The presentation usually covers available writing and library resources, some general writing guidelines, correct citation/reference format, and plagiarism. In some semesters we have also offered voluntary writing workshops that were led by a representative from the Writing Lab and the professor or one of the TAs.

   In the lecture I devote at least half of one 75 min lecture to go over the writing instructions and common mistakes that students make.

   One of the writing assignments is an article critique. The article critique is based on one of 5 peer-reviewed scientific articles we discuss in class. During these discussions we address not only the scientific content but also the general organization and writing style of the scientific papers.

   On eCampus I provide the students with additional resources, such as examples of article critiques with my comments inserted from previous semesters (I change the articles every semester, so students cannot plagiarize from these examples).

   For the lab portion, the teaching assistants provide at least 45 min of a 3 hour lab to discussing the writing assignments. Once the field trip report is submitted, they also go over some general points in class and address common mistakes that they observed.

10. **Additional Comments**

    I am providing a draft syllabus for Fall 2019, the writing instructions and the grading rubrics.

    **Please ensure that the attached course syllabus sufficiently and specifically details the appropriate core objectives.**
Core Curriculum Management

New Core Component Proposal

Date Submitted: 08/02/19 1:44 am

Viewing: MARE 452-W: Senior Design Project II
Last edit: 10/10/19 12:09 pm

Changes proposed by: carrollm

<table>
<thead>
<tr>
<th>Contact(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Matthew Carroll</td>
</tr>
</tbody>
</table>

Course Prefix       MARE  
Course Number   452  
Academic Level   UG  
Complete Course Title   Senior Design Project II  
Abbreviated Course Title   SR DESIGN PROJECT II  
Crosslisted With   
Semester Credit   2  
Hour(s)   
Proposal for:   Writing Designation

Writing Designation

Number of credits   2  
Number offered for W sections of course.  
Number of Sections per Academic Year   2  
Enrollment per Section (Avg.)   25  

If the course is a variable topics course (e.g., 289, 489, 291, or a course that regularly changes in topic such as "Studies in Rhetoric"), how will the department ensure that the course consistently meets the requirements for a W course?  
The course is not a variable topics course.

Do any assistants (i.e., No GATs or undergraduates) help with the course?  

Pick a syllabus statement:   
To pass this course, you must pass the writing components. [NOTE: In this case the student will receive a failing grade.]

List all graded writing assignments along with the approximate word count 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 assignment</th>
<th>Word Count</th>
<th>% of Final Grade</th>
<th>Collaborative?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Log Book</td>
<td>2500</td>
<td>10</td>
<td>No</td>
</tr>
<tr>
<td>Revised Engineering Design Book (First Edition)</td>
<td>4000</td>
<td>10</td>
<td>No</td>
</tr>
</tbody>
</table>
Add the total of the word count and % of the final grade here.

<table>
<thead>
<tr>
<th>Writing assignment</th>
<th>Word Count</th>
<th>% of Final Grade</th>
<th>Collaborative?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Design Book (Final Edition)</td>
<td>5000</td>
<td>30</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Word Count</th>
<th>Total % of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>11500</td>
<td>50</td>
</tr>
</tbody>
</table>

Explain how collaboration is monitored to ensure equal participation.

Although students form teams in undertaking the senior capstone projects, all reports, including design log books, must be done by each student individually.

Describe the formative feedback provided on student writing, especially on major assignments. Formative feedback is feedback given before a grade is assigned. You can meet this requirement with comments on drafts or with peer review, or you can give feedback on graded writing if there are 5 or more assignments in the same genre.

The Design Log Books are reviewed 4 times throughout the semester at equally spaced intervals. The instructor provides written comments on the log books themselves. The Log Books are sequential – therefore the students cannot go back and “correct” previous entries. However, their subsequent entries improve due to the instructor feedback.

Both Engineering Design Books undergo a preliminary review before the final draft is submitted. The Engineering Design Book (First Edition) is actually reviewed three times before final submission in MARE 452: preliminary and final reviews in MARE 451 Senior Capstone Project I, and then a preliminary review in MARE 452. After the preliminary review the Design Books are returned to the student. For the Engineering Design Book (Final Edition) and second preliminary review can also occur, but this is as necessary and not required for all students.

Describe how you provide writing instruction.

During the lecture periods the writing of all 3 documents is discussed, with examples given of work done by previous students. Some material from a number of style manuals is incorporated into the presentation. Additionally, although each student writing assignment is an individual one, group members provide constructive feedback as the reports are written.

Additional Comments

The “Final Report” – Engineering Design Book (Final Edition) is probably the most significant writing assignment the MARR student undertakes in the engineering courses during his or her undergraduate career.

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

Attach Course Syllabus MARE 452 Syllabus.pdf

Reviewer Comments Donna Pantel (dpantel) [10/10/19 1:46 pm]: REPORT ON RECERTIFICATION OF W COURSE: MARE 452 We recommend that MARE 452 Senior Design Project II be certified as a writing (W) course for four academic years (9/19 to 9/23). We have reviewed a representative syllabus and have determined that the course meets or exceeds the following criteria: (1) 50% of the final grade is based on writing quality; (2) the total number of words is 11,500; (3) the instructor to student ratio is 1:25; and (4) the assigned writing is appropriate to the major. MARE 452 is a 2-credit course. Students keep a Design Log, and an Engineering Design Book, which is submitted as a draft, given formative feedback three times, and revised for a final version. In addition, the design logs are reviewed four times during the semester, so students get continual feedback on their writing. Writing and style are discussed in class, and examples are used to illustrate. Peer review is also built into the process.
Course Title and Number: MARE 452 Senior Design Project II (1/3 – 2 Credits)

Term: Spring 2019

Meeting Times/Location:
Lecture: Thursday 1110 – 1200 PMEC 243
Laboratory: Friday 1130 – 1420 PMEC 243

Instructor Information

Name: Rudy Martinez, Ph. D., P. E.
Telephone Number: (409) 740-4506
E-mail Address: martiner@tamug.edu
Office Hours: 1500 – 1600 Monday - Friday
Office Location: PMEC 215

Catalog Description

This course is a continuation of MARE 451. Development of theoretical, computational or experimental models using the design developed in MARE 451. Formulation, construction and/or fabrication work. Refining, experimenting and testing of models considering alternatives. Analyzing results and preparing and submitting design documents including a project report.

Catalog Prerequisites

MARE 451 Senior Design Project I

Learning Outcomes – Writing

This course is a ‘W’ course, one of two required ‘W’ courses each student needs for graduation. With these ‘W’ courses, students demonstrate competency in writing.

As such, there are three major writing projects for this course, as outlined below. Student must pass all three of these projects to pass the course. Failure of one or more of these will result in a failing grade for the course. Students will be given ample opportunity to edit, improve, and revise each of these projects until they are satisfactory. These project are individual projects that must be undertaken by each student enrolled in the course.

(1) Design Log Book (Word Count: 2500)

This log book documents the process by which the student develops the initial design for their project. Normally, this would be physically larger than the other two projects, because it also contains, as well as a written description of the process, design calculations, sketches, rough notes, diagrams, and descriptions of reference material used in the design.

Grade on this project comprises 10% of the overall course grade.
This document is the student’s description of their first design and implementation, based on research, specification, and design work done during MARE 451, Senior Design Project I, and continued this semester. Due about mid-semester, this document details the first actual build of the project, and its underlying design. Students will be developing several revisions of this document before submitting this final version.

Grade on this project comprises 10% of the overall course grade.

After the initial build of a designed project, many modifications, additions, and adjustments are typically made, resulting in a final device or project that accomplishes the design objectives developed during the design scope phase of MARE 451. This document details all aspects of the final device or project, including specifications, descriptions, testing results, tolerances and limitations, and overall capabilities. It also documents the process by which the various modifications, additions, and adjustment were made. It is the final document for the course and is submitted near the end of the semester, leaving time for required revisions based on instructor and writing center feedback.

Grade on this project comprises 30% of the overall course grade.

**Learning Outcomes – Design**

At the completion of this course, students will be able to:

1. identify and implement the basic aspects of the design process
2. utilize methodologies in the following fields for design and fabrication or manufacture of an engineering device or system
   - general mechanics
   - electrical circuits and power
   - thermodynamics
   - fluid mechanics
   - heat transfer
3. demonstrate proficiency in operating in a team-oriented engineering environment

ABET criteria 1, 2, 3, and 5 are supported in this course.

**Textbook and/or Resource Material**


OR


**Grading Policies**

Graded is based on the writing assignments detailed above and two exams as follows:

- 25%  Examination 1
- 25%  Examination 2
- 50%  Writing Assignments
- 100% Total
Examinations 1 and 2 will cover the theoretical and applied system engineering subjects discussed in the course lectures and covered in the textbook. Grading scale is as follows:

A  >= 90%
B  >= 80% and < 90%
C  >= 70% and < 80%
D  >= 60% and < 70%
F  < 60%

Attendance and Make-up Policies
(general course policies are listed on the following pages)
Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Unless otherwise stated in Student Rule 7, to be considered for an excused absence students must notify the instructor in writing (e-mail is acceptable) prior to the day of absence. In cases where advanced notification is not possible, the student must provide notification by the end of the second business day after the last date of the absence. This notification must include an explanation of why notice could not be sent.

See Student Rule 7, available at

http://www.tamug.edu/studentrules/Academic_Rules/7_Attendance.html

Make-Up Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student’s grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Student Rule 7

http://www.tamug.edu/studentrules/Academic_Rules/7_Attendance.html

provides a list of reasons absences are considered excused by the university.

If a student’s absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. If an instructor has a regularly scheduled make up exam, students are expected to attend unless they have an excused absence.

Students are encouraged to work with the instructor to complete make-up work in advance of known scheduled absences (interviews, administrative proceedings, etc.). Make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence. Absences related to Title IX of the Education Amendments of 1972 (see Student Rule 7, Section 7.2.1.3) may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work will be agreed upon by the student and instructor.

The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence.

Students who are requesting an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code.

See Student Rule 24, available at

http://www.tamug.edu/studentrules/Student_Life_Rules/24_S Student_Conduct_Code.html
Course Topical Outline

Week
1  Introduction
   Shaft and Shaft Components
2  Welding, Bonding, Design of Permanent Joints
3  Mechanical Springs
4  Rolling Contact Bearings
5  Lubrication and Journal Bearings
6  Examination 1
7  Gears – General Criteria
8  Gears – Spur and Helical
9  Gears – Bevel and Worm
10 Clutches, Brakes, Couplings, and Flywheels
11 Flexible Mechanical Elements
12 Hydraulic Systems and Components
13 General Review
   Examination 2
14 Introduction to Control Theory of Machines

4, 7 Writing Review Sessions – General
10, 13 Writing Review Sessions – Design Books

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Counseling Office, Seibel Student Center, or call (409)740-4587.

For additional information visit http://www.tamug.edu/counsel/Disabilities.html.

Academic Integrity

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”
For additional information please visit: http://www.tamug.edu/HonorSystem

Note that in my courses only, collaborative work is allowed, and even encouraged, on homework assignments, class exercises, and group projects. The Honor Code applies to the writing of individual project documentation (note that the gathering of information can be done collaboratively) and written test. Also note that students are not allowed to exchange information-bearing items such as textbooks and calculators during a written test.
Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws provide guidance for achieving such an environment. Although class materials are generally considered confidential pursuant to student record policies and laws, University employees — including instructors — cannot maintain confidentiality when it conflicts with their responsibility to report certain issues that jeopardize the health and safety of our community. As the instructor, I must report (per Texas A&M System Regulation 08.01.01) the following information to other University offices if you share it with me, even if you do not want the disclosed information to be shared:

• Allegations of sexual assault, sexual discrimination, or sexual harassment when they involve TAMU students, faculty, or staff, or third parties visiting campus.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In many cases, it will be your decision whether or not you wish to speak with that individual. If you would like to talk about these events in a more confidential setting, you are encouraged to make an appointment with the Counseling Office, Seibel Student Center, or call (409) 740-4587.

For additional information visit http://www.tamug.edu/counsel/

Students and faculty can report non-emergency behavior that causes them to be concerned at http://www.tamug.edu/care/Tell_Somebody.html