

Course Title: Engineering Research I

Course Prefix: **GNEG**

Course No.: 2151

Section No.: **P11**

Department of | **General Engineering**

College of | **Engineering**

Instructor Name: | *Dr. Jianren Zhou*

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Mail Stop | **2505**  
Prairie View, TX 77446-0519

Office Hours: | As arranged

Virtual Office Hours: | None

Course Location: | By arrangement

Class Meeting Days & Times: | As arranged. (See instructor during office hours first week of class to set meeting time)

Catalog Description: | Engineering Research I. (0-0) Credit 1 semester hour. Research methodology course, the content of which includes an introduction to scientific method, formulation of a research question, development and implementation of a research plan, analysis and evaluation of results, and reporting of findings.

Prerequisites: | Prerequisite: Consent of instructor and research advisor.

Co-requisites: |

**Required Text:** | None

**Recommended Text/Readings:** | Various readings as assigned by instructor and/or research advisor.

Access to Learning Resources: | PVAMU Library:  
phone: (936) 261-1500;  
web: <http://www.tamu.edu/pvamu/library/>  
University Bookstore:  
phone: (936) 261-1990;  
web: <https://www.bkstr.com/Home/10001-10734-1?demoKey=d>

#### Course Goals or Overview:

To develop a basic ability to apply the principles of scientific method, an understanding of the purpose and methods of research, and gain experience in the acquisition and reporting of scientific data.

#### Course Outcomes/Objectives

At the end of this course, the student will have achieved and demonstrated the following outcomes.

- 1 Students will be able to understand and apply the scientific method to achieve a research goal (relevant to ABET Criterion 3, Subcriteria a, b, c, d, and e), as demonstrated by a well-articulated research plan.
- 2 Students will formulate and implement a research plan, evidenced by a project evaluation report completed by instructor and research advisor (relevant to ABET Criterion 3, Subcriterion a, b, c, e, k).
- 3 Students clearly and effectively communicate the purpose, method, and findings of the research experience by means of oral presentations and written reports (relevant to ABET Criterion 3, Subcriteria g, h, j, and k).
- 4 Students will successfully articulate the relevance and impact of the research in which they are engaged as part of the final oral and written reports (relevant to ABET Criterion 3, Subcriteria g, j, and i).
- 5 Students will satisfactorily identify specific continuing education experiences that would be beneficial to an ongoing research effort related to their project and why they are important (relevant to ABET Criterion 3, Subcriteria g and i).

## Course Requirements & Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course. *Note: See Program Outcomes in True Outcomes*

**Grading Matrix** (*points will vary according to instructor's grading system*)

Grade Element	Weight	Actual
Research plan (written)	10%	
Progress Reports (written)	10%	
Final Presentation (oral)	15%	
Final Research Report (written)	40%	
Performance evaluation <sup>2</sup>	25%	
<b>Overall Grade</b>	<b>100%</b>	
Extra Credit <sup>4</sup>		
Adjusted Grade		

**Grade Determination:**

A = 100% – 90%;

B = 89 – 80%;

C = 79 – 70%;

D = 69 – 60%;

F = 59% or less

## Course Procedures

### Submission of Assignments:

*Powerpoint document files of audio/visual aides used to support oral presentations should also be submitted to the instructor by email. Word document files containing the soft-copy of the written report should be submitted to the instructor, along with any supporting files. Hard copies of written reports may also be submitted in addition to the soft-copy.*

### Formatting Documents:

Microsoft Word is the standard word processing tool used at PVAMU. If you're using other word processors, be sure to use the "save as" tool and save the document in either the Microsoft Word, Rich-Text, or plain text format.

### Exam Policy

No exams are scheduled.

## Professional Organizations and Journals

*As directed by instructor.*

## References

*As directed by instructor.*

**Lecture Schedule:** Scope and organization for this course are subject to change.

<b>Week</b>	<b>Lecture Topic</b>	<b>Notes</b>
1	Discussions with research advisor. Establishment of appointments (where applicable).	
2	Overview of course. Introduction to research. The scientific method. Scientific objectivity.	<i>Assignment: View video</i>
3	Understanding the goal. Envisioning what is required. Developing a research plan.	<i>Essay due on scientific method</i>
4	Reviewing and refining the research plan. Communication and research. Introduction to progress reporting.	<i>Research plan draft due</i>
5	Distance communication in research. Using the Internet for remote communication.	<i>Progress report due</i>
6	Research communication. Outlining. Figures of Merit. Citations.	<i>Revised research plan due</i>
7	Research communication. About oral presentations. Elements of successful presentations.	<i>Progress report due</i>
8	Outlining the final report. Choosing reporting style. Identifying figures of merit. Planning citations list. Requesting permission to use copyrighted material.	<i>Progress report due</i>
9	Analysis and presentation of research findings. Developing figures of merit. Evaluation of hypothesis.	<i>Preliminary report outline due</i>
10	Exploring relevance of research project. Recognizing impact of findings. Identifying future work.	<i>Major figure of merit samples due</i>
11-12	Drafting the research paper or final report. The review cycle. Importance of peer review in science.	<i>Background statement due</i>
13	Completing the paper. Preparing the final oral presentation. The importance of life-long learning for successful research.	<i>Draft paper due for review</i>
14	Thanksgiving Holiday	
15	Oral presentation of findings.	<i>Final report due</i>

# University Rules and Procedures

## **Disability statement (See Student Handbook):**

Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

## **Academic misconduct (See Student Handbook):**

You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

## **Forms of academic dishonesty:**

1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.
2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3. Fabrication: use of invented information or falsified research.
4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

## **Nonacademic misconduct (See Student Handbook)**

The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

## **Sexual misconduct (See Student Handbook):**

Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

## **Attendance Policy:**

Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

## **Student Academic Appeals Process**

Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

# Technical Considerations for Online and Web-Assist Courses

## Minimum Hardware and Software Requirements:

- Pentium with Windows XP or PowerMac with OS 9
- 56K modem or network access
- Internet provider with SLIP or PPP
- 8X or greater CD-ROM
- 64MB RAM
- Hard drive with 40MB available space
- 15" monitor, 800x600, color or 16 bit
- Sound card w/speakers
- Microphone and recording software
- Keyboard & mouse
- Netscape Communicator ver. 4.61 or Microsoft Internet Explorer ver. 5.0 /plug-ins
- Participants should have a basic proficiency of the following computer skills:
  - Sending and receiving email
  - A working knowledge of the Internet
  - Proficiency in Microsoft Word
  - Proficiency in the Acrobat PDF Reader
  - Basic knowledge of Windows or Mac O.S.

**Netiquette (online etiquette):** students are expected to participate in all discussions and virtual classroom chats when directed to do so. Students are to be respectful and courteous to others in the discussions. Foul or abusive language will not be tolerated. When referring to information from books, websites or articles, please use APA standards to reference sources.

**Technical Support:** Students should call the Prairie View A&M University Helpdesk at 936-261-2525 for technical issues with accessing your online course. The helpdesk is available 24 hours a day/7 days a week. For other technical questions regarding your online course, call the Office of Distance Learning at 936-261-3290 or 936-261-3282

## Communication Expectations and Standards:

All emails or discussion postings will receive a response from the instructor within 48 hours.

You can send email anytime that is convenient to you, but I check my email messages continuously during the day throughout the work-week (Monday through Friday). I will respond to email messages during the work-week by the close of business (5:00 pm) on the day following ***my receipt*** of them. Emails that I receive on Friday will be responded to by the close of business on the following Monday.

## Submission of Assignments:

Assignments, Papers, Exercises, and Projects will distributed and submitted through your online course. Directions for accessing your online course will be provided. Additional assistance can be obtained from the Office of Distance Learning.

## Discussion Requirement:

Because this is an online course, there will be no required face to face meetings on campus. However, we will participate in conversations about the readings, lectures, materials, and other aspects of the course in a true seminar fashion. We will accomplish this by use of the discussion board.

Students are required to log-on to the course website often to participate in discussion. It is strongly advised that you check the discussion area daily to keep abreast of discussions. When a topic is posted, everyone is required to participate. The exact use of discussion will be determined by the instructor.

**It is strongly suggested** that students type their discussion postings in a word processing application and save it to their PC or a removable drive before posting to the discussion board. This is important for two reasons: 1) If for some reason your discussion responses are lost in your online course, you will have another copy; 2) Grammatical errors can be greatly minimized by the use of the spell-and-grammar check functions in word processing applications. Once the post(s) have been typed and corrected in the word processing application, it should be copied and pasted to the discussion board.