Course Title: Engineering Applications Lab II for Mathematics
Course Prefix: GNEG **Course No.: 1121** **Section No.: P05**

Department of | Chemical Engineering | College of | Engineering

Instructor Name: ***Dr. Michael Gyamerah***
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Office Hours: | MWF 10:00 A. M. - 12:30 P.M. & 1:00 P.M. – 2:00 P.M.; F 2:00 P.M. - 4:00 P.M.
Virtual Office Hours: | None

Course Location: | *Architecture Building 115*
Class Meeting Days & Times: | M 3:00-5:50 p.m.
Catalog Description: | (1-0) Credit 1 semester hour. Practical applications of the 1st level Calculus for problems in engineering, computer science, and technology. The 1st level Calculus concepts will be reinforced through hands-on, physical application in the laboratory.

Prerequisites: | MATH 1115 or equivalent
Co-requisites: | MATH 1124 Calculus with Analytic Geometry

Required Text: | Not Required

Recommended Text/Readings: | Calculus, By Ron Larson and Bruce H. Edwards 10th edition. Publisher: Cengage Learning Custom Publishing. ISBN13: 978-1-285-05709-5
Lectures, assignments, handouts and class notes

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:

The goal of this course is to familiarize engineering students with concepts learned in the Calculus course with life applications.

Course Outcomes/Objectives

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

1. Be able to demonstrate the importance and application of mathematics in engineering, engineering technology, and computer science.
2. Be able to demonstrate knowledge in mathematical concepts that will help the student to be successful in the corresponding math course.
3. Be able to convert word problems into equations and apply knowledge of differential calculus in their solution.
4. Be able to demonstrate knowledge of differential calculus and their applications

Course Requirements & Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course. The course has been designed to introduce students to ABET Student Outcome 1 by acquiring an ability to identify, formulate, and solve engineering problems by applying principles of science and mathematics

Exams – written tests designed to measure knowledge of presented course material
Class Participation – daily attendance and participation in class discussions

Grading Matrix

Instrument	**Total**
Homework	10 %
Exams	30 %
Mid Term Exam	20 %
Final Exam	40 %
Total	**100%**
Discount for lack of participation	-10%
Extra credit (as assigned by instructor)	

Grade Determination:
A = 100 – 90pts;
B = 89 – 80pts;
C = 70 – 79pts;
D = 60 – 69pts;
F = 59pts or below

Course Procedures

Textbook Policy

Students must acquire the textbook that is listed as "required" on the course syllabus. The textbook must be acquired by the 10th class day. Students are not allowed to share textbooks with other students who are currently registered in the same class. Failure to acquire (or show proof of purchase) the required textbook by the 10th class day will result in the student being administratively dropped from the course. The University will assess financial obligations for the course to the student as with any other dropped class according to the fee schedule. In addition, your financial aid may be affected by the subsequent registration action(s).
Go to http://www.pvamu.edu/pages/195.asp for the Roy G. Perry College of Engineering Textbook Policy.

Conduct:

1. Students will conduct themselves in a manner that is respectful to their fellow classmates and the instructor at all times.
2. **Cell phones, ipads and smart phones or similar electronic devices MUST** be turned off and stowed away during class time. Students are **NOT** allowed to leave class to answer cell phones or use these devices.
3. Students caught using ipads and smart phones or similar electronic devices during exams will receive **ZERO** for the exam and be subject to sanctions as stipulated under **Academic Misconduct**.
4. Students should be prepared to stay in the classroom for the duration of the exam. Students who have any condition that may require them to leave the exam room should make prior arrangements with the Instructor. Students who decide to leave the exam room for any other reason must handover their exam paper and consider the exam over for them.
5. Programmable calculators are **NOT** allowed in class.
6. Students should dress professionally and are **NOT** allowed to wear caps/hats in class.
7. Students are NOT allowed to bring food to the classroom or eat in class
8. Arrive to class prepared to discuss lesson; Always bring essential tools: Textbook and paper.

Submission of Assignments:

All homework assignments are due directly to the Instructor, prior to the start of class or the assignment will not be accepted. All homework assignments and exams should be written on one side of the page only, and should use the appropriate cover sheet, with the name, assignment title and date. All pages should be numbered. Failure to use the correct cover sheet will result in the assignment grade being reduced by 20%.

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

Exams should be taken as scheduled. No makeup examinations will be allowed except under documented emergencies (See Student Handbook).

Professional Organizations and Journals

As directed by instructor.

References

As directed by instructor.

16 WEEK CALENDAR

Week One: Topic — Introduction to Lab: Course Policies and Expectations

Week Two: Topic — Geometric and Algebraic Approach to Vectors

Week Three: Topic — Geometric and Algebraic Approach to Vectors

Week Four: Topic — Functions and Models; Limits and Rates of Change

Week Five: Topic — The Tangent, Velocity and Limits Problems;

Week Six: Topic — Exam 1

Week Seven: Topic — Derivatives: Trig; Product, Quotient and Chain Rule

Week Eight: Topic — Application of derivatives: Differentiation formulas, properties ; Rates of Change and Related Rates

Week Nine: Topic — Midterm Exam

Week Ten: Topic — Application of derivatives: Rates of Change and Related Rates

Week Eleven: Topic — Application of derivatives: Rates of Change and Related Rates

Week Twelve: Topic — Application of Derivatives: Maximum and Minimum Values, and Optimization

Week Thirteen: Topic — Exam 2

Week Fourteen: Topic — Application of Derivatives: Optimization

Week Fifteen: Topic — Review

Week Sixteen — **Final Exam**

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.