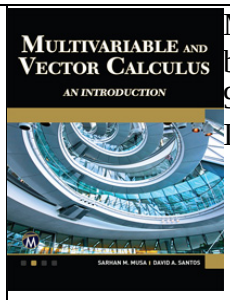
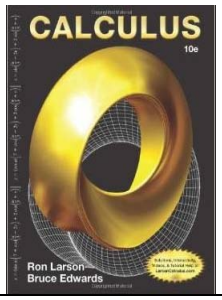
Course Title:		**Engineering Applications Lab III for Mathematics**			
Course Prefix:	**GNEG**	**Course Number:**	**2021**	**Section Number:**	**P03**
Department of Engineering Technology			**Roy G. Perry College of Engineering**		
Spring 2018					
Instructor Name:	Sarhan M. Musa				
Office Location:	S. R. Collins, Room 307				
Office Phone:	936.261.9860				
Fax:	936.261.9867				
Email Address:	*smmusa@pvamu.edu*				
Snail Mail (U.S. Postal Service) Address:	Prairie View A&M University P.O. Box 519 Mail Stop 2530 Prairie View, TX 77446				
Office Hours:	T, R W	9:20am -12:00pm 12:50pm - 3:00pm			
	and by appointment				
Virtual Office Hours:	Contact by email				
Course Location:	Juvenile Justice Building , Room 363				
Class Meeting Days & Times:	W	3:00-5:50 pm			
Catalog Description:	(1-0) Credit 1 semester hour. Practical applications of the 2nd level Calculus for problems in engineering, computer science, and technology. The 2nd level Calculus concepts will be reinforced through hands-on, physical application in the laboratory.				
Prerequisites:	MATH 1124				
Co-requisites:	MATH 2024				
Required Text:	None				

Recommended Text/Readings:	 Multivariable and Vector Calculus: An Introduction, by **Sarhan M. Musa** & David A. Santos, ISBN: 9781936420285, MERCURY LEARNING AND INFORMATION Publisher**,** 2015.  **Calculus 10th Edition** by Ron Larson Bruce H. Edwards, Brooks/Cole 2014.
Required Tools and Supplies:	Basic calculator and using Matlab in CoE Labs.
Student Knowledge and Experience Assumptions:	• Single integration • Single variable Derivatives • Single variable Limits • Single variable Functions
Access to Learning Resources:	**PVAMU Library** Telephone: (936) 261-1500 http://www.pvamu.edu/library/ Use the Reference Desk at the library where the staff is eager to guide your research. They can orient you to hard copies and on-line resources. **University Bookstore** Telephone: (936) 261-1990 https://www.bkstr.com/Home/10001-10734-1?demoKey=d **The Writing Center** Telephone: (936) 261-3700 http://www.pvamu.edu/lcom/home/the-writing-center/ The Writing Center's goal is to provide a friendly, stress-free environment for students from all over campus to meet with a consultant and talk about writing of all types. They provide a responsive audience and advice from experienced writers in sessions generally lasting thirty to forty-five minutes. Sessions of this length offer time to work individually with students on any aspect of the writing process: from brain storming and drafting, to revising and

	proofreading. They will explore ways to improve a student's overall writing skills. They do NOT proofread or edit for students, but instead teach proofreading and editing techniques. Their goal is to: make a better writer for the long term. **The Tutoring Center** John B. Coleman Library - Room 209 Telephone: (936) 261-1561 http://www.pvamu.edu/universitycollege/ae/cas/ Open to all undergraduate students enrolled for credit in targeted PVAMU courses. **Student Academic Success Center** Telephone: (936) 261-1040 https://www.pvamu.edu/compass/ Student Academic Success Center identifies academic and social roadblocks that interfere with persistence and timely graduation of PVAMU students. SASC informs campus-wide policies by staying current with retention literature and best practices. Further, SASC develops programs and services that are specifically aimed at continuing the academic success of the first year. They strive to provide PVAMU students with "Navigation to Graduation"

Course Goals or Overview

1. This course introduces applications of engineering, engineering technology, and computer science while enhancing the students' mathematics skills.
2. It helps the students to understand how to solve mathematical problems and advanced problems in today's technologies.

Course Objectives/Accrediting Body - ABET
Standards Met: SACS and ABET

This course contributes towards the following four objectives of the College of Engineering:

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 mathematics 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 integral calculus in their solution;
4. Be able to demonstrate knowledge of integral calculus and their applications.

	Skills and Knowledge	**Alignment with Academic Program**	**Alignment with Core Curriculum**

1	An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology (TAC/ABET outcome [b])	Sub-Outcome b1 & b2: Students demonstrate knowledge and application of intermediate mathematics ; Knowledge and application of science and engineering technology principles	6

Course Requirements and Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.
Exams – written tests designed to measure knowledge of presented course material
Quizzes – short written tests designed to measure knowledge of course material and/or assigned readings
Exercises – written assignments designed to supplement and reinforce course material
Projects – assignments designed to measure ability to apply presented course material
Class Participation – daily attendance and participation in class discussions

Major Topics covered in this course

Chapter 1 Vectors and Parametric Curves
Chapter 2 Differentiation
Chapter 3 Integration
Appendix B MATLAB

Based on the above topics, this course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

Grading Matrix

Instrument	Semester weight, %
Quizzes/Homework	30
Exams	70
Total:	100

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

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/engineering/textbook-policy/
for the Roy G. Perry College of Engineering Textbook Policy

Submission of Assignments
All assignments will be submitted on the eCourse web site for this course, unless otherwise specified by the professor. Written assignments will be scanned to PDF form and submitted. The hardware for the Course Project will be presented and demonstrated on the final day of class for credit as part of the course project grade.
Note that scanners for Engineering Technology students will be available in SRC 203 and SRC 302. Scanners are also available in the Coleman Library.

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). Quizzes and Exams may include material from any classroom activities. Additionally, **the student is responsible for assigned readings in the textbook, whether material is explicitly covered in class or not.**

Note that **pop-quizzes may be given at any time** during the class period to test the understanding of key concepts.

For examination periods, students will place all backpacks, purses, and electronic devices in the front of the classroom and will sit at locations designated by the instructor in the classroom or lab for the duration of the exam. If the student needs to leave the exam for any reason during the examination period, the student must submit the exam to the instructor and will not be allowed to do any more work on the exam.

Missed or Late Work
If a student is absent, all work due on the date of absence must be provided on eCourses per the assigned date for full credit. Late or incomplete work may receive partial credit, at the sole discretion of the instructor.

Housekeeping

All tools and lab supplies must be returned to their appropriate location.
Please keep chairs and tables where they belong.
Return all equipment, tools, etc. back where they belong.
Please do not move, remove, swap, or replace any equipment. If you suspect any equipment to be faulty, please bring it to your instructor's attention.

Classroom Conduct

1. Interpersonal skills are critical to both working with peers and leading others. Students will conduct themselves in a manner that is respectful to their fellow classmates and the instructor at all times.
2. In practice for the workplace, your preparation and complete attention to the subject matter is crucial, as it would be in any place of employment. Therefore:
   2.1. Cell phones MUST be turned off during class time, no texting during class time.
   2.2. No earbuds allowed during class.
   2.3. Arrive to class on time and be prepared to discuss lesson.
   2.4. Always bring essential tools: Textbook, pencil, paper, scientific calculator (not cell phone).
3. Business casual attire is encouraged, again preparing for the workplace.
4. You are encouraged to work together on classroom exercises as collaboration and teamwork are important skills to learn. However, **exams, quizzes, laboratory write-ups, and homework assignments are strictly the individual's responsibility and must be done independently**. Recognized copying of work may result in a grade of **zero** for all parties involved.

Attend at least one day by the 10th class day or will be administratively dropped.

Food and Beverages

Other than sealable bottles of water**, food and beverage items are prohibited in the classroom and laboratory.**

Dress Code

Engineering Technology students are preparing for the professional world of work. Business casual attire is strongly encouraged to prepare students for company internships, co-operative education work periods, or for visits by industry representatives to the classrooms or labs. However, certain minimum standards are required:

1. Students are NOT allowed to wear caps/hats/hoods in class.
2. Students must wear closed toe shoes in the laboratory. If you show up to lab in flip‐flops or any open‐toed footwear you will be asked to leave and you will be considered absent for that lab.
3. Students must remove jewelry from the hands when working with electrical equipment.

Professional Organizations and Journals

IEEE (www.ieee.org)
References
See eCourse web site for this course.

Course Calendar
Week One: **Topics:** Vectors and Parametric Curves **Reading:** Chapter 1 , 11
Week Two: **Topics:** Vectors and Parametric Curves **Reading:** Chapter 1
Week Three: **Topics:** Vectors and Parametric Curves **Reading:** Chapter 1 , 11
Week Four: **Topics:** Vectors and Parametric Curves **Reading:** Chapter 1 , 11
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Week Five: **Topics:** Differentiation **Reading:** Chapter 2 , 13
Week Six: **Topics:** Differentiation **Reading:** Chapter 2 , 13
Week Seven: **Topics:** Multiple Differentiations **Reading:** Chapter 2 , 13
Week Eight: **Topics:** Multiple Differentiations **Reading:** Chapter 2, 13
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Week Nine: **Topics:** ***Spring Break **Reading:**
Week Ten: **Topics:** Integration **Reading:** Chapter 3, 14
Week Eleven: **Topics:** Techniques of Integration **Reading:** Chapter 3, 14
Week Twelve: **Topics:** Techniques of Integration **Reading:** Chapter 3, 14
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Week Thirteen: **Topics:** Multiple Integrals **Reading:** Chapter 3, 14
Week Fourteen: **Topics:** Multiple Integrals **Reading:** Chapter 3, 14
Week Fifteen: **Topics:** Applications of Multiple Integrals **Reading:** Chapter 3, 15
Week Sixteen: **Topics:** Applications of Multiple Integrals **Reading:** Chapter 3, 15
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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. **Note that the first occurrence of a student caught cheating on an exam in this course will receive zero points for that exam. If there is a second occurrence of cheating on an exam by a student, the student will receive a failing grade for the course.**
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. Attendance and punctuality is expected and is vital to a thorough understanding of the course. The student cannot develop the proficiency required for this course just studying the textbook. Lectures and/or labs may include material not covered in the textbook**. If you cannot attend a particular class session, please discuss the conflict with the instructor in advance (in person, via phone or email)**. Attendance will be taken at the beginning of class. Any student who is not present when attendance is taken may be counted as absent for that class.

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.

Academic Calendar–Spring 2018

January 15, Monday

- Dr. Martin Luther King Jr. Day **(University Closed)**

January 16, Tuesday

- Instruction **Begins**

January 16 - January 20, Tuesday-Saturday

- Late Registration, Add/Drop Courses, Change Major/Certification, , or any Matriculation Change **Ends** for Undergraduate Students **Period**

January 20, Saturday

- Student Web Registration Access **Closed at Midnight**
- Late Deadline to apply for Spring 2018 graduation
- Last Day to Withdraw from Course(s) without Academic Record - Spring 2018
- Late Deadline for Graduating Undergraduate Students to Submit Application for Tuition Rebate
- Late Registration and Add Course(s), Change Major **Ends**

January 25, Thursday

- General Student Assembly-All Students Attend **(Cancelled)**

January 31, Wednesday

- 12th Class Day (Census Date)
- **Last Day** to Withdraw from Course(s) Without Academic Record - Spring 2018
- **Late Deadline to Apply for Spring 2018 Graduation**
- Late Deadline for Graduating Undergraduates to Submit Application for Tuition Rebate for Spring 2018

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February 1 - April 2, Thursday - Monday

- Withdrawal from Courses with Academic Record ("W") **Period**

February 12, Monday

- 20th Class Day

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March 8 - 10, Thursday - Saturday

- Mid-Semester Examination Period

March 12- 17, Monday- Saturday

- Spring Break

March 28 – 31, Wednesday

- Founders Day/Honors Convocation

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April 2, Monday

- Withdrawal from Course(s) with Academic record ("W") **Ends**

April 10 - May 23, Tuesday – Wednesday

- Priority Registration Period for Summer/ Fall 2018

April 13, Friday

- Graduation Application Deadline for Summer 2018
- Deadline for Graduating Undergraduate Students to Submit Application for Tuition Rebate

April 30 - May 1, Monday – Tuesday

- Course Review Days [Classes **must** convene and instructors will prepare students for Final]

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May 1, Tuesday

- Last Class Day for Spring Semester
- **Last** Day to Withdraw from the University (**From All Courses**) for the Spring 2018 Semester
- Deadline to apply for Spring 2018 Degree Conferral **ONLY**

May 2 - May 8, Wednesday-Tuesday

- Final Examination **Period**