



# SYLLABUS

## MATH 3014 P01, Calculus with Analytic Geometry III Fall Semester, 2018

**Instructor:** Manouchehr Misaghian Ph.D

**Section P 01 and CRN:** 11183

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**Office Hours:** MWF: 7:00 -7:50 AM  
MW: 11:00 AM -1:50 PM,

**Mode of Instruction:** Face to Face

**Course Location:** **Hobart 2B210**

**Class Days & Times:** TR: 1:00-2:50 PM

**Catalog Description:**

(4-0) Credit 4 semester hours. Calculus of functions of several variables, calculus of vector valued functions, partial differentiation, multiple integrals.

**Prerequisites:**

Math 2024 or equivalent

**Co-requisites:**

None

**Required Texts:**

1. The text –either a paper copy or an electronic version of
2. WebAssign – an online homework package [www.webassign.net](http://www.webassign.net)
3. A scientific or graphing calculator.

**Textbook Options:**

Calculus, By Ron Larson and Bruce H. Edwards **11th edition**

**ISBN13:** 978-1-337-27534-7

Calculator

A scientific calculator is required. A graphing calculator is recommended: e.g. TI 83 or TI 84 series. Calculators capable of symbolic manipulation will not be allowed on tests. Examples include, but are not limited to, TI 89, TI 92, and Nspire CAS models and HP 48 models.

**Recommended Texts:**

None

**Student Learning Outcomes:**

At the end of this course, the student will be able to			
		Alignment with Academic Program	Alignment with Core Curriculum
1	show mastery in the differential and integral techniques to deal with functions of several variables; use a variety of techniques to integrate more complex integrals	#1, #3	#2
2	apply integral calculus to solving a variety of scientific and applied problems	#2, #4	#2, #3

3	understand the concept and applications of polar system	#1, #2	
4	understand parametric equations of curves and equations of curves in polar coordinates; find derivatives of and tangents to parametric and polar curves	#1	#2, #3
5	Understand Vector Fields, Line Integrals, The Fundamental; Theorem for Line Integrals Test 3, and Green's Theorem	#1, #2	#3, #4
6	apply calculus to solve selected problems that arise in mathematics, science, engineering, computer science, business, and economics	#2, #3	#2, #3, #4

**Student Learning Outcomes:**

**Program Learning Outcomes:**

1. Demonstrate basic mathematical computational skills and distinguish uses of concepts in Calculus, Algebra, and Applied Mathematics.
2. Demonstrate the ability to write mathematically rigorous proofs.
3. Demonstrate the ability to perform advanced mathematical computations.
4. Demonstrate a breadth and depth of knowledge in mathematics.

**Core Curriculum Learning Outcomes:**

1. Critical Thinking Skills
2. Communication Skills
3. Teamwork
4. Empirical and Quantitative Skills
5. Personal Responsibility
6. Social Responsibility

**Major Course Requirements**

**Method of Determining Final Course Grade**

Course Grade Requirement	Value	Total
1) Homework	15%	15%
2) Exam 1	15%	15%
3) Exam 2 Midterm	15%	15%
4) Exam 3	15%	15%
5) Class activity,	10%	10%
6) Final Exam	30%	30%
<b>Total:</b>	<b>100%</b>	<b>100%</b>

**Remark.** Class activity is a combination of attendance, Taskstream, quizzes, and any projects.

**Grading Criteria and Conversion:**

- A = 90 – 100%
- B = 80 – 89%
- C = 70 – 79%
- D = 60 – 69%
- F = 0 – 59%

**Detailed Description of Major Assignments:**

Assignment Title or Grade Requirement	Description
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**Examinations** All exams will consist of essay type written tests designed to measure knowledge of presented course material. The midterm exam and the final exam are to be done in class. Scientific calculators are allowed and a formula sheet will be provided.

**Departmental policies on exams and technology**

1. No multiple choice questions are allowed on any test at any level.
2. No types of technology are allowed to be used by students in class, on tests throughout the academic years, except a standard calculator of TI-83/84 or equivalent.

Tests and quizzes will be developed to minimize any possible dishonesty.

**Homework** All homework problems are to be done using WebAssign to enhance the understanding of the material. The publisher has supplements freely available online. Go to <http://www.webassign.net/login.html> to register and do the homework. A 14-day grace period of non-purchase of WebAssign code is granted to all students. At the end of the grace period, students must purchase the WebAssign code (also called Class Key) for continued access of the program. The WebAssign code (Class Key) for this section is: 1663 4173

**Math 3014 –P01 – Calculus with Analytic Geometry III**

Fall Semester, 2018

Week	Monday Wednesday Friday	
1	<b>Review:</b> <b>Chapter 11. Vectors and geometry of space</b> 11.1-11.2 3D Coordinate System. And vectors 11.3 The Dot Product 11.4 The Cross Product	
2	11.5 Equations of Lines and Planes 11.6-11.7 Cylinders and Quadratic Surfaces	Quiz 1
3	<b>Chapter 12. Vector Functions.</b> 12.1 Vector functions and space curves 12.2 Derivative and Integrals of vector functions	Quiz 2
4	12.3 Motion in Space: Velocity and Acceleration 12.4 Tangent and normal vectors 12.5 Arc length and Curvature	<b>Test 1</b>
5	<b>Chapter 13. Partial Derivatives.</b> 13.1 Functions of several variables. 13.2 Limits and Continuity 13.3 Partial Derivatives.	Quiz 3
6	13.4 Linear Approximations. differential 13.5 The Chain Rule. 13.6 Directional Derivatives and the Gradient Vector	Test 2
7	13.7 Tangent Planes and normal lines	Quiz 4

	13.8 Maximum and Minimum Values.	
8	<b>Review Mid-Term Exam</b>	
9	<b>Chapter 14. Multiple Integrals.</b> 14.1. Iterated Integrals 14.2 Double Integrals and volume 14.3 Change of variables: Polar Coordinates	Quiz 5
10	14.5 Surface Area 14.6 Triple Integrals and Applications 14.7 Change of variables	Quiz 6
11	14.8 Triple Integrals in Spherical Coordinates and Cylindrical Coordinates	Quiz 7
12	<b>Chapter 15. Vector Calculus.</b> 15.1 Vector Fields 15.2 Line Integrals 15.3 The Fundamental; Theorem for Line Integrals	<b>Test 3</b>
13	15.4 Green's Theorem. 15.5 Curl and Divergence. 15.6 Parametric Surfaces and Their Areas.	Quiz 8
14	15.7 The Divergence Theorem. 15.8 Stoke's Theorem	
15	<b>Review, The Last day of classes</b>	
16	<i>Final exam</i>	

## Student Support and Success

### Taskstream

Taskstream is a tool that Prairie View A&M University uses for assessment purposes. At least one of your assignments is **REQUIRED** to be submitted as an "artifact," an item of coursework that serves as evidence that course objectives are met. More information will be provided during the semester, but for general information, you can visit Taskstream via the link in eCourses.

### John B. Coleman Library

The library and its partners have as their mission to provide resources and instructional material in support of the evolving curriculum, as a partner in Prairie View A&M University's mission of teaching, research, and service and to support the University's core values of access and quality, diversity, leadership, relevance, and social responsibility through emphasis on ten key areas of service. It maintains library collections and access both on campus, online, and through local agreements to further the educational goals of students and faculty. <https://www.pvamu.edu/library/> Phone: 936-261-1500

### The Learning Curve (Center for Academic Support)

The Learning Curve offers Tutoring via peer tutoring. The services include workshops (i.e., Save My

Semester, Recalculate Your Route), seminars (i.e., Tools You Can Use: TI-84), group review sessions (i.e., College Algebra Topic Reviews, GRE Preparation), group study opportunities (i.e., TSIA, HESI, Study Break, Exam Cram), and test-taking strategies (How to take Notes, Study Buddy, 5 Day Study Guide). The Learning Curve is a nationally certified tutoring program through the National Tutoring Association. The peer tutors are trained and certified by the coordinator each semester. Location: J.B. Coleman Library Rm. 207F. Phone: 936-261-1561

### **The Center for the Oversight and Management of Personalized Academic Student Success (COMPASS)**

The Center for the Oversight and Management of Personalized Academic Student Success (COMPASS) is designed to help Prairie View students in their second year and beyond navigate towards graduation by providing the following services: Academic Advisement, Targeted Tutorials for Personalized Learning, Campus-Wide Referrals, and Academic & Social Workshops. Location: J.B. Coleman Library Rm. 306. Phone: 936-261-1040

### **Writing Center**

The Writing Center provides student consultants on all aspects of the writing process and a variety of writing assignments. Writing Center consultations assist students in such areas as prewriting, brainstorming, audience awareness, organization, research, and citation. Students taking on-line courses or courses at the Northwest Houston Center or College of Nursing may consult remotely or by email. Location: Hilliard Hall Rm. 121. Phone: 936-261-3724.

### **Student Counseling Services**

The Student Counseling Services unit offers a range of services and programs to assist students in maximizing their potential for success: short-term individual, couples, and group counseling, as well as crisis intervention, outreach, consultation, and referral services. The staff is licensed by the State of Texas and provides assistance to students who are dealing with academic skills concerns, situational crises, adjustment problems, and emotional difficulties. Information shared with the staff is treated confidentially and in accordance with Texas State Law. Location: Owens-Franklin Health Center Rm. 226. Phone: 936-261-3564

### **Testing**

The Department of Testing administers College Board CLEP examinations, the HESI A2 for pre-nursing majors, LSAT for law school applicants and MPRE for second-year law students, the Experiential Learning Portfolio option, the Texas Success Initiative (TSI) Assessment, which determines college readiness in the state, and exam proctoring, among other service such as SAT and ACT for high school students. Location: Delco Rm. 141. Phone: 936-261-4286

### **Office of Diagnostic Testing and Disability Services**

As a federally-mandated educational support unit, the Office of Disability Services serves as the repository for confidential disability files for faculty, staff, and students. For persons with a disability, the Office develops individualized ADA letters of request for accommodations. Other services include: learning style inventories, awareness workshops, accessibility pathways, webinars, computer laboratory with adapted hard and software, adapted furniture, proctoring of non-standardized test administrations, ASL interpreters, ALDs, digital recorders, livescribe, Kurtzweil, and a comprehensive referral network across campus and the broader community. Location: Evans Hall Rm. 317. Phone: 936-261-3585

### **Veteran Affairs**

Veterans Services works with student veterans, current military and military dependents to support their transition to the college environment and continued persistence to graduation. The Office coordinates and certifies benefits for both the G.I. Bill and the Texas Hazlewood Act. Location: Evans Hall Rm. 323. Phone: 936-261-3563

### **Office for Student Engagement**

The Office for Student Engagement delivers comprehensive programs and services designed to meet the co-curricular needs of students. The Office implements inclusive and accessible programs and services that enhance student development through exposure to and participation in diverse and relevant social, cultural, intellectual, recreational, community service, leadership development and campus governance. Location: Memorial Student Center Rm. 221. Phone: 936-261-1340

## **Career Services**

Career Services supports students through professional development, career readiness, and placement and employment assistance. The Office provides one-on-one career coaching, interview preparation, resume and letter writing, and career exploration workshops and seminars. Services are provided for students at the Northwest Houston Center and College of Nursing in the Medical Center twice a month or on a requested basis. Distance Learning students are encouraged to visit the Career Services website for information regarding services provided. Location: Evans Hall Rm. 217. Phone: 936-261-3570

## **University Rules and Procedures**

### **Disability Statement (Also See Student Handbook):**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Evans Hall, Room 317, or call 936-261-3585/3.

### **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.

### **Title IX Statement**

Prairie View A&M University (PVAMU) is committed to supporting students and complying with the Texas A&M University System non-discrimination policy. It seeks to establish an environment that is free of bias, discrimination, and harassment. If you experience an incident of sex- or gender-based discrimination, including sexual harassment, sexual assault or attempted sexual assault, we encourage you to report it. While you may talk to a faculty member about an incident of misconduct, the faculty

member must report the basic facts of your experience to Ms. Alexia Taylor, PVAMU's Title IX Coordinator. If you would like to speak with someone who may be able to afford you privacy or confidentiality, there are individuals who can meet with you. The Title IX Coordinator is designated to handle inquiries regarding non-discrimination policies and can assist you with understanding your options and connect you with on- and off-campus resources. The Title IX Coordinator can be reached by phone at 936-261-2123 or in Suite 013 in the A.I. Thomas Administration Building.

### **Class Attendance Policy (See Catalog for Full Attendance Policy)**

Prairie View A&M University requires regular class attendance. Attending all classes supports full academic development of each learner whether classes are taught with the instructor physically present or via distance learning technologies such as interactive video and/or internet.

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 during regular semesters and summer terms. Each faculty member will include the University's attendance policy in each course syllabus.

### **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**

#### **Minimum Recommended Hardware and Software:**

- Intel PC or Laptop with Windows 7; Mac with OS X; Smartphone or iPad/Tablet with Wi-Fi
- High speed Internet access
- 8 GB Memory
- Hard drive with 320 GB storage space
- 15" monitor, 800x600, color or 16 bit
- Sound card w/speakers
- Microphone and recording software
- Keyboard & mouse
- Most current version of Google Chrome, Safari, Internet Explorer or Firefox

**Note:** Be sure to enable Java & pop-ups in the Web browser preferences

#### **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 (or a program convertible to 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 as directed. Students are to be respectful and courteous to others on discussions boards. Foul or abusive language will not be tolerated.

#### **Technical Support:**

Students should go to <https://mypassword.pvamu.edu/> if they have password issues. The page will provide instructions for resetting passwords and contact information if login issues persist. For other technical questions regarding eCourses, call the Office of Distance Learning at 936-261-3283

#### **Communication Expectations and Standards:**

Emails or discussion postings will receive a response from the instructor, usually in less than 48 hours. Urgent emails should be marked as such. Check regularly for responses.

***Discussion Requirement:***

Online courses often require minimal to no face-to-face meetings. However, conversations about the readings, lectures, materials, and other aspects of the course can take place in a seminar fashion. This will be accomplished by the use of the discussion board. 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/they should be copied and pasted to the discussion board.