SYLLABUS

Summer 2019

Calculus with Analytic Geometry II - 32460 - MATH 2024 - P01

<table>
<thead>
<tr>
<th>Department of</th>
<th>Mathematics</th>
<th>College of</th>
<th>Arts and Sciences</th>
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</thead>
</table>

Instructor Name: Saroj P. Pradhan PhD
Office Location: W. R. Banks 301 J
Office Phone: (936) 261 2085
Fax: (936)-261-2088
Email Address: sppradhan@pvamu.edu
Snail Mail (U.S. Postal Service) Address: Prairie View A&M University
P.O. Box 519
Mail Stop 2225
Prairie View, TX 77446

Office Hours: MTWR 11:00 am – 12:00 pm
Virtual Office Hours: By email sppradhan@pvamu.edu
Course Location: W.R. Banks 309
Class Meeting Days & Times: MTWR 12:00 pm – 3:40 pm
Course Abbreviation and Number: Math 2024

Catalog Description: Credit 4 semester hours. Applications of integrals, integration techniques, inverse functions, indeterminate forms, improper integrals, parametric equations, polar coordinates, infinite series, power series, Taylor series.

Prerequisites: Math 1124 or equivalent

www.webassign.net Class Key: pvamu 6405 8064

Recommended Text:

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

Overview and Course Goals:
The goals of this course are to provide a solid foundation of different integration techniques and theory of infinite series and to show how the basic concepts of calculus can be applied to solving various applied problems

At the end of this course, the student will be able to

<table>
<thead>
<tr>
<th>Alignment with Academic Prog.</th>
<th>Alignment with Core Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 enhance their understanding of functions of a single variable and operations on the them;</td>
<td>#1, #4</td>
</tr>
<tr>
<td>2 learn different integration techniques</td>
<td>#1, #4</td>
</tr>
<tr>
<td>2 apply differential and integral calculus to solving a variety of applied problems</td>
<td>#2, #4</td>
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<tr>
<td>3 understand the concept and applications of inverse functions</td>
<td>#1, #4</td>
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<tr>
<td>4 master their work with different types of equations, such as parametric equations and equations of curves in polar coordinates;</td>
<td>#1</td>
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<tr>
<td>5 analyze sequences and series and solve related applied problems;</td>
<td>#1, #2</td>
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### 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 applied 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

### Course Evaluation Methods
- **Exams** – written tests designed to measure knowledge of presented course material
- **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

### Departmental policies on exams and technology
- No multiple choice question is allowed on any test at any level; students should explain and justify their solutions;
- No types of technology is allowed to be used by students on tests throughout the academic years. Except that students can use calculators up to the level of TI-84, with no camera and no access to the Internet.
- All tests must be taken in class and permitted makeup tests should be in the faculty's offices or in the mathematics department's office.
- Cellular phones or any other device that has access to the Internet and/or is capable of taking picture are NOT allowed during tests.

### Grading Matrix
<table>
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<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Test 1</td>
<td>20%</td>
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<tr>
<td>Test 2</td>
<td>20%</td>
</tr>
<tr>
<td>Test 3</td>
<td>20%</td>
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<tr>
<td>Participation</td>
<td>5%</td>
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<tr>
<td>Final exam</td>
<td>25%</td>
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<tr>
<td>Additional projects¹</td>
<td>10%</td>
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¹Additional points (%) will be given for extraordinary projects, solution of assigned challenging problems and bonus questions, hard work in class, class participation attendance of all classes, etc.

### Grade Determination:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>90% - 100%</td>
<td>A</td>
<td>Excellent</td>
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<tr>
<td>80% - 89.9%</td>
<td>B</td>
<td>Good</td>
</tr>
<tr>
<td>70% - 79.9%</td>
<td>C</td>
<td>Fair</td>
</tr>
<tr>
<td>60% - 69.9%</td>
<td>D</td>
<td>Poor</td>
</tr>
</tbody>
</table>
Course Procedures

Submission of Assignments:
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

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 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.

**College of Arts and Sciences Student & Staff Aspiration Statement**
The faculty and staff of the College of Arts and Sciences at PVAMU are committed to providing the best possible quality education to its students. To that end, we will work hard to prepare the students for success by setting the proper academic environment and background necessary to facilitate learning. In order for us to be successful, there are some basic expectations our students must demonstrate. These expectations are a simple ingredient to foster camaraderie and ‘esprit de corps’ in every class and classroom on campus. Additionally, these are lifelong fundamental learning skills to better prepare students for success in America’s job market.

**CAS student expectations:**
- You are expected to come to class prepared and on time.
- Higher education is an investment in your future, to that end; you must endeavor to be properly equipped for class. (i.e. School supplies, text, and other supporting materials).
- Resolution of any classroom issues (i.e. Grades, course materials, etc) should begin with the instructor.
- If you must leave early, notify the instructor before the class begins, sit by the door, and exit quietly
- Be considerate of your fellow classmates; please turn off all phones, pagers and other electronic devices.
- Do not talk to other students during lecture. If you have a question or a comment on the subject being discussed, address it to the instructor directly.
- Walk quietly through the hallways, classes in other rooms may still be in session.
- Please refrain from eating, drinking, sleeping in class, using profanity, and engaging in any form of horseplay in the classroom it is disruptive to your fellow classmates.
- Be respectful, civil, polite and considerate when dealing with your professors as well as your fellow classmates.
- Student attire is based on personal preference and taste. The rule of thumb is simple, if it projects a statement which is offensive to others, then maturity should dictate that it is probably not a good idea to wear to class.
- Enthusiasm is infectious, a smile and positive attitude will go far to motivate and charge your professors and fellow classmates.

**Math 2024 – Calculus with Analytic Geometry II**

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<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td>1</td>
<td><strong>Introduction; Review</strong></td>
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<td></td>
<td><strong>Ch 5</strong> Logarithmic, Exponential, and Other Transcendental Functions</td>
<td><strong>5.1-5.5</strong> Logarithmic and Exponential Functions</td>
<td><strong>6.3 L’Hospital’s Rule</strong></td>
<td><strong>5.7-5.9</strong> Inverse Trigonometric Functions</td>
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<td></td>
<td><strong>Ch 7</strong> Applications of integration</td>
<td><strong>7.1 Areas of the Region between Two Curves</strong></td>
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<tr>
<td>2</td>
<td><strong>Review</strong></td>
<td><strong>Test 1 07/15/2019</strong></td>
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<td></td>
<td><strong>Ch 7</strong> Applications of integration</td>
<td><strong>7.2-7.3</strong> Volume</td>
<td><strong>7.4 Arc Length, Surface of Revolution</strong></td>
<td><strong>7.5-7.7</strong> Other Applications</td>
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<td><strong>Ch 8</strong> Integration Techniques and Improper Integrals</td>
<td><strong>8.1</strong> Basic Integration Rules</td>
<td><strong>8.2 Integration by Parts</strong></td>
<td><strong>8.3</strong> Trigonometric Integrals</td>
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<td></td>
<td><strong>Ch 8</strong> Integration Techniques and Improper Integrals</td>
<td><strong>8.3</strong> Trigonometric Substitutions</td>
<td><strong>8.4</strong> Partial Fractions</td>
<td><strong>8.5-8.6</strong> Strategy for Integration</td>
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<tr>
<td></td>
<td><strong>Ch 8</strong> Integration Techniques and Improper Integrals</td>
<td><strong>8.6</strong> Strategy for Integration</td>
<td><strong>8.8</strong> Improper Integrals</td>
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<td>3</td>
<td><strong>Review</strong></td>
<td><strong>Test 2 07/22/2019</strong></td>
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<td><strong>Ch 9</strong> Infinite Series</td>
<td><strong>9.1-9.2</strong> Sequences and Series</td>
<td><strong>9.3-9.6</strong> Strategy for testing series</td>
<td><strong>9.7-9.10</strong> Power Series; Their Types and Applications</td>
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<tr>
<td></td>
<td><strong>Ch 9</strong> Infinite Series</td>
<td><strong>9.7-9.10</strong> Power Series; Their Types and Applications</td>
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<td><strong>Taylor and McLaurin Series</strong></td>
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<td>4</td>
<td><strong>Review</strong></td>
<td><strong>Test 3 07/29/2019</strong></td>
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<td><strong>Ch 10</strong> Conics, Parametric Equations, and Polar Coordinates</td>
<td><strong>10.2-10.3</strong> Parametric Equations</td>
<td><strong>10.4-10.6</strong> Polar coordinates</td>
<td><strong>9.3-9.6</strong> Strategy for testing series</td>
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<td><strong>Ch 13</strong> Functions of Several Variables</td>
<td><strong>13.1</strong> Introduction to Functions of Several Variables.</td>
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<td>13.3-13.5 Partial Derivatives. Differentials. Chain Rules for Functions of Several Variables</td>
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<tr>
<td>Ch 14 Multiple Integration</td>
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| 5 | Review |
|   | Final Exam 08/05/2019 |