SYLLABUS

MATH 2024, Calculus with Analytic Geometry II
Summer II Semester, 2021
07/07/2021 – 08/11/2021

Instructor: Dr. Dimitar Michev
Section: Y01 and CRN: 32460
Office Location: W. R. Banks, Rm. 301 F
Office Phone: 936-271-1982
Email Address: dimichev@pvamu.edu
Office Hours: By appointment.

Mode of Instruction: Hybrid/Blended

Course Location: Harrington Building, 212
Class Days & Times: MTWR 02:00pm – 05:10pm
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
Co-requisites: None

Required Texts:
1. The text –either a paper copy or an electronic version of Calculus, By Paul Sisson and Tibor Szarvas
2. Hawks Learning – an online homework package: http://www.hawkeslearning.com/Products/Math/CALC/Calculus123.htm
3. A scientific or graphing calculator.
   Calculator

A scientific calculator is required. A graphing calculator can be recommended by course instructor: 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 TI-Nspire CAS models and HP-48 models.

Recommended Texts: None

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

<table>
<thead>
<tr>
<th>Upon successful completion of this course, students will be able to:</th>
<th>Program Learning Outcome # Alignment</th>
<th>Core Curriculum Outcome Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Evaluate, differentiate, and integrate functions of a single variable and use them in various applications.</td>
<td>#1, #4</td>
<td>#2</td>
</tr>
<tr>
<td>2 Evaluate definite and indefinite integrals using a variety of integration methods.</td>
<td>#1, #4</td>
<td>#2, #3</td>
</tr>
<tr>
<td>3 Apply differential and integral calculus to solve a variety of applied problems.</td>
<td>#2, #4</td>
<td>#2, #3</td>
</tr>
<tr>
<td>4 Evaluate certain integrals, know the substitution rule, and apply the Fundamental Theorem of Calculus.</td>
<td>#4</td>
<td>#2</td>
</tr>
<tr>
<td>5 Understand the concept of anti-derivatives as an inverse action of the derivative.</td>
<td>#2</td>
<td>#2, #3</td>
</tr>
<tr>
<td>6 Understanding the sigma notation, concept of area and how to approximate it.</td>
<td>#3</td>
<td>#2, #3</td>
</tr>
<tr>
<td>7 Convert rectangular equations to parametric equations and/or polar coordinates. Use calculus to find the area and slope of polar and parametric curves.</td>
<td>#1</td>
<td>#2, #3</td>
</tr>
<tr>
<td>8 Analyze sequences and series and solve related applied problems. Find the Taylor or Maclaurin series for a function. Use power series to solve mathematical and applied problems.</td>
<td>#1, #2</td>
<td>#3, #6</td>
</tr>
<tr>
<td>9 Apply calculus to solve selected problems that arise in mathematics, science, engineering, computer science, business, and economics.</td>
<td>#2, #3</td>
<td>#2, #3, #5</td>
</tr>
</tbody>
</table>

**Major Course Requirements**

**Method of Determining Final Course Grade**

<table>
<thead>
<tr>
<th>Course Grade Requirement</th>
<th>Value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Homework</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>2) Exam 1</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>3) Exam 2</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>4) Exam 3</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>5) Final Exam</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Total:</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Remark 1.** Class activity is a combination of attendance (if applicable), Taskstream (if applicable), quizzes, and any projects.

**Remark 2.** No late assignment will be
accepted. No makeup test/quiz will be
given. Some special cases will be
handled according student’s
handbook.

**Grading Criteria and Conversion:**
A = 90 – 100%
B = 80 – 89%
C = 70 – 79%
D = 60 – 69%
F = 0 – 59%

**Examinations**
All exams will consist of essay type written tests designed to measure knowledge of presented course material. 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.
3. Tests and quizzes will be developed to minimize any possible dishonesty.

**Homework**
All homework problems are to be done using Hawkes learning to enhance the understanding of the material. The publisher has supplements freely available online. **Go to** [http://www.hawkeslearning.com/Products/Math/CALC/Calculus123.html](http://www.hawkeslearning.com/Products/Math/CALC/Calculus123.html) **to register and do the homework.** A 14-day grace period of non-purchase of **Hawkes learning** code is granted to all students. At the end of the grace period, students must purchase the **Hawkes learning** code (also called Class Key) for continued access of the program. The **Hawkes learning** code (Class Key) for this section is:

**Weekly Tentative Outline**
**Summer II Semester, 2021**

<table>
<thead>
<tr>
<th>Week</th>
<th>Content</th>
</tr>
</thead>
</table>
| 1    | Ch. 5: 5.1 Area, Distance, and Reimann Sums  
      | 5.2 The Definite Integral  
      | 5.3 The Fundamental Theorem of Calculus |
| 2    | Ch. 6: 6.1 Finding Volume Using Slices  
      | 6.2 Finding Volumes Using Cylindrical Shells  
      | 6.3 Arc Length and Surface Area |
| 2    | 6.4 Moments and Centers of Mass¹  
      | 6.5 Force, Work, and Pressure¹  
<pre><code>  | **Exam 1: Sections 5.1 – 5.5, 6.1 – 6.3** |
</code></pre>
<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topics</th>
</tr>
</thead>
</table>
| 3    | 7/19/21- 7/25/21 | 6.6 Hyperbolic Functions  
Ch. 7: 7.1 Integration by Parts  
7.2 The Partial Fractions Method  
7.3 Trigonometric Integrals |
| 4    | 7/26.21- 8/1/21 | 7.4 Trigonometric Substitution  
7.7 Improper Integrals  
Exam 2: Sections 6.6, 7.1 – 7.4, 7.7, and Anything from Exam 1 |
| 4    | 8/2/21- 8/8/21 | Ch. 10: 10.1 Sequences  
10.2 Infinite Series  
10.3 The Integral Test  
10.4 Comparison Tests  
10.5 Ratio and Root Tests  
10.6 Absolute and Conditional Convergence  
10.7 Power Series  
10.8 Taylor and Maclaurin Series  
10.9 Further Applications of Power Series¹  
Exam 3: Chapter 10 |
| 5    | 8/9/21- 8/15/21 | Ch. 9: 9.1 Parametric Equations  
9.2 Calculus and Parametric Equations  
9.3 Polar Coordinates  
9.4 Calculus in Polar Coordinates |
| 08/11/21 | Comprehensive Final Exam. |

Notes: In the above table, the superscript (1) means that the section is optional, and you will not be tested on it. Instructors may cover it in class if there is enough time. Instructors may also give homework assignments on it.

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.

Student Support and Success

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
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

**Academic Advising Services**
Academic Advising Services offers students a variety of services that contributes to student success and leads towards graduation. We assist students with understanding university policies and procedures that affect academic progress. We support the early alert program to help students get connected to success early in the semester. We help refer students to the appropriate academic support services when the student is unsure of the best resource for their needs. Some students are supported by faculty advisors in their respective colleges. Your faculty advisor can be identified in PantherTracks. Advisors with Academic Advising Services are available to all students. We are located across campus. You can find your advisor’s location by academic major at the Academic Advising Website, Phone: 936-261-5911.

**The University Tutoring Center**
The University Tutoring Center (UTC) offers free tutoring and academic support to all registered PVAMU students. The mission of the UTC is to help provide a solid academic foundation that enables students to become confident, capable, independent learners. Competent and caring staff and peer tutors guide students in identifying, acquiring, and enhancing the knowledge, skills, and attitudes needed to reach their desired goals. Tutoring and academic support is offered face-to-face in the UTC, in virtual face-to-face sessions, and through online sessions at PVPlace. Other support services available for students include Supplemental Instruction, Study Break, Academic Success Workshops, and Algebra Study Jam. Location: J. B. Coleman Library, Rm. 307; Phone: 936-261-1561; Email: pvtutoring@pvamu.edu; Website: University Tutoring Center.

**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.

**Academic Early Alert**
Academic Early Alert is a proactive system of communication and collaboration between faculty, academic advisors, and PVAMU students that is designed to support student success by promptly identifying issues and allowing for intervention. Academic Early Alert helps students by providing a central location to schedule advising appointments, view advisor contact information, and request assistance. Students who recognize that they have a problem that is negatively affecting their academic performance or ability to continue school may self-refer an Academic Early Alert. To do so, students will log in to PVPlace and click on Academic Early Alert on the left sidebar. Phone: 936-261-5902; Website: Academic Early Alert.

**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
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 student’s 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
- Video conferencing software.
- Basic knowledge of Windows or Mac O.S.
- Lockdown Browser application.

**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. Do not use ALL CAPS for communicating to others AS IT CAN BE INTERPRETED AS YELLING. Avoid slang terms such as “wassup?” and texting abbreviations such as “u” instead of “you.” Limit and possibly avoid the use of emoticons. Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post and the message might be taken seriously or sound offensive.

**Video Conferencing Etiquette**
- When using Zoom, WebEx or other video conferencing tools, confirm the visible area is tidy, clear of background clutter, inappropriate or offensive posters, and other distractions. Ensure you dress appropriately and avoid using high traffic or noisy areas. Stay muted when you are not speaking and avoid eating/drinking during session. Before class session begins, test audio, video and lighting to alleviate technology issues.

**Technical Support:**
Students should go to the Password Reset Tool 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 Center for Instructional Innovation and Technology Services (CIITS) at 936-261-3283 or email ciits@pvamu.edu.

**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.

**COVID-19 Campus Safety Measures** [NOTE: Delete this section when the COVID-19 pandemic is over]
To promote public safety and protect students, faculty, and staff during the COVID-19 pandemic, Prairie View A&M University has adopted policies and practices for the Fall 2020 academic term to limit virus transmission. Students must observe the following practices while participating in face-to-face courses and course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.):

- **Self-monitoring** - Students should follow CDC recommendations for self-monitoring. Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely and should not participate in face-to-face instruction.

- **Face Coverings** - Face coverings (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain.

- **Physical Distancing** - Physical distancing must be maintained between students, instructors, and others in course and course-related activities.

- **Classroom Ingress/Egress** - Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Students should leave classrooms promptly after course activities have concluded, should not congregate in hallways and should maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.

- **Face-to-face Class** - To attend a face-to-face class, students must wear a face covering (or a face shield if they have an exemption letter). If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report that student to the Office for Student Conduct for adjudication. Additionally, the faculty member may choose to teach that day’s class remotely for all students.

**COVID-19 Guidelines for Student Conduct Adjudication**

- The mandatory COVID-19 Training/Certification taken by all students serves as the 1st Warning for violation of COVID-19 Guidelines.
  - 1st incident: upon review of Incident Report and finding of responsibility — Conduct Probation
  - 2nd incident: upon review of Incident Report and finding of responsibility — Suspension
  
  - Consult the Code of Student Conduct in the Student Planner or [Student Conduct website](http://studentconduct@pvamu.edu) for additional information on Conduct Probation and Suspension.

- **Personal Illness and Quarantine** - Students required to quarantine must participate in courses and course-related activities remotely and must not attend face-to-face course activities. Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities. Students experiencing personal injury or illness that is too severe for the student to attend class qualify for an excused absence. To receive an excused absence, students must provide appropriate documentation to the Office for Student Conduct, [studentconduct@pvamu.edu](mailto:studentconduct@pvamu.edu).