Instructor: Robert Payne  
Office: Bush Math-332  
Email: rpayne@sfasu.edu  
(Preferred method of contact.)  
Phone: 936-468-1620 (office)  
936-468-3805 (Math Dept.)

Class meeting time and room: MWF 10:00–10:50, Bush Math-208
Final Exam day and time: Monday, May 6th 10:30 – 12:30

Office Hours: 
MF: 9:00 – 10:00, 11:00 – 1:00, TTh: 1:00 – 3:30. Other times by appointment.  
W: 9:00 – 10:00 only.

Required Materials
Book: Mathematical Applications for the Management, Life, and Social Sciences, by Harshbarger & Reynolds, Tenth Edition  
(note: the local bookstores will not carry this textbook; look online).  
ISBN-13: 978-1133106234 (Just Google that number to find cheap copies.)  
ISBN-10: 1133106234

Calculator:  
You will need a scientific calculator. I recommend the TI-30XS Multiview (retail price under $25) or similar. Graphing calculators are permitted as well, but expect me to clear memory before exams.

Course Description
Limits and continuity, the derivative, the antiderivative, the definite integral, and applications.

Student Learning Outcomes
For a detailed list of student learning outcomes, see https://math.sfasu.edu/docs/syllabi/MATH1325Syllabus.pdf

Grading Policy

Grading Scale

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Component</th>
<th>Grade Range</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>Quizzes</td>
<td>90% - 100%</td>
<td>A</td>
</tr>
<tr>
<td>60%</td>
<td>Tests (4 @ 15% each)</td>
<td>80% - 90%</td>
<td>B</td>
</tr>
<tr>
<td>20%</td>
<td>Comprehensive Final Exam</td>
<td>70% - 80%</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60% - 70%</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0% - 60%</td>
<td>F</td>
</tr>
</tbody>
</table>

Final Exam

- The final exam for this course will be given on Monday, May 6th as scheduled on the university calendar. No alternate arrangements will be allowed. Students who have no more than 2 unexcused absences may replace a lower exam grade with a final exam of at least 70%.

Tutoring

- Contact the AARC (on the first floor of the library) to inquire about tutor support for MATH 1325. The AARC offers in-person and Zoom tutoring for many classes.

- Weekly Appointments: For more course-specific help, the AARC offers Supplemental Instruction (SI) sessions for some courses. If you are interested in either of these resources, contact the AARC at aarc@sfasu.edu

General Policies and Information

- You are encouraged, at any time in class, to ask questions on material.
- I will send messages to the entire class during the semester, often through the D2L news feed. Make sure you check D2L regularly, or download the Brightspace Pulse App.
- Students are expected to respect the learning environment of their fellow students. Students who disrupt this environment will be asked to leave.
- Bring your calculator to class every day, it will be useful.
Testing, Grading, and Make-up Policies

- Weekly quizzes count 20% of a student’s grade. Students may use notes/completed homework while working the quiz, but not the textbook. Quiz questions will be similar to (or the same as) those problems listed on the Suggested Textbook Exercises list. To maximize your quiz average, complete the textbook problems beforehand, getting help as needed. Missed quizzes cannot be made up, but two low quiz grades will be dropped to allow for excused absences.
- If a student misses a test, the student’s missed test grade can be replaced by a final exam grade of at least 70%. If more than one exam is missed, the final exam grade will replace only one of the missed exams.
- Tentative exam dates are given in the calendar. Exams will be scheduled out of class at times TBA.
- Since you have a full semester to arrange any travel plans, they are not an excuse for missing the final.
- Students are expected to attend every class meeting. If you miss class, it is your responsibility to get notes from a classmate.
- Attendance is recorded daily. While not directly part of your grade, attendance may be considered for borderline grades.

How to succeed in MATH 1325

- The main obstacle to student success in this class is weak knowledge of algebra. It is imperative that you have strong algebra skills in order to work through calculus problems. Take time to review the basic algebra concepts in Chapters 0-2 in the textbook, especially if you haven’t taken algebra in a while. Not doing the HW is another barrier to success in the course.
- Calculus problems are sometimes long. You’ll need patience, perseverance, and attention to detail to work through these problems.
- Take the time to read the book and review your notes before and after class.
- Practice homework problems until you can do them without referring to examples or getting help. Doing the homework in advance will be essential to having a good quiz average, which accounts for 20% of your overall course grade.
- You want the best possible quiz average you can get. This will remove some of the pressure on the exams.
- I encourage you to form informal study groups. You don’t truly understand a concept until you can explain it clearly to a classmate. Study groups are an excellent way to help you reach this level. Plus, being in a study group will help keep you accountable with regards to keeping up with class material.
- Have someone check your work after you have finished it to help eliminate mistakes that you do not know you are making. This is another benefit of study groups.
- Let go of the mentality whereby you only focus on the course when an exam is approaching. You need to always be studying, always preparing. That’s a big commitment, but if you try it, you’ll find that the exams are easier, your grades are better, and new concepts will come more quickly.
- Treat mistakes as a learning experience. Math is not easy. You will encounter difficulty. You will score a grade that you’re not happy with. Push through it. Success awaits you on the other side.

University Policies

- Definition of Academic Dishonesty: Academic dishonesty includes cheating, plagiarism, collusion, and misrepresentation. Articles IV, VI, and VII of the Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member*, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities. Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements. Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam. Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual...
Any student caught cheating, aiding another student in cheating, or appropriating the words or work of others without proper citation will be subject to academic discipline. **It is the responsibility of the student not only to abstain from cheating, but in addition, to avoid the appearance of cheating, and to guard against making it possible for others to cheat.** Penalties are given at the discretion of the instructor and range from receiving zeros for the work done to dismissal from the course and/or University. Violations are tracked by the dean's office.

I may opt to give an in-person oral examination if I have reason to suspect that work a student submits is not his/her own.

*Students in this class are welcome to study any exams from past semesters.*

- **Student IDs:** You must show your student picture ID before exams. No ID, no exam!
- **Withheld Grades Semester Grades Policy (A-54):** Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.
- **Students with Disabilities:** To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

**Student Wellness and Well-Being**

- SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc. If you are experiencing concerns, seek help. SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

- **On-campus Resources:**
  - The Dean of Students Office (Rusk Building, 3rd floor lobby)
    - [www.sfasu.edu/deanofstudents](http://www.sfasu.edu/deanofstudents)  936.468.7249  dos@sfasu.edu
  - SFA Human Services Counseling Clinic Human Services, Room 202
    - [www.sfasu.edu/humanservices/139.asp](http://www.sfasu.edu/humanservices/139.asp)  936.468.1041
  - The Health and Wellness Hub “The Hub”  [www.sfasu.edu/thenhub](http://www.sfasu.edu/thenhub)  936.468.4008  thehub@sfasu.edu
    - Location: corner of E. College and Raguet St.
    - To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:
      - Health Services
      - Counseling Services
      - Student Outreach and Support
      - Food Pantry
      - Wellness Coaching
      - Alcohol and Other Drug Education
  - **Crisis Resources:**
    - Burke 24-hour crisis line: 1.800.392.8343
    - National Suicide Crisis Prevention: 9-8-8
    - Suicide Prevention Lifeline: 1.800.273.TALK (8255)
    - johCrisis Text Line: Text HELLO to 741-741
## Tentative Course Schedule

<table>
<thead>
<tr>
<th>Week of</th>
<th>Sections Covered</th>
<th>Suggested Textbook Problems</th>
</tr>
</thead>
</table>
| Jan 15  | Course Introduction  
9.1 Limits |  |
| Jan 22  | 9.2 Continuous Functions  
9.3 Rates of Change | 9.1 p. 553: 1-9 odd, 15-37 odd, 49-61 odd  
9.2 p. 564: 1-15 odd, 25-31 odd, 39, 41, 45, 47  
9.3 p. 577: 1-170dd, 27-31 odd, 35, 37, 41, 45, 53 |
| Jan 29  | 9.4 Derivative Formulas  
9.5 Product and Quotient Rule  
9.6 Chain Rule | 9.4 p. 588: 1-33 odd, 47-55 odd  
9.5 p. 596: 1-25 odd, 39-43 odd  
9.6 p. 603: 1-29 odd,35,39,41 |
| Feb 5   | 9.7 Derivative Formulas  
9.8 Higher Order Derivatives  
Catch up day | 9.7 p. 610: 1-31 odd,37,41,43  
9.8 p. 615: 1-25 odd,35,39,41 |
| Feb 12  | Review/Extra Instruction  
9.9 Applications in class Wednesday  
Exam 1: Wednesday, Feb 14th out of class  
11.1 Derivatives of Logarithmic Functions | Covers 9.1 – 9.8  
9.9 p. 624: 1-21 odd,25,27  
Covers 9.1 – 9.8  
11.1 p. 708: 1-37 odd,43,45 |
| Feb 19  | 11.12 Derivatives of Exponential Functions  
11.13 Implicit Differentiation  
11.3 p. 724: 1-43 odd,47,55,57  
11.4 p. 730: 1-15 odd,17,19,31,33,37 |
| Feb 26  | 14.1 Multivariable Expressions  
14.2 Partial Differentiation  
Catch up day | 14.1 p. 876: 1-21 odd  
14.2 p. 885: 1-17 odd |
| Mar 4   | Review/Extra Instruction  
10.1 Maxima and Minima in class Wednesday  
Exam 2: Wednesday, Mar 6th out of class  
10.2 Concavity and Second Derivative Test | Covers 9.9, 11.1 – 11.4, 14.1, 14.2  
10.1 p. 647: 1-35 odd,47,51,53  
Covers 9.9, 11.1 – 11.4, 14.1, 14.2  
10.2 p. 660: 1-23 odd,27,31 |
| Mar 11  | SPRING BREAK |  |
| Mar 18  | 10.3 Optimization Problems  
10.4 Optimization/ Applications to Business  
10.5 Rational Functions | 10.3 p. 671: 1-19 odd,25,27,29,33,35,37  
10.4 p. 680: 3,5,11,15,17,19,21,27,29,31  
10.5 p. 689: 1-19 odd,25,27,35 |
| Mar 25  | Review/Extra Instruction  
12.1 Indefinite Integrals in class Wednesday  
Exam 3: Wed, March 27th out of class  
Easter Holiday | Covers 10.1 – 10.5  
12.1 p. 753: 1-29 odd,41,43,47  
Covers 10.1 – 10.5 |
| Apr 1   | 12.2 The Power Rule  
12.3 Integrals of Expo/Log Functions  
12.4 Applications of Integrals | 12.2 p. 762: 1-33 odd,43  
12.3 p. 771: 1-27 odd,43,49  
12.4 p. 780: 1-11 odd |
| Apr 8   | Catch up day  
12.5 Differential Equations  
Review/Extra Instruction | 12.5 p. 788: 1-27 odd, 39, 41  
Covers 12.1 – 12.5 |
| Apr 15  | 13.1 Integrals and Area in class Monday  
Exam 4: Mon, April 18th out of class  
13.2 Definite Integrals/Fund. Theorem of Calculus  
13.3 Areas between curves | 13.1 p. 806: 1-7 odd, 15-25 odd  
Covers 12.1 – 12.5  
13.2 p. 816: 1-43 odd,57  
13.3 p. 825: 1-31 odd,37 |
| Apr 22  | 13.5 Tables of Integrals  
13.7 Improper Integrals  
Catch up day | 13.5 p. 840: 1-13 odd, 17-23 odd  
13.7 p. 852: 1-9 odd,21 |
| Apr 29  | Review/Catch up |  |
| Finals Week | MATH 1325.001 Final Exam: Monday, May 6th 10:30 am – 12:30 pm |
Math 1325 – Elements of Calculus with Applications for Business
Course Syllabus

Course description:  Limits and continuity, the derivative, the antiderivative, the definite integral, and applications.

Credit hours: 3

The following is an excerpt from SFA Policy 5.4:

The federal definition of a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates:

1. Not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or 10 to 12 weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time, or;

2. At least an equivalent amount of work as outlined in item 1 above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

To this end, all students in courses offered by the Department of Mathematics and Statistics that wish to be successful should plan to spend a minimum of two hours outside of class for every credit hour associated with this course. Expected activities to be completed in the time outside of class include reviewing notes from previous class meetings, reading assigned course resources, completing all assigned exercises and projects, and performing periodic assessment preparation.

Course Prerequisites and Corequisites:  MATH 1324

Course outline:  Approximate time spent

- Derivatives  30%
  - Limits and continuity
    - Informal definition of Limit – description of process
    - Continuity and Limits to infinity
  - Definition of derivative and interpretations
  - Derivative rules
    - Power of x rule and linearity
    - Product and Quotient rules
    - Chain rule
    - Combination of rules, higher derivatives, applications

- Applications and other derivative rules  35%
  - Relative maxima and minima; curve sketching
  - Concavity; points of inflection
  - Optimization in business
  - Curve sketching involving asymptotes
  - More differentiation
    - Logarithmic and Exponential rules
    - Implicit differentiation

- Integration  35%
  - Indefinite Integration
    - Anti-differentiation
    - The power, logarithmic and exponential rules
    - Business applications
Student Learning Outcomes (SLO): At the end of MTH 144, a student who has studied and learned the material should be able to:

1. Find limits using graphs and algebraic techniques.
2. Recognize continuous functions.
3. Find derivatives and antiderivatives of algebraic functions, including compositions of functions.
4. Use implicit differentiation to solve related rates problems.
5. Use limits and derivative information to sketch graphs of functions and find extreme values of functions.
6. Use the Fundamental Theorem of Calculus to evaluate definite integrals.
7. Use definite integrals in probability and area computation problems.

There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and/or a service course.

Academic Integrity

The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

Withheld Grades Semester Grades (SFA Policy 5.5)

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of
computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

**Students with Disabilities**
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices.

**Student Wellness and Well-Being**
SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**
**The Dean of Students Office** (Rusk Building, 3rd floor lobby)
www.sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

**SFA Human Services Counseling Clinic** Human Services, Room 202
www.sfasu.edu/humanservices/139.asp
936.468.1041

**The Health and Wellness Hub** “The Hub”
Location: corner of E. College and Raguet St.
To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:
- Health Services
- Counseling Services
- Student Outreach and Support
- Food Pantry
- Wellness Coaching
- Alcohol and Other Drug Education
www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

**Crisis Resources:**
- Burke 24-hour crisis line: 1.800.392.8343
- National Suicide Crisis Prevention: 9-8-8
- Suicide Prevention Lifeline: 1.800.273.TALK (8255)
- Crisis Text Line: Text HELLO to 741-741

**Acceptable Student Behavior**
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy 10.4). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional...
forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full
discretion over what behavior is appropriate/inappropriate in the classroom.

Date of document: 08/23/2023