**Professor:** Jonathan Mitchell Ph.D.  
**Email:** mitchelljonat@sfasu.edu

**Email Guidelines:**
- Use your @jacks email.
- Use a suitable subject line
- Include the course and SECTION in which you are registered.
- Allow me 24 hours to reply (though often I’m much faster than that)

**YouTube Channel:** youtube.com/MathDoctorMitchell  
**Phone:** Office: 936-468-1606  
**Office:** Math 352  
**Office Hours:** Monday – Friday, 8:30 – 9:30AM or by appointment

**Department:** Mathematics and Statistics

**Class meeting times and places:**
- **Lecture:** TTh 12:30PM – 1:45PM, Bush Math room 359  
- **Lab:** W 1 – 2:15PM, Bush Math room 359

**Course Description:** This course continues the development of calculus – the study of motion and change. It covers applications and techniques of integration, improper integrals, infinite series and power series.

**Text and Materials:**
- **Calculator:** students may use a non-programmable, non-graphing calculator (e.g. TI-30 XS MultiView). Calculators that perform numerical differentiation or numerical integration (e.g. TI 36 X pro) are prohibited.

**Course Requirements**
- **When you arrive to class,** put your cell phone and other devices on silent (or turn off) and away from you unless told otherwise. Before any quiz or exam put away all smart watches.
- **Homework** — Exercises from the textbook will be assigned for each major topic in the course. Students are expected to start each HW assignment THE SAME DAY we cover that material.
- **Quizzes** — You will have periodic in-class quizzes. Some of these will be announced; some will not. No make-up quizzes will be offered. Your lowest quiz grade will be dropped at the end of the semester.
- **Projects** — Students will have two projects that comprise 8% of your grade. It will involve several parts. Take each part seriously. The first project is a group project, and the second will be an individual project.
- **Three in-class exams** — If a student must miss an exam due to an excused absence, special arrangements should be made at least one week in advance. Student ID with photo may be required for exams.
- **A cumulative final exam** — The final exam is  
  MATH 2314.001: Thursday, December 9, 10:30 AM - 12:30 PM
- **Preparing for class** – Students should be prepared to invest at least 1-2 hours per day outside of class reading the text, practicing examples, and working homework exercises. Check your @jacks email daily, as your instructor may send reminders, assignments, or announcements. On the day before class, students are expected to look at the schedule (online), see the topic to be covered during class, read the corresponding section in the textbook, print the available notes, and bring them to class the following day

**Tentative Content Schedule:** See D2L Brightspace

**Grading Policy:** Your grade will be computed by a weighted average with the following items and percentages.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW &amp; Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Projects</td>
<td>6%</td>
</tr>
<tr>
<td>Final Exam (Dec. 9, 2021)</td>
<td>25%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>17%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>20%</td>
</tr>
<tr>
<td>Exam 3</td>
<td>22%</td>
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</tbody>
</table>
**Attendance Policy:**
Students are expected to actively participate in class. Because this course is going to be a combination of face-to-face and remote access, here are three general (and overlapping) paths by which students can demonstrate their participation. (1) each student should show up to class on time and engage in the discussion by asking questions, having the slides, writing notes, and working relevant exercises without being a distraction to others. (2) the student will log into the live-stream via zoom and engage with the discussion by voicing questions and/or the “chat” feature. (3) the student will need to demonstrate active participation other ways, including but not limited to emailing the instructor questions, submitting documents clearly, punctually, and professionally to the appropriate dropbox, attending (possibly virtual) office hours, etc.

**Tips for Success:**
1. Print the slides. Attend every class. Take notes. Ask questions.
2. Be prompt and professional. Remove your head phones. Put your phone away without being asked.
3. Check your SFA email at least once per day. I will do the same.
4. Do all assigned HW exercises independently and promptly. Cancel Chegg (slater, wolfram alpha, symbolab) subscription, self-evaluate, use a timer, etc.
5. Do not ask for extra credit. Do not ask, “Is THAT going to be on the exam?” or it will be.

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.

See [http://www2.sfasu.edu/math/docs/syllabi/MATH2314Syllabus.pdf](http://www2.sfasu.edu/math/docs/syllabi/MATH2314Syllabus.pdf) for elements common to all sections.
Math 2314 – Calculus II (Lecture)
Course Syllabus

Course description: Applications and techniques of integration, improper integrals, infinite series and power series.

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;

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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: MTH 233

Course outline:

- **Applications of the definite integral**
  - Volumes of surfaces of revolution
  - Arc length
  - Surface area
  - One or more from the following applications:
    - Work
    - Fluid pressure and forces
    - Moments and centers of mass
  
  Approximate time spent: 30%

- **Techniques of Integration**
  - Basic integration techniques
  - Integration by parts
  - Integration by partial fractions
  - Trigonometric substitutions
  - Numerical integration
  - Improper integrals

  Approximate time spent: 30%

- **Infinite Sequences and Series**
  - Sequences
  - Infinite series
    - Geometric series
    - Harmonic series

  Approximate time spent: 40%
- General series
  - Integral test
  - Comparison tests
    - Direct comparison test
    - Limit comparison test
  - Ratio and root tests
  - Alternating series
    - Absolute convergence
    - Conditional convergence
  - Power series
  - Taylor and Maclaurin series

Program Learning Outcomes (PLO): Students graduating from SFA with a B.S. Degree and a major in mathematics will:

1. Written Communication - SFA Mathematics majors communicate mathematical ideas effectively in written form, integrating mathematical notation correctly and consistently.

2. Verbal Communication - SFA Mathematics majors communicate mathematics effectively to diverse audiences.

3. Mathematical Maturation - SFA Mathematics majors grow from a computational understanding of mathematics to an integrated approach which includes critical thinking proficiency, computational facility, conceptual understanding, and problem-solving persistence.

Student Learning Outcomes (SLO): At the end of MATH 2314, a student who has studied and learned the material should be able to:

1. Extend the definition of the definite integrals to applications, other than area under a curve, including volumes of surfaces of revolution, arc length, and surface area, as well as to examples from other academic fields which might include work, fluid forces, or moments and centers of mass. [PLO: 1, 2, 3]

2. Demonstrate mastery of basic integration techniques. [PLO: 1, 2, 3]

3. Solve more complicated integrals by applying techniques including integration by parts, partial fractions, and trigonometric substitutions. [PLO: 1, 2, 3]

4. Recognize that the Fundamental Theorem of Calculus does not allow for the computation of all definite integrals and be able to apply approximation techniques as an alternative. [PLO: 1, 2, 3]

5. Recognize an improper integral and apply limits to find a solution. [PLO: 1, 2, 3]

6. Define infinite sequences and series and determine convergence and divergence behavior by appropriately applying strategies such as the integral test, comparison tests, and ratio and root tests. [PLO: 1, 2, 3]

7. Recognize alternating series and determine absolute and conditional convergence behavior. [PLO: 1, 2, 3]

8. Determine the radius and interval of convergence of a power series. [PLO: 1, 2, 3]

9. Develop Taylor/Maclaurin Series expansions for basic functions. [PLO: 1, 2, 3]

This course meets educator preparation standards for one or more certification programs; a complete listing of all the educator preparation standards this course meets can be found at: https://sfasu.edu/docs/jacksteach/jacksteach-standards-alignment-chart.xlsx.

Academic Integrity
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

The penalty for a student found cheating on any part of an assignment, quiz, or exam in this class will range from a grade of zero on the work to a grade of F in the course, and may result in additional, more severe disciplinary measures. A student who allows another to copy his work and the student copying the work are both guilty of cheating. Do your own work. Do not show your completed work to others. Do not allow others to copy your work.
Definition of Academic Dishonesty (SFA policy 4.1):
Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:

- using or attempting to use unauthorized materials on any class assignment or exam;
- falsifying or inventing of any information, including citations, on an assignment;
- helping or attempting to help other student(s) in an act of cheating or plagiarism.

Plagiarism is presenting the words or ideas of another person as if they were one’s own. Examples of plagiarism include, but are not limited to:

- submitting an assignment as one’s own work when it is at least partly the work of another person;
- submitting a work that has been purchased or otherwise obtained from the Internet or another source;
- incorporating the words or ideas of an author into one’s paper or presentation without giving the author credit.

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.

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.

SFASU Mental Health Statement: SFASU values students’ mental health and the role it plays in academic and overall student success. 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:
SFASU Counseling Services
www.sfasu.edu/counselingservices
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services Room 202
936-468-1041

Crisis Resources:
Burke 24-hour crisis line 1(800) 392-8343
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. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

Date of document: 08/16/2021