MTH 133 • Sections 001, 750, 751 • Plane Trigonometry • Spring 2020 • Syllabus

Instructor and Class Meeting Information

Instructor

- **Name:** Dr. Brian Beavers
- **Department:** Mathematics and Statistics
- **Email:** beaversbd@sfasu.edu
- **Web Site:** [http://faculty.sfasu.edu/beaversbd](http://faculty.sfasu.edu/beaversbd)
- **Office Phone:** 936.468.1433
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- **Personal ZOOM Meeting Room:** [sfasu.zoom.us/my/drbeaverssf](sfasu.zoom.us/my/drbeaverssf)
- **Offices:** Math Building 310, STEM Building 310
- **Office Hours:** TBA

Class Meetings

**Class Meetings and Location:** 8:00-8:50am MWF in Math Building 209 (Section 001), or in ZOOM meetings at [sfasu.zoom.us/j/572111914](sfasu.zoom.us/j/572111914) (Sections 750 and 751). Meetings will be recorded and links to recordings will be posted in D2L. Attendance and active participation is expected of all students for all regular class meetings; see the attendance and make-up policy, below, for more details on excused absences.

**Course Expectations:**

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 at least 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.

Required Materials

- *Precalculus, v. 3.0*, by Edward B. Burger and published by FlatWorld. You may purchase Online Access only for $39.95, but purchase of Online Access with Color Printed Textbook is preferred ($64.95). Purchase is needed to access online homework assignments; online homework assignments can be found in the D2L course for this class. Please sign up for FlatWorld using your Jacks email address.
  - Course link: [https://students.flatworldknowledge.com/course/2590838](https://students.flatworldknowledge.com/course/2590838)
  - Use your SFA Jacks email address when registering with FlatWorld.
- Functional computer and internet connectivity, preferably high-speed for D2L and other SFA-provided resources.
- Calculator: At least a scientific calculator is required. I recommend the TI-30XS, TI-34, or TI-36X Pro. Use of calculators may be prohibited on in-class graded work; for example, graphing calculators may be prohibited on the test covering the graphing of trigonometric functions.

Course Description

Trigonometric functions of angles, radian measure, fundamental identities; addition, product, and half angle formulas, solution of triangles; polar coordinates; inverse trigonometric functions, complex numbers.

Learning Objectives

See the [departmental syllabus](https://students.flatworldknowledge.com/course/2590838) online.

Course Introduction & Requirements
In high school and (if you took it) College Algebra, you have learned a lot about the basic problems of mathematics including those involving geometric shapes and graphs, solving equations, and word problems. In this course, we kick things up a notch. We start to put the basic concepts to new and creative uses. Trigonometry is as old as arithmetic and is even older than algebra. Since humans have been adding, subtracting, multiplying and dividing, they have also used triangles to make sense of more complicated shapes, to navigate the seas, and to predict the motions of the planets. Trigonometry is not just this ancient system of measuring angles and lengths in triangles and circles. Modern trigonometry is the gateway to higher mathematics and foundational for modern science and engineering in ways the ancients could not have imagined. In particular, the trigonometric relationships we will study are the foundations for modern electronics. Each week we will meet on MWF for 50 minutes to work on the main skills of the course.

Course Outline

The course content will be covered in chapters 5, 6, 7, and 10 in Berger's *Precalculus*. The list of chapters with approximate percentage of course time are as follows:

- Chapter 5: Trigonometric Functions (40%)
- Chapter 6: Analytic Trigonometry (30%)
- Chapter 7: Applications of Trigonometry (20%)
- Chapter 10: Complex Numbers (10%)

Also see the departmental syllabus online for the course outline broken down by topics.

Grading Policy

Computation of Course Grade

Your course grade will be determined by your performance on graded work in the following categories: (1) three tests; (2) quizzes, homework, and in-class assignments ("participation"); and (3) a comprehensive final exam. Your final course grade will be the weighted mean as follows:

- "Participation" - 15%. This is the mean of your scores, equally weighted, on the various assignments that I will collect during the course. Many assignments will be electronic assignments in the FlatWorld homework system as linked in D2L. Others will be quizzes in class or written homework to be turned in. All assignments will be listed in the D2L course and all grades can be found in the Grades section of D2L for your account.
- "Test 1," "Test 2," "Test 3" - 20% each, and "Final Exam" - 25%. You will be required to complete three tests and a final during this course. For each of the first three tests you will be allowed 50 minutes, and you will be allowed 2.5 hours for the final exam. The first two tests will be before the Drop date so that you have a good indication of your course grade before the last day to withdraw with a W.
• Test Dates:
  - Test 1: TBA
  - Test 2: TBA
  - Test 3: TBA
  - Final Exam: Monday, May 4, 8:00-10:30am

Score Descriptors

Tests, the Final Exam, and your final course letter grade will be graded on the "standard 10-point" scale based on the percentage (rounded to the nearest percent) of total points earned by the student on the exam or on assignments:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>[90%, 100%]</td>
</tr>
<tr>
<td>B</td>
<td>[80%, 90%)</td>
</tr>
<tr>
<td>C</td>
<td>[70%, 80%)</td>
</tr>
<tr>
<td>D</td>
<td>[60%, 70%)</td>
</tr>
<tr>
<td>F</td>
<td>[0%, 60%)</td>
</tr>
</tbody>
</table>

Assignments counting towards the Participation component will be graded holistically on a 0-10 scale based on completion and performance; the overall Participation course component will be the mean of these scores, converted to a percentage out of 100. The various scores are described below. To summarize, a "passing" score is a 7 or higher and a "failing" score is a 6 or lower. Each score will take execution, communication, and correctness into account. I am using this system so that I can better communicate to you whether you understand the material well enough or not. Your primary goal is to earn a 7 or better on each assignment. In addition, for any group assignments, participation by each group member will be considered.

<table>
<thead>
<tr>
<th>0-5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9 or 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failing (&quot;F&quot;)</td>
<td>Deficient (&quot;D&quot;)</td>
<td>Average (&quot;C&quot;)</td>
<td>Good (&quot;B&quot;)</td>
<td>Outstanding (&quot;A&quot;)</td>
</tr>
<tr>
<td>This score means that either you did not complete the assignment, or your mathematics or communication shows serious and fundamental errors.</td>
<td>This score means that you show some understanding but the flaws in mathematics</td>
<td>This score means that, overall, you understand the material well enough to pass, but you made several mistakes in the mathematics</td>
<td>This score means that, overall, you understand the material well, but made minor mistakes in the mathematics</td>
<td>These scores means that your mathematics and communication are flawless or near-flawless</td>
</tr>
</tbody>
</table>
You need to review prerequisite material and the basics of what was being assessed. You must complete every assigned problem in order to score higher than a 5.

Note that certain mistakes by themselves will automatically drop you to a 6 or lower because they are common but fundamental errors that wreck havoc on the truth of your work or fundamentally change the difficulty level of the task at hand. Also, be sure to think about what your writing communicates to a reader. I grade what you have said, not what you meant to say.

### Make-Up, Communication, Academic Dishonesty, and Other Class Policies

- It is your responsibility to be aware of due dates and to have access to a computer and other equipment that can handle the necessary work, and to schedule enough time to complete the assignments. Don't wait until the last minute to start on your assignments; start on them immediately so that you have time to sufficient time to think about them before the deadline.
- Generally, missed assignments cannot be made up except in the case of an extended, but excused, absence (such as a week-long illness). To compensate for this in the case of excused absences, I will drop a number of your lowest participation grades at the end of the semester before computing your final course grade.
- Deadlines may be extended at the discretion of the instructor in case of technical difficulties or good excuses, but you should make every effort to avoid doing things at the last minute.
- Please don't hesitate to contact me if you have questions. You may call my office or work mobile number, leave a voice mail, text my work mobile number, meet with me in my ZOOM personal meeting room, or e-mail me. I only have five scheduled office hours on campus, but half my duties are technical support for the college, so I can usually easily be found in or around my office, the math building, or the science building during the week. So, schedule a time to meet me in person or online during the week if my office hours don't fit your schedule.
- However, you should hesitate to contact me if the information you are asking about can be easily found in the syllabus or content in D2L. Check those resources before asking me. Issues needing your immediate attention will be posted as news items here in D2L.
• You bear some responsibility to help make the class a welcoming learning environment. See the SFA Way, below, as a reminder of how we all can work together to make this class a safe and respectful learning environment. I also pledge to follow the SFA Way.

• You are expected to attend and participate every day; your grade on assignments can be affected by nonparticipation. I will track attendance.

• Academic dishonesty ("cheating") is a most serious offence, resulting in a grade of 0 on the assignment and being reported to the university. Remember, academic dishonesty is determined by what I consider cheating; what I consider cheating may not be the same as what you consider to be cheating. If you have any questions as to what I consider cheating, it is your responsibility to ask me about it ahead of time. Here are some of the ways I define academic dishonesty for the various components of this class. These are examples and not exhaustive lists of what I consider cheating. See also the official SFA policy later in the syllabus.
  
  ○ Overall: Copying or paraphrasing from any source without citation or without explicit permission. Exceptions for this are mathematical formulas and notes that I give you.
  
  ○ Tests and final exam: Do not use any materials besides those provided at the test or otherwise expressly permitted by the instructor. You will be permitted to use a writing instrument and scratch paper on each test. Calculator requirements and restrictions will vary by test. Water or other drinks are permitted at the discretion of the instructor or testing facility after inspection. You may not talk to anyone else in the class about any specifics on the test unless neither of you have taken the test and until after both you and the other student have taken the test. For those of you testing off-campus, your chosen proctor may have more restrictive requirements than me.

  ○ Assignments intended for individuals: copying or paraphrasing from other students is prohibited. Individual assignments are intended to measure your understanding of the material of the course, not anyone else's. As individual work, it is normal to expect that your work should have some significant differences that indicate your individuality. Just changing a few words or symbols from someone else's work counts as cheating. You work should reflect your true understanding of the material, not just responses parroted or cobbled together from others in class or outside class, including the internet in general. With advance permission, you may work together on some assignments. But if you do so, indicate somewhere in the assignment who you worked with. You should make a deliberate effort to make you work look different from the person you worked with. "We worked together" is not a valid excuse for individual assignments to look the same unless you have explicit permission from me. The Stop & Think and other activities are there for you to discuss with others so you can prepare for the Individual Assignments.

• Make sure you have read this entire syllabus carefully because you are responsible for what lies within it. Ignorance of the rules is not an excuse.
• Sleep and relax! Well...outside of class, that is. It is hard to do math well with a tired or anxious mind!
• Learn mathematical terminology! It’s hard to think and talk about concepts when you don’t know what the words mean that we’re using. In mathematics, "owning" the definition is your first responsibility: for any math term, be able to give a formal definition, an informal definition, an example that illustrates the concept, and "non-examples" (examples of situations that are close to being right, but not quite).
• Do. The. Homework. All of it. Several times if necessary. Create new problems if you run out of problems to practice.
• Strategize! Take the time to think about how the different types of problems are solved and create a road map in your mind how to get to the solution.
• The quality of the time is as important as the quantity of the time you spend studying. You have to understand the concepts and basic examples before you can master the harder problems. Regularly look back at the big picture when you get stuck on an immediate detail.
• Get help! If you’re alert, know the words, and understand the examples but are still stuck, then get help from me or a tutor.
• Learning math is a lot like learning anything else – sports, music, etc. Some have natural talent, some don’t. At the beginning, you have to drill those basic moves until you can do them almost without thinking in order to overcome your anxiety. Only then can you concentrate on improving your skills and learning more sophisticated moves. I am your coach; I can’t make the moves for you. I can show you the mechanics of the move and explain why the move does what it does, but only you can do it for yourself. You must both practice and reflect on your performance in order to win!
• Find your motivation and hold onto it! It’s hard to do well in something you don’t want to do, and it’s easy to get lost in the drudgery and lose focus. But, math can be very beautiful and enjoyable with a little motivation!
• It's OK to fail! Well... on the homework that is. Everyone can learn mathematics. Like any other skill, we make many mistakes until we have practiced enough to avoid them. As you’re learning new material, don’t beat yourself up if you make a lot of mistakes at first, and even later when you come back to a topic after a while. It's all a normal part of the learning process. Just practice enough so that you can find your mistakes on the tests (and other graded work).

The SFA Way

"...striving for personal excellence in everything that we do."

At Stephen F. Austin State University, our faculty, staff, alumni and students believe in doing things "The SFA Way." We expect the best from ourselves and from each other, and we hold each other accountable when we fail to maintain these standards.

Root Principles
Grounded in the five "Root Principles" below, members of the SFASU community seeks to strive for personal excellence in everything that we do.

*The Principle of Respect:*

Lumberjacks command respect and treat others with respect • They are considerate of others and tolerant of differences • They demonstrate respect for those around them by avoiding the use of offensive or profane language • They do not threaten or harm anyone and deal peacefully and civilly with conflict.

*The Principle of Caring:*

Lumberjacks think of the needs of others and seek to improve the quality of life of those around them • They are compassionate, empathic and kind • They respond with humility to those they have helped and express gratitude freely to those who help them • Lumberjacks prepare themselves to become leaders in their communities and workplaces • They dedicate themselves to excellence in their chosen field of study and to using what they learn in the service of others.

*The Principle of Responsibility:*

Lumberjacks do what is right • They persevere in times of adversity • Through self-control and self-discipline, they strive to do their best • Lumberjacks challenge each other to exceed expectations • They are active learners both inside and outside of the classroom • They are reliable; they do what they say they will do • Lumberjacks hold themselves accountable for their decisions •

*The Principle of Unity:*

Lumberjacks are loyal to their friends, family, university, state and country • Lumberjacks stand together against any adversary • They recognize that though we are very different from one another, we are united by the Lumberjack Spirit. Lumberjacks seek to understand the people and world around them • When one lumberjack fails, all fail • When one lumberjack succeeds, all succeed.

*The Principle of Integrity:*

Lumberjacks have the courage to do what is right, even when it is hard or unpopular • They respond to each situation with steadfast values that are not subject to change based on the actions of others • They seek opportunities to practice effective and ethical leadership • Lumberjacks are honest; they do not deceive, cheat or steal • Lumberjacks stand up for those who cannot stand up for themselves • As lifelong learners, lumberjacks are committed to continuously improving themselves.
Abiding by university policy on academic integrity is a responsibility of all university faculty and students. Faculty members must promote the components of academic integrity in their instruction, and course syllabi are required to provide information about penalties for cheating and plagiarism as well as the appeal process.

**Definition of Academic Dishonesty**

Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) falsification or invention of any information, including citations, on an assignment; and/or, (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism include, but are not limited to: (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from the Internet or another source; and, (3) incorporating the words or ideas of an author into one's paper or presentation without giving the author due credit. Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp.

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**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.

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**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/.
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 D-34.1). 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.