

**SYLLABUS**  
**MAT 172**  
**PRECALCULUS TRIGONOMETRY**

**Faculty Information**

**Instructor:** Charles Hall, M.A. Ed.  
**Email Address:** hall.charles@abtech.edu  
**Office:** Elm 340  
**Phone:** 254-1921  
**Office Hours:** **Before and after class**

**Course Information**

**Course Title:** Precalculus Trigonometry  
**Course Number:** MAT 172 D1  
**Credit Hours:** 3  
**Contact Hours:** 3  
**Class Location:** ELM 346  
**Class Meeting Time:** M, T, W 8:00-9:20  
**CourseCompass ID # :** hall74107

**Course Description** This is the second of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on properties and applications of transcendental functions and their graphs, right and oblique triangle trigonometry, conic sections, vectors, and polar coordinates. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.

**Prerequisite:** Mat 171

**Corequisite:** Mat 172A D1

**Textbook:** Sullivan & Sullivan, *Algebra and Trigonometry 5<sup>th</sup> Edition (topics from ch. 6 -11)*

**Course Goal:** Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction.

**Course Specific Competencies:** Upon successful completion of the course, the student will be able to:

- Graph, transform, and solve problems involving logarithmic and exponential functions.
- Graph, transform, and solve problems involving trigonometric equations.
- Solve applied problems involving right and oblique triangles.
- Graph, transform and solve problems involving polar coordinates.
- Graph, transform and solve problems involving vectors.
- Use analytic geometry to solve problems.

## **Reinforcement Experiences for General Education Cross-Curriculum Competencies**

The course encapsulates reinforcement experiences for the general education cross-curriculum competencies:

- Communicate effectively in speaking, writing, reading, and listening.
- Locate, evaluate, and use information to analyze problems and make logical decisions.
- Apply math skills and/or natural science knowledge appropriately to organize, analyze and make information useful.
- Develop the ability to succeed as a self-directed learner.

**Grading Policy:** You will have 5 chapter tests, on-line homework assignments, and a cumulative final exam during the semester. Your chapter test average will account for 70% of your final grade. The online homework assignments will account for 10% of your final grade. *The final exam is mandatory and will count 20% of your final grade.* All tests will be closed book. **Makeup tests will not be given.** Any test missed will be counted as a zero. If for any reason it is necessary for you to withdraw from this class, you must complete the appropriate form and submit it to the Records and Registration Office by the deadline. If you quit attending class without completing the appropriate forms your grade will become an “F”. The final grade will be an average of all your test grades, A(90-100), B(80-89),C(70-79),D(60-69), F(below 60)

**Final Exam Policy:** Final exams for all classes are given during the last 1-2 hours of the regular class schedule.

**Attendance Policy:** To receive course credit, a student should attend a minimum of 80 percent of the contact hours of the class. Upon accumulating absences exceeding 20 percent of the course contact hours, the student may be dropped from the class with a grade of “U” at the discretion of the instructor. Students are encouraged to arrive to class on time. Students who arrive tardy to class have missed the roll call and have been marked absent by the instructor. Consequently, it is the responsibility of the student to check with the instructor after class to change the absence to a tardy. A tardy is defined as arriving late for class, leaving early, or being away from class without permission during class hours. Three tardies may constitute one absence.

## **Summer Session - 2009**

Registration: Current and Continuing Students	<b>May 4 - 8</b>
General Registration	<b>May 11 - 15</b>
Last Day to Pay Tuition and Fees	<b>May 15*</b>
<i>* Unpaid registrations will be deleted from the computer registration system at 4:30 p.m.</i>	
Late Registration	<b>May 18 - 22</b>
Last Day to Pay Tuition and Fees for Late Registration	<b>May 22*</b>
<i>* Unpaid registrations will be deleted from the computer registration system at 4:30 p.m.</i>	
New Student Welcome	<b>May 22, 9:00 a.m.</b>
Memorial Day College Holiday	<b>25-May</b>
Classes Begin	<b>26-May</b>

Schedule Adjustments	<b>May 26 - 27</b>
Last Day to Apply for Summer Graduation	<b>22-May</b>
Last Day to Drop for a Partial Refund	<b>8-Week Session: May 29</b>
	<b>10-Week Session: June 1</b>
Independence Day College Holiday	<b>3-Jul</b>
Last Day to Withdraw	<b>8-Week Session: July 7</b>
10-Week Session: July 10	
Last Day of Class/Examinations	<b>8-Week Session: July 21**</b>
** July 21 will be scheduled as a Friday make-up day for both sessions.	<b>10-Week Session: August 4</b>
Summer Graduation	<b>7-Aug</b>
Total Class Days	<b>8-Week Session: 40</b>
	<b>10-Week Session: 50</b>

**Code of Student Conduct:** Academic Dishonesty – You may not deceive any official of the college by cheating on any assignment, exam, or paper. This includes plagiarism, which is the intentional theft or unacknowledged use of another’s words or ideas. Plagiarism includes (but is not limited to) paraphrasing or summarizing another’s words *or works* without proper acknowledgement, using direct quotes of material without proper acknowledgement, or purchasing or using a paper *or presentation* written *or produced* by another. The faculty at A-B Tech *may* also consider presenting as original work a paper written for one class to satisfy a requirement in another class to be academic dishonesty.

**Code of Classroom Conduct:** Asheville-Buncombe Technical Community College is an institution for adult learning. It is a partnership between instructors with the desire to teach and students with the desire to learn. In order to create an appropriate environment for teaching and learning to flourish, there must be respect for the instructor and fellow students. Listed below are guidelines for classroom behavior which the College has established to ensure that the learning environment is not compromised.

1. Attendance: You are expected to be in class the entire class time. Do not enter late or leave early. Rare exceptions may be excused, particularly under emergency circumstances, but you should be prepared to explain your tardiness to the instructor after class. Likewise, the need to leave early should be explained to the instructor before class.
2. Absences: Inform the instructor in advance, if you know you are going to miss a class. Also, take responsibility for getting missed assignments from other students. Do not expect that you will be allowed to make up work, such as unannounced quizzes or tests, after an absence. Instructors are not responsible for re-teaching the material you missed because of absence.
3. Conversation: Do not carry on side conversations in class.
4. Other Activities: You may not work on other activities while in class. This includes homework for other courses or other personal activities.

5. Internet: In classes where Internet access is provided, you may use the Internet for valid, academic purposes only. You may not use it for open access to other non-academic sites which are unrelated to the course.
6. Sleep: Do not sleep in class.
7. Attitude: You are expected to maintain a civil attitude in class. You may not use inappropriate or offensive commentary or body language to show your attitude regarding the course, the instructor, assignments, or fellow students.
8. Profanity and Offensive Language: You may not use profanity or offensive language in class.
9. Cell phones and beepers: You may not receive or send telephone calls, pages, or texts during class. **You are responsible for turning off cell phones and beepers upon entering class.**
10. Guests: You may not bring unregistered friends or children to class.
11. Food, Drink, Tobacco Products: You may not have food or drink in class. You may not use tobacco products on the campus of A-B Tech.
12. Personal Business: You may need to transact personal business with the instructor, asking him or her to sign forms. Plan to do this before instruction begins or after class.

Typically, violations of the Code of Classroom Conduct will be dealt with as minor infractions. However, repetition of minor infractions or other more serious violations of the Code of Student Conduct may lead to removal from the classroom while the matter is resolved and referral to the Vice President for Student Services for disciplinary action.

**Other Information:** Additional help in math and related courses is available in the Academic Learning Center, Laurel Building, Room 118. The hours are from 9am-6:30pm M-Th, and 9am-1:00pm on Friday.

**Calculator:** A graphing calculator is required for this course. I will not permit the TI-89 or the TI-92 to be used on tests. Your calculators may be cleared before examinations. Sharing calculators on examinations is not permitted.

**Statement of Right to Make Changes:** I reserve the right to make changes in the syllabus. Any changes will be announced in class.

**MAT 172  
PRECALCULUS TRIGONOMETRY  
Content Outline**

**CHAPTER 6 EXPONENTIAL AND LOGARITHMIC FUNCTIONS**

**6.1 Composite Functions**

**6.2 One-to-One Functions and Inverse Functions**

**6.3 Exponential Functions**

- 6.4 Logarithmic Functions
- 6.5 Properties of Logarithms
- 6.6 Logarithmic and Exponential Equations

**CHAPTER 7 TRIGONOMETRIC FUNCTIONS**

- 7.1 Angles and Their Measure
- 7.2 Right Triangle Trigonometry
- 7.3 Computing the Values of Trigonometric Functions and Acute Angles
- 7.4 Trigonometric Functions of General Angles
- 7.5 Unit Circle Approach and Properties of the Trigonometric Functions
- 7.6 Graphs of the Sine and Cosine Functions
- 7.7 Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions

**CHAPTER 8 ANALYTIC TRIGONOMETRY**

- 8.1 The Inverse Sine, Cosine, and Tangent Functions
- 8.2 The Inverse Trigonometric Functions Continued
- 8.3 Trigonometric Identities
- 8.4 Sum and Difference Formulas
- 8.5 Double-Angle and Half-Angle Formulas
- 8.6 Product-to-Sum and Sum-to-Product Formulas
- 8.7 Trigonometric Equations
- 8.8 Trigonometric Equations Continued

**CHAPTER 9 APPLICATIONS OF TRIGONOMETRIC FUNCTIONS**

- 9.1 Applications Involving Right Triangles
- 9.2 The Law of Sines
- 9.3 The Law of Cosines

**CHAPTER 10 POLAR COORDINATES; VECTORS**

- 10.1 Polar Coordinates
- 10.2 Polar Equations and Graphs
- 10.3 The Complex Plane and De Moivre's Theorem
- 10.4 Vectors
- 10.5 The Dot Product

**CHAPTER 11 ANALYTIC GEOMETRY**

- 11.1 Conics
- 11.2 The Parabola
- 11.3 The Ellipse
- 11.4 The Hyperbola

**\*\*THIS SCHEDULE IS TENTATIVE AND IS SUBJECT TO CHANGE\*\***



**MAT 172 D1**  
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**Your Acknowledgement**

I have been provided access to the course syllabus for Mat 172, understand what is expected of me, and agree with the provision set forth in the syllabus.

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Print name

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Student I.D. Number

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Signature

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Date