

SYLLABUS
MAT 122
ALGEBRA/TRIGONOMETRY II

Faculty Information

Instructor: Deane W. Merrill, Ph.D. Physics
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Office: none
Phone: home 828-0305-9443 or 828-505-0763 (email is preferred)
Office Hours: by appointment

Course Information

Course Title: Algebra/Trigonometry II
Course Number: MAT 122 D1
Credit Hours: 3
Contact Hours: 4
Class Location: Elm 324
Class Meeting Time: M, T, W, TH 08:00-08:50
Syllabus (html): <http://merrill.olm.net/abtech/spr2009/mat122d1/mat122d1syllabus.htm>
Syllabus (doc): <http://merrill.olm.net/abtech/spr2009/mat122d1/mat122d1syllabus.doc>

Course Description This course extends the concepts covered in MAT 121 to include additional topics in algebra, function analysis, and trigonometry. Topics include exponential and logarithmic functions, translation and scaling of functions, Sine Law, Cosine Law, vectors, and statistics.

Prerequisite: MAT 121

Corequisite: None

Textbook: John C. Peterson, *Technical Mathematics*, Third Edition, ISBN 0-7668-6188-0.

Course Goal: Upon completion, students should be able to demonstrate an understanding of the use of technology to solve problems and to analyze and communicate results.

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

- add, subtract, multiply, divide, and simplify algebraic fractions;
- solve quadratic equations by factoring, completing the square, and by using the Quadratic Formula;
- apply the principles of vectors to solve practical problems;
- use the Law of Sines and the Law of Cosines to solve oblique triangles;
- graph trigonometric functions by using amplitude, period, phase shift, and horizontal or vertical displacement information;
- use probability, regression, and modeling to fit given data.

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: Your grade will be calculated as follows:

5 chapter tests	50%
Homework (*1)	10%
Quizzes (*2)	8%
Midterm exam	16%
Final exam	<u>16%</u>
Total	100%

(*1) “homework” = Skills Building Exercises, announced in class and by email. If you are absent, a homework assignment gets full credit if received on the day you return to class. Homework is not graded; it is counted “complete” or “incomplete.” Late homework gets 50% credit if received before the next chapter test.

(*2) Short unannounced quizzes will be given when time permits, usually at the end of the class, and usually on the material presented during that class. Missed quizzes receive no credit.

All tests and exams are closed book. If you miss a test or exam (except for the last chapter test and the final exam) you may make it up within one week outside class, provided your present attendance and homework averages are both above 80%. One week means *exactly* one week, i.e. *before* the class which is one week after the class you missed.

If for any reason you need 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".
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 %** of the contact hours of the class. Upon accumulating absences exceeding **20 %** of the course contact hours, the student may be dropped from the class with a grade of “U” at the

discretion of the instructor. A tardy is defined as arriving late for class, leaving early, or being away from class without permission during class hours. Three tardies constitute one absence. (*3)

(*3) In this class, tardy means 10 minutes after the announced class time. The classroom wall clock will be used.

Important Dates:

Spring Semester – 2009

Late Registration	January 5 - 9
Last Day to Pay Tuition and Fees for Late Registration	January 9
New Student Welcome	January 9, 9:00
am.	
Classes Begin	January 12
Schedule Adjustments	January 12 - 14
Minimester I	Jan 12 - Mar 9
Martin Luther King Jr. College Holiday	January 19
Last Day to Drop for a Partial Refund (Full term)	January 22
Late Start Semester First Class Day	January 20
Professional Development - 1/2 Day	February 17
Minimester II	Mar 10 – May 12
Last Day to Apply for Spring Graduation	February 27
Last Day to Withdraw from a full 16-Week Class	April 7
Student Break –or- Inclement weather makeup	March 13
Student Spring Break	April 13 - 18
Last Day of Class/Examination**	May 12
Spring Graduation	May 15
Total Class Days	80

** Up to three days may be made up due to inclement weather closings.

Activity Schedule:

This schedule will be used for most approved and announced student activities.

Normal Class Time	Activity Day Schedule
8:00 am	8:00-8:40 am
8:30 am	8:20-9:00 am
9:00 am	8:45-9:25 am
9:30 am	9:05-9:45 am
10:00 am	9:30-10:10 am
10:30 am	9:50-10:30 am
11:00 am	10:15-10:55 am
11:30 am	10:35-11:00 am*

11:00 am-1:00 pm Free for activities !

12:00 noon	1:00-1:40 pm
12:30 pm	1:20-2:00 pm
1:00 pm	1:45-2:25 pm
1:30 pm	2:05-2:45 pm
2:00 pm	2:30-3:10 pm
2:30 pm	2:50-3:30pm
3:00 pm	3:15-3:55 pm
3:30 pm	3:35-4:15pm
4:00 pm	4:00 pm

* 25 minute period

Inclement Weather Schedule:

The College will close when weather conditions are such that driving is hazardous.

The following procedure will be observed for inclement weather conditions:

1. Announcements concerning school operation will be made by 6:30 am on local radio and TV stations for day classes. A voice mail message will be recorded on the switchboard. If it appears that ice or snow may be cleared by mid-morning, the schedule below will be followed and all College personnel and students should report by 10am.
2. Closing or delaying the day programs does not automatically close evening classes. Announcements will be made on radio stations and the College switchboard no later than 3pm concerning the evening classes.
3. When weather conditions dictate early dismissal of the day or evening classes, the announcement will be made by telephone to each building on campus.
4. Commuters should exercise personal judgment concerning highway conditions regardless of College announcements, particularly those commuting from outlying areas.
5. Adjustments in the College calendar for days missed because of inclement weather will be made at the end of the semester.
6. Normal Class Time Delayed Opening

8 a.m.	10-10:40 a.m.
8:30 a.m.	10:20-11 a.m.
9 a.m.	10:45-11:25 a.m.
9:30 a.m.	11:05-11:45 a.m.
10 a.m.	11:30am-12:10 p.m.
10:30 a.m.	11:50am-12:30 p.m.
11 a.m.	12:15-12:55 p.m.
11:30 a.m.	12:35-1:15 p.m.
12 p.m.	1-1:40 p.m.
12:30 p.m.	1:20-2 p.m.
1 p.m.	1:45-2:25 p.m.
1:30 p.m.	2:05-2:45 p.m.
2 p.m.	2:30-3:10 p.m.
2:30 p.m.	2:50-3:30 p.m.
3 p.m.	3:15-3:55 p.m.
3:30 p.m.	3:35-4:15 p.m.
4 p.m.	4 p.m.

Important: If weather conditions become worse after the 6:30am announcement, an additional announcement closing school for the day will be made no later than 8:30am.
Oak Student Center will open at 8am for early arrivals.

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. (*5)
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)
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 or pages 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 in the buildings 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.

(*5) In this class you are tardy if you arrive more than 10 minutes after start time, as shown on the classroom wall clock.

(*6) The *only* permitted use of a computer in this class is to take lecture notes. During the lecture it may *not* be used, for example, to do homework for this course or another course. To ensure that this rule is observed, the instructor at his discretion may request an electronic copy of your notes from a particular 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.

Netiquette:

General

1. Understand that typed messages lack cues normally associated with face-to-face conversation. Without these supporting cues for context, satire or sarcasm can come across in unintended ways.
2. Use parenthetical explanation to explain meanings that might be misunderstood.
3. Do not criticize spelling or grammar but do check your own spelling, punctuation, and grammar.
4. Don't use all capital letters. In the online world, this is the equivalent of shouting and it is difficult to read.
5. All lowercase letters indicate mumbling.
6. Be brief and to the point.

Subject Lines

1. Keep subject lines short.
2. Make subject lines informative by indicating the content of the message.
3. Make subject lines clear and unambiguous.

Replying

1. If you excessively reply to ongoing discussions and include the original message, your messages will be very long and hard to follow.

2. For simple messages, quoting the original message when replying will clarify your response.
3. Using carets to indicate lines of text that are quoted.

Email

1. Unless you are explicitly given permission, don't publicly post email sent to you in private.
2. Recognize that instant delivery of email does not guarantee an instant response.
3. If you are sending information from another source, pay attention to whether the material is copyrighted and cite sources.
4. For important messages, compose a draft in a word processor so you can spell check it.
5. Be careful when addressing emails. One character out of place, or a ".com" suffix when the person's email really ends with ".edu", and your message won't be delivered.
6. If it is going to take considerable time to reply fully, try to acknowledge receipt of a message promptly and let the sender know that you will answer.

Attachments

1. Do not send huge attachments.
2. When you're replying to a message that has an attachment, do not include the attachment again.
3. Avoid sending attached files that lack filename extensions (that's because some computers won't be able to open them).

Flaming

1. Do not flame! Flaming refers to derogatory, abusive, threatening, sarcastic, rude, or otherwise mean-spirited messages directed at people.
2. If a message provokes a negative emotional response, put it away for a while, then reread it and see if you're misinterpreting it. If you don't understand a particular item, ask the sender for clarification before replying to an incorrect conclusion.
3. Messages are not secure. Remember, it's very easy for someone else to forward messages you thought were confidential.

4. Apologize. If there's been a misunderstanding or miscommunication, you can often nip a flame war in the bud by a brief apology.

5. Don't write anything that you won't want other people to be able to see for a long time (posts can be archived for years).

Discussions

1. Lurk before you leap. Lurking is visiting without participating. While it's rude to make a habit of lurking, a little

lurking can acquaint you with rules and procedures, help you get the "lay of the land," and prevent embarrassment.

2. Avoid posting non-informative messages on bulletin boards. Chat is more like a telephone, so saying "Me, too!" or "I

don't know" is accepted. But on bulletin boards, people don't like to read postings that aren't substantive.

Chat

1. Remember that chat rooms are "logged" (i.e., a record is kept of conversations).

2. Do not disrupt chat rooms by pasting large blocks of text into the input box (thus causing the screen to scroll faster

than other users are able to type) or otherwise act in a manner that negatively affects other users' ability to engage in real time exchanges.

3. If you are having a conversation that is off the main topic, please move to another chat room.

4. If you are a fast typist, please pause occasionally to let slower typists contribute to the discussion.

California State University at Fullerton

Excerpted from Bramucci, Robert. Cal State Fullerton.

Email Communication: You are responsible for all information sent to you by the instructor. Email communications from the instructor will be sent *only* to your student email address, e.g. johnqdoe@students.abtech.edu. If you prefer to receive your email at an alternate address, you must log in once to your student AB Tech student email account and arrange for messages to be automatically forwarded. Regardless of the originating address and the return address in a message you receive, replies should be directed to dmerrill@abtech.edu.

Other Information: Additional help in math and related courses is available in **The 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. The TI-86 will be the calculator used by the instructor for instruction purposes. Whatever calculator you use, you are responsible for understanding its operation. Bring it to every class, along with spare batteries. In tests and exams you may not share a calculator, nor use a calculator that is integrated with a wireless device.

Statement of Right to Make Changes: The instructor reserves the right to make changes in the syllabus. Any changes will be announced in class. In case of any disagreement, the announcement in class takes precedence.

**MAT 122
ALGEBRA/TRIGONOMETRY II
Content Outline**

- 7.1 Special products**
- 7.2 Factoring**
- 7.3 Factoring Trinomials**
- 7.4 Fractions**
- 7.5 Multiplication and Division of Fractions**
- 7.6 Addition and Subtraction of Fractions**

Chapter 7 Test

- 8.1 Introduction to Vectors**
- 8.2 Adding and Subtracting Vectors**
- 8.3 Applications of Vectors**
- 8.4 Oblique Triangles: Law of Sine**
- 8.5 8.5 Oblique Triangles: Law of Cosines**

Chapter 8 Test

- 10.1 Sine and Cosine Curves: Amplitude and Period**
- 10.2 Sine and Cosine Curves: Horizontal and Vertical Displacement**
- 10.3 Combinations of Sine and Cosine Curves**
- 10.4 Graphs of the other Trigonometric Functions**
- 10.5 Applications of trigonometric Graphs**
- 10.6 Parametric Equations**
- 10.7 Polar Coordinates**

Chapter 10 Test

MIDTERM EXAM

- 12.1 Exponent Functions**
- 12.2 The Exponent Function e^x**
- 12.3 Logarithmic Functions**

12.4 Properties of Logarithms
12.5 Exponential and Logarithmic Equations
12.6 Graphs Using Semi logarithmic and Logarithmic Paper

Chapter 12 Test

13.1 Probability
13.2 Measures of Central Tendency
13.3 Measures of Dispersion
13.4 Statistical Process Control

Chapter 13 Test

FINAL EXAM

Tentative Schedule**

Chapter(s)	no of sections	no of pages	no of days	day of test	Test date
7	6	28	14	14	W 2/4
8	5	37	11	25	Tu 2/24
10	7	49	15	40	M 3/23
7,8,10	19	114	1	41	Tu 3/24
12	6	36	13	54	W 4/22
13	4	34	9	63	Th 5/7
12,13	10	70	1	64	M 5/11

** This schedule is subject to change by the instructor as needed. Changes will be announced in class and by email. In case of disagreement, the class announcement takes precedence.

Dear Student,

Welcome to the Mathematics Department!

We look forward to working with you and providing you with the very best education in mathematics.

We are a seven-member team that boasts a combined experience of over one-hundred-fifty years in professional education. We are extremely proud of our services and our accomplishments, and we always strive to maintain the best of quality instruction and as well as adherence to high academic standards and goals. Because of this dedication, we enjoy an excellent academic reputation with the surrounding upper-division colleges and universities in the region. It is a high priority to maintain this reputation, and consequently the value of your degree.

In order to be successful in your Math class and to ensure that other students have the learning environment they deserve, we require that you adhere to the Code of Student Conduct located in your Student Handbook, and on your syllabus. A positive learning environment makes it much easier for any student to achieve their goals.

If it is necessary for you to discuss any personal issue with your instructor, it is imperative that you do so during their office hours or during an out of class appointment. We are happy to meet with you to talk about any issue that is relevant to your participation in class, or your grade in the course. We have appropriate and time-proven suggestions that should help you.

As a student at AB-Tech, it is expected that you to keep up with the class, turn in assignments on time, and take responsibility for your education. The instructor will assist you in every way possible that does not compromise the integrity of the course itself. Our reputation depends on it.

Again, Welcome to AB-Tech and have a great semester!

**R. Trent Codd, Jr.; Chairman; AA, BS, BSCS, MA, EASGC; 38 years of experience
Jerry L. Ashe; Instructor; AA, BS, MS; 22 years of experience
Jackie Caldwell; Instructor; BS, MA; 20 years of experience
Karma Crouch; Instructor; BS, MA Ed; 23 years of experience
Valerie Martin; Instructor; AA, BA, MS; 8 years of experience
Tammy Pagan; Instructor; AA, BS, MS; 20 years of experience
Robby Webb; Instructor; BA, MA; 23 years of experience**

**SYLLABUS
MAT 122
ALGEBRA/TRIGONOMETRY II**

Your Acknowledgement

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

Your name

Your student I.D. Number

Your signature

Date

dennie2:\\j:\dwmerrill\abtech\spr2009\mat122d1\mat122d1.docx (Word 2007) 1/11/09
dennie2:\\j:\dwmerrill\abtech\spr2009\mat122d1\mat122d1\mat122d1.doc (Word 2003)
dennie2:\\j:\dwmerrill\abtech\spr2009\mat122d1\mat122d1.htm (Web page, filtered)
<http://merrill.olm.net/abtech/spr2009/mat122d1/mat122d1syllabus.htm> (html)
<http://merrill.olm.net/abtech/spr2009/mat122d1/mat122d1syllabus.doc> (doc)