

Mathematics for Measurement, MATH 1333

Section: 1333.001 Synonym: 13103 Time: MW 5:40 – 6:55 p.m. Classroom: RVS 8131	Office Hours: MW 10:00 – 11:00 a.m. NRG 2147 MW: 2:00 – 2:30 p.m. NRG 2147 MW 4:35 – 5:35 p.m. RVS 8131
Instructor: Dr. Mary Parker Office Number: NRG 2147 Office Phone: 223-4846 (fax 478-6814) Email: mparker@austincc.edu Web: http://aconline.austincc.edu & http://www.austincc.edu/mparker/	By appointment: (Email at least a day in advance to ask for an appointment) MW 11:00 a.m. – 12:45 p.m. NRG 2147 MW 4:05 – 4:35 p.m. RVS 8131 Mon 7:00 – 7:30 p.m. RVS as arranged Additional times for appointments may be available for students who cannot attend these and for whom email and phone conversations have proved to be inadequate to resolve problems.

Course Description: A course designed for non-mathematics and non-science majors. Topics include logic, variation, functions, equivalence, congruence, right triangle geometry, and other measurement topics. Prerequisites: A passing score on the mathematics portion of the THEA test or a satisfactory score on the ACC Mathematics Assessment Test or MATD 0360 with a C or better and completion of TSI mathematics requirements.

Required Materials:

1. *Mathematics for Measurement*, by Mary Parker and Hunter Ellinger. The first part will be available in the bookstore at the beginning of the semester and the second part will be available later. The total cost of the purchased textbook materials is expected to be under \$30.
2. Student Geometry Kit from an office supply store with compass, protractor, drafting triangle (with a 90° angle,) ruler (with both cm. and inches) and a box to keep them in so they don't break or get lost.
3. Scientific calculator with trig functions
4. Graph paper
5. Loose-leaf notebook and at least 30 dividers
6. Device to punch holes so that you can put computer output into your looseleaf notebook.
7. Access to a computer spreadsheet program, in the ACC Learning Lab or at home

Instructional Methodology: This is a lecture/discussion course, taught in a computer classroom so that students can sometimes use computer spreadsheet software in class.

Course Rationale: This course is designed to introduce topics of variation in measurement, right-triangle trigonometry, and mathematical modeling for students who won't take higher-level mathematics courses. It satisfies the Core Curriculum requirement for mathematics.

Course Objectives

1. Increase/improve students' quantitative literacy.
2. Understand the innate variation in measured values and the various standard mathematical ways to communicate that variation.
3. Understand the complexities involved with using measured numbers in computations and be able to compute and communicate the resulting variability in the computed values.
4. Provide students with an opportunity to experience connections between geometry and algebra to increase their flexibility and confidence in problem-solving.

Calendar / Testing Schedule (May be revised. See the daily handouts for updated information.)

Jan. 14 – Feb. 8. (Weeks 1 – 4): Topics A – I. Review and Introductory Topics.

Feb. 11 – Mar. 8 (Weeks 5 – 8): Topics J – O. Includes topics from modeling, trigonometry, and approximate numbers.

Mar. 17 – Apr. 11 (Weeks 9 – 12): Topics P – U. Includes topics from modeling, trigonometry, and approximate numbers.

Apr. 14 – May 9 (Weeks 13 – 16): Topics V – Z. Includes topics from modeling, trigonometry, and approximate numbers.

There is a test at the end of each of the four parts of the course. The material in the course is cumulative – the later topics use the skills developed in the earlier topics. Thus, all tests are cumulative and cover material from the beginning of the course.

Grading: Each of the four tests counts 18%, the overall quiz grade counts 18%, and the homework grade counts 10%.

A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: below 60

If you believe that I have made a mistake on grading anything, write a note of explanation on a separate sheet of paper, staple it to the paper, and turn it in for re-grading. I am happy to discuss this with you outside of class, but grades will never be changed or corrected “on the spot”. Such corrections must be made **very soon** after the paper was originally graded. **No grades will be corrected except through this procedure.**

Example: Suppose a student’s four test grades are: 82, 63, 79, 85. This student’s daily quiz grade (from the top 20 of them) is 92.5. The student’s homework grade is 85. Here is the calculation of this student’s grade:

$$\begin{aligned} & 0.18*82 + 0.18*63 + 0.18*79 + 0.18*85 + 0.18*92.5 + 0.10*85 \\ &= 14.76 + 11.34 + 14.22 + 15.3 + 16.65 + 8.5 \\ &= 80.77 \quad \text{which is a course grade of B.} \end{aligned}$$

Attendance Policy: Attendance is required in this course. Students who miss more than 4 classes **may** be withdrawn. Attendance is taken from the daily quiz papers. Thus, every student must turn in something with the daily quizzes in order to be counted present.

Withdrawal Policy: It is the student’s responsibility to initiate all withdrawals in this course. The instructor **may** withdraw students for excessive absences, failure to participate in the daily quizzes, or failure to progress in the course. “Excessive absences” is defined as four or more absences. “Failure to participate in daily quizzes” is defined as not attempting the daily quiz more than once out of any two-week period. “Failure to progress” is defined as making two or more test grades of below 50. The instructor makes **NO COMMITMENT** to withdraw a student for these reasons, but may withdraw a student for any of these reasons.

Before the official census date (Spring 2008: January 29, 2008), a withdrawal from this course will take the course entirely off the transcript and no W will appear, so it doesn’t count as a withdrawal. Between then and the final withdrawal date (Spring 2008: April 21, 2008), withdrawals do result in a W on the transcript. After that date, neither the student nor the instructor may initiate a withdrawal.

Students entering a Texas public college or university starting Fall 2007 and later are allowed only a very limited number of withdrawals (i.e. Ws on their transcripts) during their entire undergraduate career. For all students, withdrawals can have negative consequences, including increasing the tuition to be paid when the course is taken again and eligibility for financial aid. Review this and other important

information about withdrawals at <http://www.austincc.edu/withdraw/>

Incompletes: Incomplete grades (I) will be given only in very rare circumstances. Generally, to receive a grade of I, a student must have taken all examinations, be passing, and have a personal tragedy occur after the last date to withdraw which prevents course completion on time. An incomplete must be completed promptly or it will turn in to F.

Students with Disabilities: Each ACC campus offers support services for students with documented physical or psychological disabilities. Students with disabilities must request reasonable accommodations through the Office of Students with Disabilities on the campus where they expect to take the majority of their classes. Students are encouraged to do this three weeks before the start of the semester. Students who are requesting accommodation must provide the instructor with a letter of accommodation from the Office of Students with Disabilities (OSD) at the beginning of the semester. Accommodations can only be made after the instructor receives the letter of accommodation from OSD.

Scholastic Dishonesty: Acts prohibited by the college for which discipline may be administered include scholastic dishonesty, including but not limited to, cheating on an exam or quiz, plagiarizing, and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their thought, work, research or self-expression. Academic work is defined as, but not limited to, tests, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations; and homework.

Students who violate the rules concerning scholastic dishonesty will be assessed an academic penalty that the instructor determines is in keeping with the seriousness of the offense. This academic penalty may range from a grade penalty on the particular assignment to an overall grade penalty in the course, including possibly an F in the course. ACC's policy can be found on page 33 of the Student Handbook under Policies and Procedures or on the web at <http://www.austincc.edu/handbook>

Academic Freedom: Institutions of higher education are conducted for the common good. The common good depends upon a search for truth and upon free expression. In this course the professor and students shall strive to protect free inquiry and the open exchange of facts, ideas, and opinions. Students are free to take exception to views offered in this course and to reserve judgment about debatable issues. Grades will not be affected by personal views. With this freedom comes the responsibility of civility and a respect for a diversity of ideas and opinions. This means that students must take turns speaking, listen to others speak without interruption, and refrain from name-calling or other personal attacks.

Student Discipline: Classroom behavior should support and enhance learning. Behavior that disrupts the learning process will be dealt with appropriately, which may include having the student leave class for the rest of that day. In serious cases, disruptive behavior may lead to a student being withdrawn from the class. ACC's policy on student discipline can be found in the Student Handbook or on the web at <http://www.austincc.edu/handbook/>

Student Services: Classroom behavior should support and enhance learning. Behavior that disrupts the learning process will be dealt with appropriately, which may include having the student leave class for the rest of that day. In serious cases, disruptive behavior may lead to a student being withdrawn from the class. ACC's policy on student discipline can be found in the Student Handbook under Policies and Procedures or on the web at: <http://www.austincc.edu/handbook>

Course-specific support services: ACC main campuses have Learning Labs which offer free first-come first-serve tutoring in mathematics courses. At RVS it is in room 9100. At NRG it is at the back of the first floor of Building 4000. Students should bring their course handouts, notes, and work on the homework when they come to the Learning Lab. For locations, contact information and hours of

availability of the Learning Labs, see <http://www.austincc.edu/tutor/>.

Tests.

Some of the tests will be in the Testing Center and some in class. See this website for locations, hours, and rules for the Testing Center: <http://www.austincc.edu/testctr/>. **YOU MUST READ THE RULES** on that website and follow those rules when you take a test in the Testing Center. The last test will be in class on the last day of class. (You will need your current ACC student ID to use the Testing Center.)

Tests and make-up tests must be done entirely on your own, with no help from anyone else. Violating the rules of the testing center, or giving or receiving help on tests is scholastic dishonesty, and the punishments are severe.

For Tests 1--3, a student who misses a test or who makes below 60 on a test may do make-up work. That make-up work includes re-working all the problems on the test and demonstrating knowledge of these topics in a testing situation. When that work is satisfactorily completed, the test grade will be raised to a 60. Such make-up work can be done on no more than two tests.

All tests in the course are cumulative, as the later material in the course uses the earlier material. That means that students who do poorly at first but learn that early material better later in the course, will not be penalized unduly for the early low grades. At the end of the semester, either or both of the Test 1 and Test 2 grades may be replaced by the average of the Test 3 and Test 4 grades, if that average is higher than the original test grades, as long as the student has either passed Test 1 and Test 2 or done acceptable makeup work for them. In order to be eligible for this, the student must specifically request it on the Test 4 paper. Most students will probably not need this. If, after Test 1 or Test 2, you are failing in the course, please visit with me outside of class about what you will need to do to improve your performance and be eligible for this.

Deadlines for the tests will be enforced very strictly. When the test is in the testing center from Monday through Wednesday, you are expected to take the test on Monday or Tuesday, and then there is an extra day for you to take it late if your car broke down on Tuesday.

Homework:

Homework will be assigned for each topic. Each student is expected to do enough of that homework to learn the material. Students are also expected to check their answers and to mark the homework problems in the margin with a check or X to indicate whether each one is worked correctly or not. The homework for a particular topic must be just behind the Topic in the notebook. The notebook will be checked about ten times during the semester during class and students may be asked to turn in the problems they have worked from time to time. Each student will receive a homework notebook grade for each of the four portions of the course. These will be averaged together for the overall homework grade.

Daily Quizzes:

Each day a four-problem or five-problem take-home quiz will be assigned, to be turned in at the beginning of class the following class day. Each of those quizzes will earn a grade of between 0 and 100. At the end of the semester, the top twenty of those grades will be averaged for the overall quiz grade.

Students who miss class may ask another student for the quiz assignment or obtain the quiz assignment for the next day from the course web page at <http://www.austincc.edu/mparker/1333/>. Students who miss class should come to my office hours very soon to ask their questions over the homework or to get any materials that were handed back during the class.

Students who are late for class must bring their quiz paper to the front and turn it in when they

arrive in class in order for it to be counted. If it is submitted any later than that, it will not be counted for credit, although it may be checked.

Students who attend class but have not worked any of the quiz problems for the day must turn in a signed piece of paper along with the stack of quizzes in order to earn credit for attendance that day.

Possible replacement of homework grade:

I have found that some students in this class believe that they can learn the material well without doing much homework. And that is true for a few students. So I am offering a replacement. A student who makes at least 70 on Test 1 can petition to have their homework grade in the course replaced by the average of ALL of their daily quiz grades. (That means all thirty quiz grades, not just the top twenty that will be averaged for the overall quiz grade.)

Organization of Materials

I have found that there is a strong relationship between how organized a student keeps his course materials and work in the course and how well he learns the material. So I am requiring you to organize your materials in the following way.

1. Use a looseleaf notebook with about 30 tabbed dividers. Use notebook paper with holes so that the individual pages can be inserted into the looseleaf notebook. Here are the various sections of the notebook that should be separated by dividers.
 - Daily handouts and class notes.
 - Quiz problem that is due next time. (Blank notebook paper to do the quiz on.)
 - Old quizzes that have been returned. (Maybe you will want a divider with a pocket or an envelope so that you can just slip the papers in it.)
 - Homework cover sheet(s)
 - Printed Topic A and blank notebook paper for working these homework problems.
 - Printed Topic B and blank notebook paper for working these homework problems.
 - Printed Topic C and blank notebook paper for working these homework problems.
 - etc. (through Topic Z)
2. Your class notes should have the date on each page, and the printed daily handout and the class notes for that day should be together to make a "package" for that day. Then put those packages in order by date. (I keep the most recent on top, but it's also OK to keep the most recent at the back. Just make sure they are in order.)
3. If your notebook gets larger than you want to carry with you each day, then get a second looseleaf notebook to leave at home. Keep about three weeks worth of the current material in the notebook you take to class, and leave the older material in the notebook at home, but still organized as described, with the dividers.
- ~~4. When it is time to turn in your homework folder, remove the relevant homework cover sheets and the homework pages (carefully labeled by Topic) from the various sections of your notebook, and put them together, in order of the Topics, in your homework folder.~~
- ~~5. When your homework is returned to you, take it out of the folder and store it. You may keep it all together as you turned it in, or you may choose to redistribute it with the Topics it came from. (If it were me, I'd just keep it all together as I turned it in.)~~

6. If you miss a class, go to the course webpage and print the daily handout for the day you missed and add it to your notebook in the correct place. And do the quiz to turn in at the next class meeting.

Class Rules:

1. In accordance with school policy, you may not bring food or drink into class.
2. Please turn off or mute volume on beepers and cellular phones so as not to disrupt class.
3. Arrive for class a few minutes early so that you can have your materials out and be ready to start class on time.
4. Disruptive behavior (talking to others while I am lecturing, rudeness, etc.) will not be tolerated.
5. Class discussion will focus on the material being presented and will be about matters relevant to the entire class. Discussion of your individual situation belongs in office hours or, occasionally, in the part of the class time that I have identified as devoted to working individually with students.
6. Children are not allowed to attend class with you.
7. Remember you are here to learn; be prepared to participate in class discussion. We are all unique individuals and in this class everyone's opinion will be respected whether we agree or disagree.
8. Counseling services are available to help you with a variety of needs, if you would like more information please ask.
9. Office hours are before class, but I am also available for a short time after class. Ask immediately if you need help! I am here to help you learn. Getting behind even one day will cause you to be confused and frustrated.
10. Quiz problems will never be accepted late. A moderate amount of extra credit is available to everyone.
11. Tests may not be taken late. There is a provision for making up low test grades and that will be used to deal with a missing test grade.
12. All students must take the final exam at the scheduled time. There are no exceptions.
13. If you enroll in the class late, you are subject to the same rules as students who enrolled in the class before the class began. The standard grading scheme allows enough flexibility for all students to make up a reasonable number of absences.
14. Cheating will not be tolerated.