UaMTH 113

Technical Math

Spring 2020

Class Time and Location: Tuesday and Thursday 4:30 – 5:45 pm, Spencer 245

Instructor Name: Ron Webb --- B.S. Mathematics, Sam Houston State University;
ME, Southeastern Oklahoma State University

Office Location: Spencer 254

Office Hours: As posted (varies)

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Prerequisite: Grade "C" or better in MTH013 or a minimum score of 39 on the ASSET Numerical Skills Placement Exam, 42 on the Compass Pre-Algebra Placement Exam, 26 on the Compass Algebra Placement Exam, 17 on the ACT Exam, 41 on the Accuplacer Elementary Algebra, or 470 on the SAT Exam.

Course Description: Course content includes the fundamental processes of mathematics with emphasis on problem-solving techniques. Included is a review of arithmetic, introductory algebra, and rudiments of analytic geometry. A project of student's choice will be created to encompass class content with hands-on experience.

Program Outcomes: The knowledge and critical thinking skills acquired in the general education component enable students to analyze problems, to arrive at intelligent conclusions, and to make reasoned choices in their professional and personal lives. Many general education courses are designed to deal primarily with processes rather than simply with facts, to help students to develop individually and as members of a group and instill in students the desire to develop intellectual and emotional skills through lifelong learning.

- Use computational mathematics to solve problems which they encounter at home and the workplace.
- Apply algebraic operations and their practical applications to problems.

Rationale: An objective of post-secondary education is to provide a core of knowledge that is shared with most educated people. By studying and developing a deeper understanding of mathematical computations, students can better analyze, problem solve and prepare critical thinking strategies for real world scenarios.

Course Objectives: Upon successful completion of Technical Math, the student should be able to do the following:

- Perform the basic arithmetic operations.
- Recognize the English and Metric systems.
- Apply content knowledge to a concrete project of their choosing.
- Apply concepts of algebra to occupational areas of study.
- Measure area and volume of three dimensional objects.
- Use triangle trigonometry in real-world application.

Student will be able to demonstrate mastery of the above objectives in the form of PBLs, quizzes, tests and assigned projects.

Topical Outline:

I. Arithmetic

A. Basic Operations Involving Fractions
B. Basic Operations Involving Decimals
C. Ratio, Proportion, and Percent
D. Powers and Roots

II. English and Metric Systems of Measurement

A. Accuracy in measurement and significant digits
B. Use of conversion factors to change from one unit of measure to a different unit of measure
C. Applied Problems using The English and Metric Systems

III. Basic Algebraic Operations

A. Basic Operations of Real Numbers
B. Basic Operations Involving Polynomials
C. Evaluation of Algebraic Expressions

IV. Equations

A. Solving Linear Equations
B. Solving Literal Equations
C. Coordinate Planes

V. Applied Geometry

A. Points and Lines
B. Angles and Triangles
C. Polygons and Circles
D. Solids

VI. Trigonometry

A. Solving Similar and Right Triangles
B. Evaluating Trigonometric Functions
C. Elementary Right Triangle Applications

Course Schedule: Technical Mathematics

Textbook: Technical Math, A Project Based Learning Approach 1st Ed.
Authors: Anglin
Publisher: UA Rich Mountain
Copyright: 2016-2018

WEEK	PROPOSED SCHEDULE OF ASSIGNMENTS	Tentative Dates
1	Orientation/Project Packets/Ch. 1	1/14 & 1/16
2	Ch. 2/ Ch. 3	1/21 & 1/23
3	Ch. 3/ Ch. 4	1/28/ & 1/30
4	Ch. 4	2/4 & 2/6
5	Ch. 4	2/11 & 2/13
6	Ch. 5	2/18 & 2/20
7	Ch. 5	2/25 & 2/27
8	Review Unit 1/Unit 1 Exam	3/3 & 3/5
9	Ch. 6	3/10 & 3/12
10	Ch. 6	3/17 & 3/19
11	Ch. 6	3/31 & 4/2
12	Ch. 6	4/7 & 4/9
13	Ch. 7	4/14 & 4/16
14	Ch. 7	4/21 & 4/23
15	Review Unit 2/Unit 2 Exam	4/28 & 4/30
16	Final Project Due	5/5 or 5/7

**Course schedule is subject to change at any time.

Course Conduct:

Methods of Instruction: The lecture approach, question and answer techniques, cooperative learning environments, calculator and computer usage, the overhead projector, and the smartboard are primarily the methods of instruction employed in this course.

Oral Reports: Occasionally a student may be asked to work a problem at the whiteboard and present an explanation to the class.

Term Assignments: Homework assignments are given for each session. Students are expected to maintain an up-to-date mathematics notebook, marking any problems that are found to be too difficult to complete. During the next class session those problems shall be fully explained by the instructor. Occasionally special problems (to be worked on a separate sheet) are assigned and submitted for a grade. Periodically homework is asked to be handed in. Homework, quizzes, and tests are all graded according correctness, clarity of work, whether directions in showing work have been followed as demonstrated by the instructor, and punctuality in handing work in on time.
If you must miss class for any reason it is the responsibility of the student to call or email the instructor within 24 hours of the absence. Failure to do this will result in reduced and/or no credit for the assigned homework that was asked to be handed in. Exceptions to this rule will be considered in only extreme emergencies.

UA Rich Mountain Credit Hour Calculator: For every course credit hour, you should expect to spend at least three clock hours per week of concentrated attention on course-related work, including but not limited to time attending class, as well as out-of-class time spent reading, reviewing, organizing notes, preparing for upcoming quizzes/exams, problem solving, developing and completing homework, and other activities that enhance learning. For a three hour course, a typical student should expect to spend at least nine hours per week dedicated to the course. This includes the time spent in class.

Course Requirements/Evaluation:

I. An exam will be given upon completion of Chapter 1 – Chapter 5.

II. Occasionally, special projects may be assigned and submitted for a grade. Also quizzes (announced or unannounced) may be administered.

III. A project will be completed for the final exam. A project packet will be handed out during first day orientation specifying details and grading rubrics. Project is worth 400 points.

IV. Points may be obtained from all four of the above sources-- chapter exams, special projects and quizzes, homework assignments, and the final project. The final grade will be determined by dividing the student's total number of points earned by the total number of possible points for the course.

V. Grades throughout the semester are assigned on the basis of a standard percentage scale.

90-100	A
80- 89	B
70- 79	C
60- 69	D
0- 59	F

Class Procedures/Student Requirements:

Required Textbook: *Technical Math, A Project Based Learning Approach*, 1st Edition, by Talanda Anglin: Rich Mountain Community College. 2016-2018.

Required Materials:

1. *Technical Math, A Project Based Learning Approach*
2. Loose-leaf or spiral notebook for homework assignments
3. Pencil or erasable pen only

Helpful Library References:

1. Fundamentals of Technical Math. Arthur Kromer.
2. Elementary Mathematics for the Technician. Edwin M. Hemmering.
3. Basic College Mathematics: An Applied Approach. Aufmann and Barker.

Comments on Textbook: This particular textbook was created to fit the PBL style for the students. The format is clear and easy to follow. The focus of the text is to create a hands-on portfolio that can be used in everyday situations.

Attendance Policy: Regular attendance and punctuality are expected. It is the responsibility of the student to initiate arrangements for all missed activities. If an absence is a planned absence the student is expected to make arrangements for making up work prior to the absence. More than three absences will be considered excessive and, along with work not made up, may adversely affect the grade for the course. Under no circumstances will the student receive credit for the course if more than a fourth of the classes are missed (13 classes). In case of extended illness, or other circumstances, the student must contact the instructor if a WP is desired. If the instructor is not notified a failing grade will be assigned for the course. Laboratory work is scheduled for a specific time and day. However, if it can be done safely (guidelines provided in class), students may do the missed laboratory works at another time if course schedule conflicts dictate. Each student is expected to participate in the required laboratory time in order to receive credit for the laboratory activity. There will be no designation of excused or unexcused absences in the lab. If a student is not in lab they will be counted as absent no matter what the reason may be. Also, if the student is present in lab but fails to submit the lab report, it is counted as absent and no point will be awarded for that lab.

Assignment Due Dates: Students are expected to submit the assignments and other works on or before the assigned due dates. You will be penalized for the late works depending on the number of days and full point and importance of the works assigned.

Make-up Work Policy**:** Make up work should be competed promptly after the absence. A maximum of one week will be the guideline. Make-up exams are given only in instances of the most unavoidable, serious circumstances. Prior notice of absence from an exam is required.

Upon return after an absence the student is expected to be prepared for the days' class activities. It will be the student's responsibility to obtain the assignment for that day. Missed labs can present a make-up problem. However, one make up period is available at the end of the semester.

Cell Phone Policy**:** Turn off your cell phone prior to class. If you work for an emergency service such as a fire department, put it on vibrate. It is a sign of disrespect as well as a disruption if non-emergency calls are taken during class. If you chose to take a call anyway, leave the room and take your supplies with you. You are expected not to return that session.

Academic Dishonesty: It is expected that each student shall do his/her own work on class works, quizzes, exams, and lab reports. Cheating, copying other's answers, writing other's statement without citing their reference are all considered plagiarism and are penalized from allowing no point in that particular unit up to dismissal from the whole course, depending on the severity of the offense.

Disability Policy: It is the policy of UA Rich Mountain to accommodate students with disabilities, pursuant to state and federal law. Any student with a disability who needs accommodations should contact the Associate Vice President for Student Affairs Office, 394-7622, ext. 1460.

Arkansas Clean Air Act: In compliance with the Arkansas Clean Air Act, UA Rich Mountain is a smoke and tobacco free facility. Students and guests are to refrain from the use of all tobacco products while on campus.

Student Misconduct: Students committing misconduct are subject to disciplinary sanction(s) and/or restrictions. Misconduct or prohibited behavior includes, but is not limited to endangerment, harassment, disruption, sexual misconduct, illegal drugs and/or alcohol, fire or safety issues, gambling, property violations, computer violations or other violations as listed in the UA Rich Mountain catalog.

UA Rich Mountain Mission: UA Rich Mountain exists to provide all residents of the Ouachita Mountain Region with exemplary educational and enrichment opportunities to improve the quality of life and standard of living.

Campus Security: UA Rich Mountain strives to provide a safe learning environment; therefore, students who know of any security risk are asked to contact a college official. For more information follow this link and look under the title Health and Safety: http://www.uarichmountain.edu/at-a-glance/disclosures.

Title IX: Sexual Harassment: If there is an issue of this nature it should be reported immediately to:

Credit Hour Requirement Calculator

Course Information		
Department, Course Number		Industrial Math
Course Title	Industrial Math	MTH 1003
Credit Hours	3	
Mode of Delivery	Traditional	
Weeks in Part of Term	15	
Level of Reading Material	General/Easy/Non-Technical (1)	1
Reading Level of Students	Remedial Student or Slow Reader (3)	3
Average Pages per Hour	11	

Enter either week or term, not both

Contact Hours	**Hours/Week**	**Hours/Term**	**Total Hours**
CLASS CONTACT HOURS	3		45

	Pages Asg'd	**Hours/Week**	**Hours/Term**	
Syllabus Items				
Assigned Homework		4		60
GROUP ACTIVITIES		1		15
Lecture		2		30
				0
				0
				0
				0
				0
				0
				0

Total Hours	150
Required Hours	112.5
Difference	Ok + 37.5