Syllabus

Instructor: Ron Raty
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[Email works best]

Office hours:
Monday and Wednesdays, 3:00-5:00
Thursdays 10:00 – 12:00
[Best to make an appointment]

Course Description:

This course covers many of the common mathematical processes used in the technical trades. In addition to basic math (adding, subtracting, multiplying, dividing), the course will cover solving problems with decimals, fractions, geometric, trigonometric, and algebraic formulas. This will be done in a problem solving environment related to the technical trades.

Course Outcomes:

Upon successful completion of this course, the student will be able to:

- Use appropriate mathematical expressions and formulas to explain and solve job-related problems.
- Distinguish among the functions of a scientific calculator and determine the proper input sequence to solve job-related problems and situations.
- Use fractions, decimal fractions, percent, ratio, proportion, and inverse proportion to solve job related problems and situations.
- Use appropriate formulas and linear and volume measurement tools (tapes, rules, calipers, graduated cylinders, and beakers) to determine the surface, area, volume of and relationships between various plane and solid shapes.
- Utilize both metric and English measurement systems and differentiate and convert linear and volume measurements between them.
- Evaluate an industry related problem using generally accepted scientific/engineering design processes.

Prerequisite:

Math 90A minimum (90B preferred) or equivalent Accuplacer scores.

Required Text and Materials:

The text for this course is: ***Mathematics for the Trades, A Guided Approach, by Carman and Saunders.*** This class will cover chapters 1 thru 10. You will want to be sure to read the book, because although the instructor uses it as a general guideline, he does not lecture from it.

Students will want to invest in a scientific calculator. You can identify this kind of calculator by the input buttons. Look for Sin, Cos, Tan functions as well as ‘(‘ and ‘)‘

parenthesis inputs. I do not recommend a sophisticated graphing calculator unless you really know how to use it. Students with these calculators often make mistakes on problems, not because they don't understand the math, but because of "calculator issues." Personally, I use a $10 scientific calculator I bought at the grocery store. Be careful of calculator "apps". Because they are free or cheap and created by amateur programmers, they often have issues. I have seen several that don't work properly.

Course Requirements:

Class Format: Each week, the instructor will lecture loosely based on the material given in the book, but mostly on the instructor's interpretation and real world experiences. Students are encouraged to read the chapters prior to class lecture so they can ask questions about processes they do not understand. Students should identify problems from the book that are particularly interesting or difficult. Prior to class, students are encouraged to complete the Chapter Reviews in order to generate questions.

Class Organization: The class will cover chapters 1 through 10 of the book in addition to a few additional useful concepts which are not discussed in the book. These additional subjects are not really new material, but simply another way of thinking about the material already covered by the book. Each section is worth a percentage of the final grade. Sections are made up of a combination of the following:

Chapter Reviews
At the beginning of each chapter is a Chapter Review. It is a test to see what in the chapter the student should review. Early in the quarter, you will probably find these pretty simple and will only have to lightly peruse the chapter. Later on, they get more difficult, and the Review will guide you on which portion of the Chapter you should study. On a separate sheet of paper, complete the Chapter review as described in Canvas (not all problems may be required by the instructor). Answers to the problems are in the back of the book, so you can correct your own work. If you have difficulties, read the appropriate section of the Chapter, then do the problem again. All Reviews turned in to the instructor must be 100% correct. Reviews with incorrect answers will not be accepted. Be sure to show your work in a neat and concise manner.

Paper Homework Assignments.
Homework assignments will be given periodically during the quarter. Homework assignments are more complex problems that require additional problem solving skills beyond the basic problems in the book, or are simply additional practice to cement a process. You are encouraged to work in groups, but make sure you understand the material and each student must turn in their own work. Group work will not be accepted. Give it an honest attempt, and if you need help, the instructor can provide it.

Online Homework Assignments
Quizzes (online homework) are based on each chapter content and will be conducted using Canvas. The quizzes are used to prepare the student for the mid-term and final exams. Students should use the Canvas quiz to make sure you can do the problems without outside assistance. In other words, the quiz is not a group activity. Be sure to submit your quiz when

you are finished or you won't receive credit. Quizzes can be taken multiple times, but the problems vary each time. Your highest score will be used for your grade.

Attendance
Attendance is worth a portion of your grade. Although we have a book, and the instructor uses it as a general guide, he does not lecture from it. Lectures are based on the practical experience of the instructor, so lectures will expand on some subjects from the book, and others will be ignored entirely. Students are responsible for all information in the book and presented in class. Attendance will either be taken during class, or be determined by an in-class exercise you turn in.

Exams
Several exams will be conducted in class. This is where students demonstrate their understanding of the processes and procedures used in problem solving. The exams will be open book and open note. Take advantage of the quizzes to make sure you can solve the problems without assistance, and you will do fine on the exams. The exams will be the work of the student without the assistance of others. Each exam is a combination of on-line math type problems, and the traditional paper and pencil affair where you apply the math to solve problems. The only materials allowed in the exams are the book, notes, and a calculator. If you do poorly, use it as a learning experience.

Final Grade

Your final course grade will be based on:

Attendance	10%
Average grade for the different sections	50%
Exam 1 Basics	20%
Exam 2 Geometry, Trigonometry, and Algebra	20%

The final grade recorded with the registrar is based on the percentage of available points you manage to earn during the course.

90-100%	4.0
80-90%	3.0+
70-80%	2.0+
60-70%	1.0+
57-60%	0.7+

Any percentage less than 57% is inadequate to receive class credit, and a grade of 0.0 will be recorded.

<u>Getting Additional Help</u>
The class is scheduled to last 2+ hours, although it is hard to concentrate for that long. As a result, class lectures generally do not use the entire class time. The last half hour or so is often used to help those students that are finding the material particularly difficult. If you find you are not understanding the material from reading or from the lectures, stick around for the end of the class, the instructor can help you in a one on one environment and can address your understanding directly.

Withdrawal:
If you decide that you must withdraw from this class, you must do in conformance with Olympic College policy. A discontinuance of attendance without an Official Withdrawal Form is an automatic 0.0 (F) for the class. This is school policy and governs all classes conducted at Olympic College.

Cheating
If you use other people to do your homework or quizzes without understanding the material, this would be considered cheating. You are encouraged to take responsibility for your education, don't cheat. Obviously, cheating will result in your not having a good understanding of the mathematical processes and procedures, and you will likely do poorly on the exams which will result in a poor or failing grade for the class. That is why the exams are 60% of your grade.

About the Instructor
Ron Raty is a licensed architect with over 25 years of experience in architectural design and project management. He holds a professional Masters of Architecture degree from Montana State University. Many of the problems presented in this course, particularly in the quizzes, are directly from real life situations. Ron was raised in Montana, and has since lived and worked in Alaska, Washington, California, Fiji, and Singapore. He has specialized in the design of office buildings, schools, and health care facilities, and is licensed to practice architecture in Alaska and Washington.

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American Disabilities Act Statement
Any student who feels he/she may need an accommodation based on the impact of a disability should contact the office of Access Services. Access Services will inform the instructor of any special accommodations required. This has to be done every quarter, because resources get re-allocated.

Humanities and Student Services Building, Room 204
Phone: 360-475-7540 or 1-800-259-6718 ext. 7540
Fax: 360-475-7436
E-mail: AccessServices@olympic.edu

Cell Phones:
Cell phone use during lectures and presentations is prohibited. Please set you phone on vibrate so if you do get a call, you don't disturb others or the lecture. If you have to answer a call, please step out of the classroom as a courtesy to others.

Sleeping in Class:
If you feel the need to sleep, please go home or to the Library or a sunny park bench or someplace more appropriate. If you are sleeping in class, you won't get credit for attendance and you will get better rest elsewhere because I will have to keep waking you up to make sure you're not having a heart attack or insulin reaction.