MTH 121

Concepts and Applications of Mathematics (CT)

Department of Mathematics|College of Science Fall 2014

Dr. Evelyn Pupplo-Cody

This course begins on August 25, 2014 and ends on December 10, 2014.

Please note that all times are Eastern.

Please see the University Academic Calendar for course withdrawal dates.

Office

Contact me:
You can e-mail me using the MUOnline Mail Tool or pupploco@marshall.edu. You may leave voice mails for me at 304 696-3047.

About me:
I have been teaching at Marshall University since 1989. My credentials include a Ph.D. from the University of Kentucky where I studied univalent function theory and other topics in mathematics.

For fun, I read a lot and solve puzzles.

Course Materials and Cost

Using and Understanding Mathematics A Quantitative Reasoning Approach, 5th Ed. by Bennett and Briggs. This book is **required** for the course. An e-book can be purchased through the publisher, Addison-Wesley, a Pearson Company, for a reduced price. Books are also available as rentals through the bookstore.

A scientific calculator.

The books can be ordered online at The Marshall University Bookstore or at any other book seller of your choice for approximately $150.00. If you buy through the bookstore, try to get a book with the MyMathLab access code to access the publisher's web site (optional).

Technical Requirements

For minimum hardware/software requirements please see:
http://www.marshall.edu/muonline/support/hardwaresoftware.asp

- The latest version of Java must be installed on your computer.
- A reliable internet connection is required.
- Help Desk 304.696.3200

Course Details

Description: Critical thinking course for non-science majors that develops quantitative reasoning skills. Topics include logical thinking, problem solving, beginning statistics and probability, exponential and logarithmic modeling, and financial concepts.

***Prerequisites*:** MTH 099 or Math ACT 19 or above

Learning Outcomes: This course will focus on the elements of **critical thinking** as a basis for understanding and interpreting mathematical topics that will enable students to develop the quantitative reasoning skills they will need for college, career, and life.

Students will analyze real-world problems quantitatively, formulate plausible estimates, assess the validity of visual representations of quantitative information, and differentiate valid from questionable statistical conclusions. Students will apply the **quantitative thinking** skills that they learn to analyze problems dealing with finance, exponential growth and decay, and logarithmic models.

Using **metacognitive thinking**, students will evaluate the effectiveness of their project plan or strategy to determine the degree of their improvement in knowledge and skills.

When students apply **integrative thinking**, they will make connections and transfer skills and learning among varied disciplines, domains of thinking, experiences, and situations.

Students will formulate focused questions and hypotheses, evaluate existing knowledge, collect and analyze data, and draw justifiable conclusions as they apply **inquiry-based thinking**.

Students will demonstrate their **communication fluency** skills to present their research to specific audiences. Each student will work on five short projects on a variety of topics to be determined by the instructor.

Course Goals:

Students should develop strong critical and logical thinking skills to navigate the media and be informed citizens;

Students should have a strong number sense and be proficient in estimation so they can put numbers from the news into a context that makes them understandable;

Students should be able to read news reports of statistical studies in a way that allows them to evaluated them critically and decide whether they should affect their personal beliefs;

Students should be familiar with basic ideas of probability and risk, and be aware of the impact on their lives;

Students should possess the mathematical tools needed to make basic financial decisions;

Students should understand how mathematics helps them study important social issues, such as the growth of populations, the depletion of resources, and the extermination of flora and fauna.

Schedule

Week of	Unit	Chapters and Sections
Aug 25	1	Prologue, 1A
Sept 1	1	1B, 1D
Sept 8	1	2A Fractions Review, 2A, 2B Powers of Ten Review, 2B

	1	Activity 1 – *Global Melting* – due 9/12
Sept 15	1	**Unit 1 Exam and homework quizzes must be completed by noon on Sept 19th**
Sept 22	2	3A Fractions and Ratio Review, 3A, 3B
Sept 29	2	3C, 4B Algebra Review, 4B
	2	Activity 2 – *Student Loans* – due 10/3
Oct 6	2	4C Algebra Review, 4C, 4D
Oct 13	2	**Unit 2 Exam and homework quizzes must be completed by noon on Oct 17th**
Oct 20	3	5C, 6A
	3	Activity 3 – *Cell Phones and Driving* – due 10/24
Oct 27	3	6B, 6C
Nov 3	3	**Unit 3 Exam and homework quizzes must be completed by 2:45 p.m. on Nov 7th**
Nov 10	4	7A, 7B
Nov 17	4	7C, 8A
	4	Activity 4 – *Tower of Hanoi* – due 11/21

Dec 1	4	8B, 8B Review of Logarithms
		Activity 5 – *Essay summarizing one of the first four activities* – due 12/5
Dec 8	4	Review
Dec 10	4	**Unit 4 Exam, homework quizzes, and Basic Skills Quizzes must be completed by 2:45 p.m. on Wednesday, Dec 10th**

Course Grading

Each examination (three exams and a final exam) will be worth 15% of the semester grade. Homework quizzes will be worth 10% of the semester grade. Basic Skills Quizzes will count as 10% of the semester grade. The five activities will be worth a total of 20% of the semester grade.

90.00 - 100 A
80.00 - 89.99 B
70.00 - 79.99 C
60.00 - 69.99 D
Below 60.00 F

The grading scale is rigid. Students will receive the grade that they earn.

Exams

All exams will be taken with the *Assessments Tool*. Homework quizzes can be found on the menu bar under Assessments. Activities must be handed in using the *Assignment Drop Box* in MUOnline.

There are two options for taking exams.

1. You may take the exams between 12:00 noon and 2:45 p.m. in Corbly Hall 330 computer lab on the following days.
    a. Sept 19 for Exam 1
    b. Oct 17 for Exam 2
    c. Nov 7 for Exam 3
    d. Dec 10 for Exam 4 (in Corbly Hall 332)

2. You may take the exams at your own computer using Respondus Monitor. If you choose this option, you must have a computer with a reliable internet connection, a webcam, and a microphone. Taking exams on cellphones or tablets is not recommended. More information is included in the content section of the course.

On-Campus Requirements

There is absolutely no requirement that you come to campus. You can communicate with me via the course *Mail* tool or Marshall University's e-mail service at pupploco@marshall.edu. All of your assignments are submitted electronically through the course *Assignments Tool* and all exams are timed and taken online through the *Assessments Tool.* You may take your exams away from campus by using Respondus Monitor.

Course Policies

There are deadlines for the completion of each exam. **Quizzes and exams will not be available after the deadlines.** Please contact the instructor if there is a legitimate reason to extend the deadline. You may complete exams, quizzes, or activities ahead of time.

The course is divided into 4 units with an exam at the end of each unit. Homework quizzes may be taken up to two times. Basic Skills Quizzes may be taken up to three times. Exams may only be taken once.

Online courses are not for everyone! If you have a problem learning mathematics, you should probably take a face-to-face course. You will be teaching yourself most of the material and some students are just not up to the challenge, so please think seriously before signing up for this course. If you have problems with organization, you should take a course where the instructor will help you stay on track. Instructors of online courses assume that their students are highly organized and very motivated to learn.

You are required to complete the five activities by their deadlines. Activity 5 will be an essay that you write based on one of the four activities that you have completed. To get credit for Activity 5, your submission must be in essay form. You should include citations for all activities.

How to study for this course

This course consists of sections from eight chapters. **For each section I suggest that you:**

- **Begin by reading the text for each new section.** The content in my lectures is not meant to replace the text, but to supplement it.

- **Look at my lectures for a guided tour through the section.** Each lecture contains video clips of selected problems, web sites for more help, definitions and rules, worked out examples and explanations.

- **Try the assigned homework problems.** You won't know if you can do this unless you really try.

- **If you are having trouble, please contact me through the MUOnline e-mail or through Marshall's e-mail.** I would be happy to explain to you how to do any of the problems. If you understand the concept being presented, you may be able to skip some of the problems. Only you can be the judge of the work you will have to put in to master the material, but remember that "practice makes perfect." I will have online office hours during the semester.

- **For the homework grade, please complete the homework quizzes after each section.** These you may do with your books, notes, and other resources. You may take each quiz twice and earn the higher of the two grades.

- **The Basic Skills Quizzes are a set of seven quizzes designed to test your knowledge of basic mathematics.** You can take each quiz up to three times with the highest score being the one counted in your grade. They must be completed by the end of the semester. You can find help to learn this material in the set of appendices on the homepage of the course.

- **To review for an exam, go through the PowerPoint slides on the homepage of the course.** These slides will summarize the material. You should also review the homework quizzes and homework assignments that you have completed.

Upon finishing each unit you will need to take a unit examination. You may work ahead if you want to complete the course work sooner. Students who work at a constant pace tend to make better grades than those who try to hurry through or leave it all to the last minute.

Resources

Me: Don't hesitate to contact me directly with questions or concerns. You can reach me through the MUOnline *Mail* Tool or by my Marshall e-mail (pupploco@marshall.edu). Please don't let your questions hang out there and simmer. If you are not sure about something the best thing to do is to ask about it right away!

University Policies: By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy be going to www.marshall.edu/academic-

affairs and clicking on "Marshall University Policies." Or, you can access the policies directly by going to http://www.marshall.edu/academic-affairs/?page_id=802

Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment

The Online Writing Center: As a MU student, you are also entitled to individualized, one-on-one assistance from a tutor at The Writing Center in the English Department, which also provides tutoring online. They can help you with any step in the writing process, from invention to revision. The service is free. If you have access to campus and would like to use the on-campus service, you can do so by calling 304 696-6254.

For complete information on how to use the Online Writing Center, please see http://www.marshall.edu/muonline/writingcenter

Support Services
Marshall University offers a variety of support services to students enrolled in online courses:

- Off-campus Library Service
- Textbook Service
- Disabled Student Services
- Tips for Succeeding in Online Environment
- Study Guides
- Technical Help
