MTH 121

Concepts and Applications of Mathematics (CT)

Department of Mathematics|College of Science Spring 2014

Dr. Evelyn Pupplo-Cody

This semester begins on January 13th, 2014 and ends on May 5th, 2014.

Please note that all times are Eastern.

Please see the University Academic Calendar for course withdrawal dates.

Office

Office Hours:
You can e-mail me using the VISTA *Mail* Tool, request a *CHAT* session, or use the *Who's Online* tool. I have regular office hours on campus that you are welcome to attend.

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.

You will need 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, make sure you get a book with the MyMathLab access code to access the publisher's web site. The publisher's web site is optional but has a great many resources that may help you to learn.

Technical Requirements

- To use Black Board you must have the latest versions of your internet browser and Java.
- To take exams off-campus you will need a webcam and microphone on your computer.
- Help Desk – for assistance needs
  http://www.marshall.edu/ucs/cs/helpdesk/

Course Details

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

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

***Objectives*:**

- Students should develop strong critical and logical thinking skills to navigate the media and be an informed citizen;
- 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.

Student Learning Outcomes	**How students will practice each outcome in MTH 121**	**How student achievement of each outcome will be assessed in MTH 121**
Students will demonstrate an ability to analyze arguments and construct fallacies.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line discussions, and ask questions.	Students will take on-line quizzes and on-line examinations.
Students will solve real-world problems using unit analysis.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line	Students will take on-line quizzes and on-line examinations.

	discussions, and ask questions.	
Students will interpret and analyze numbers that they will encounter in the real world.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line discussions, and ask questions.	Students will take on-line quizzes and on-line examinations.
Students will demonstrate a proficiency in utilizing formulas from basic financial concepts such as loan payments, credit cards, and mortgages.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line discussions, and ask questions.	Students will take on-line quizzes and on-line examinations.
Students will interpret and analyze statistical studies.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line discussions, and ask questions.	Students will take on-line quizzes and on-line examinations.
Students will create tables and graphs from statistical data.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line discussions, and ask questions.	Students will take on-line quizzes and on-line examinations.
Students will analyze and interpret statistical concepts such as measures of central tendency, measures of variation, and normal distributions.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line discussions, and ask questions.	Students will take on-line quizzes and on-line examinations.
Students will demonstrate a proficiency in the fundamentals of probability including expected value.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line discussions, and ask questions.	Students will take on-line quizzes and on-line examinations.
Students will compare linear growth and exponential growth rates and their real-world applications.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line discussions, and ask questions.	Students will take on-line quizzes and on-line examinations.
Students will apply techniques employing common logarithms to solve equations.	Students will view on-line videos, read on-line lecture notes, work on homework, participate in on-line discussions, and ask questions.	Students will take on-line quizzes and on-line examinations.

Schedule

Week of	Unit	Chapters and Sections
Jan 13	1	Prologue, 1A
Jan 20	1	1B, 1D
Jan 27	1	2A Fractions Review, 2A, 2B Powers of Ten Review, 2B
	1	Activity 1 – *Global Melting* – due 1/24
Feb 3	1	**Unit 1 Exam and homework quizzes must be completed by noon on Feb 7th**
Feb 10	2	3A Fractions and Ratio Review, 3A, 3B
Feb 17	2	3C, 4B Algebra Review, 4B
	2	Activity 2 – *Student Loans* – due 2/14
Feb 24	2	4C Algebra Review, 4C, 4D
Mar 3	2	**Unit 2 Exam and homework quizzes must be completed by noon on March 7th**
Mar 10	3	5C, 6A
	3	Activity 3 – *Cell Phones and Driving* – due 3/07
Mar 24	3	6B, 6C

Mar 31	3	**Unit 3 Exam and homework quizzes must be completed by noon on April 11th**
Apr 7	4	7A, 7B
Apr 14	4	7C
	4	Activity 4 – *Tower of Hanoi* – due 4/18
Apr 21	4	8A, 8B, 8B Review of Logarithms
		Activity 5 – *Essay summarizing one of the first four activities* – due 4/25
Apr 28	4	Review
May 5	4	**Unit 4 Exam, homework quizzes, and Basic Skills Quizzes must be completed by noon on Monday, May 5th**

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.

Assessments

- Activities must be handed in using the *Assignment Drop Box* tool.

- All quizzes will be taken with the *Assessments* tool in MUOnline. Homework quizzes can be found on the menu bar under Assessments.

- All exams will be taken with the *Assessments* tool. To help preserve the integrity of the course, exams will be taken in one of two ways.

    1. Online using Respondus Monitor – instructions for downloading the software are posted in the course. You will need to use a computer with a webcam and microphone if you choose to take your exams online using Respondus Monitor. The current price for this service is $10 per course. Please see the instructions in the Course Content folder in MUOnline.

    2. On campus – a list of available times and computer classrooms are posted in the course. There is no charge for this option. Respondus Lockdown Browser will be used to prevent students from going to other websites during the exam.

On-Campus Requirements

There is absolutely no requirement that you come to campus. You can communicate with me via the course *Mail* tool or the *Who's Online* tool. All of your assignments are submitted electronically through the course *Assignment Drop Box* tool and all exams are timed and taken online through the *Assessments* tool.

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.

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 four 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.

How to study for this course

This course consists of sections from nine 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 consistent 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 VISTA *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!

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 696-6254.

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

University Policies: http://www.marshall.edu/wpmu/academic-affairs/policies/

Marshall University
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Department of Mathematics