## Marshall University MATH 121 Concepts & Applications of Mathematics (CT) Course Syllabus Fall 2015–2016 Section 113 CRN 2978

Instructor E-mail Phone	Dr. Mary Jane Wolfe wolfem@marshall.edu (Include "Math 121" in the subject line of all of your messages) (740) 245-5737 – Leave a message. Email is the best way to reach me.				
Catalog Description	A course for non-majors to develop quantitative reasoning skills. Topics include logical thinking, problem solving strategies, linear modeling, beginning statistics and probability, exponential and logarithmic modeling, financial and geometry concepts.				
Course Objectives	<ul> <li>In this course, we seek to provide students with the mathematical tools needed to function as citizens in our increasingly quantitative society. In the modern workplace, both employees and employers must be able to use advanced technology, work with quantitative (numerical) information, and respond to a rapidly changing economy. In particular, we believe our students should meet the following four goals: <ul> <li>Students should develop the critical thinking, reasoning, and metacognitive reflection skills required for subsequent college work and for functioning successfully as an adult member of society.</li> <li>Students should be able to think critically about quantitative issues covered in the news particularly issues covered in the newspaper or a weekly news magazine.</li> <li>Students should be able to make decisions on quantitative issues that confront them in both their personal lives and in their lives as voting citizens.</li> <li>Students should be prepared with the quantitative skills needed for subsequent college course work, in particular, for their Integrated Science course.</li> <li>Students should develop the ability to reason quantitatively and to clearly explain their reasoning in written form, so that they will be prepared for the challenges of modern careers.</li> </ul> </li> </ul>				
Prerequisite	Math 099 or equivalent or Mathematics ACT of 19 or above.				
Credit	3 semester hours				
Text	Using and understanding mathematics: A quantitative reasoning approach (6 <sup>th</sup> Edition), Jeffrey Bennett & William Briggs, Addison Wesley ISBN-13 97800321914620				
Course Content	Chapter 1Thinking CriticallyChapter 2Approaches to Problem SolvingChapter 3Numbers in the Real WorldChapter 4Managing MoneyChapter 5Statistical ReasoningChapter 6Putting Statistics to WorkChapter 7Probability: Living with the Odds	<ol> <li>Thinking Critically</li> <li>Approaches to Problem Solving</li> <li>Numbers in the Real World</li> <li>Managing Money</li> <li>Statistical Reasoning</li> <li>Putting Statistics to Work</li> <li>Probability: Living with the Odds</li> </ol>			
Course Evaluation	Two 100-point exams:Exam 1 Chapters 1 & 2September 28Exam 2 Chapters 3 & 4November 2				

Course	Three 25-point quizzes:				
Evaluation	Ouiz 1	Chapter 1	September 14		
(cont.)	Quiz 2	Chapter 3 & 4(A&B)	October 19		
(cont.)	Quiz 2 Quiz 3	Chapter 5 and $6(A \oplus P)$	November 30		
	Quiz 5	Chapter 5 and 0(A&B)	November 50		
	Compreh	ensive Final Exam	December 14		
	One 25-point charts and graphs homework assignment Two 25-point extra credit opportunities occur during the semester: A group problem solving activity and a group correlation analysis.				
	Course averages falling in the following ranges should result in receiving a course grade no lower than the one listed: 90% - 100% = 80% - 80% = 870% - 79% = C = 60% - 69% D				
	2070 10070 11,0070 0270 D, $1070 - 1270 C, 0070 - 0270 D$				
	Borderline grade decisions may be influenced by class attendance and class participation.				
Attondonco	No ovous	so is pooled if you miss	a class a quiz ar an avam		
Policy	If you need to miss an exam, make arrangements with your instructor to take it at 5:30 PM - before the start of the next class meeting. If that is not possible, the percent score you receive on the final exam will be entered as the score for at most one quiz and one exam.				
	If more than one missed quiz or more than one missed exam is not taken before the following class period, no make-up credit will be given for that exam or quiz. Note: Weekly homework assignments are printed at the end of each individual unit's handout.				
Inclement	In case of	f inclement weather call	the MOVC Hotline, (304) 674-7239 to determine		
Weather Policy	if class will meet. If class is not cancelled, but you have a concern about your safety, stay home. Consult the make-up policy for exams and quizzes. Homework is always accepted if the term has not ended and it is no more than 2 weeks late.				
Academic	Work sut	omitted for credit in this	course (quizzes, exams, and homework)		
Honesty	must be composed entirely by the student(s) whose name(s) appears on it – with one exception: students may receive help on homework assignments. This help may consist of solving specific questions from the homework, but the student must be able to then solve the problem without looking at the helper's work.				
Affirmative	this cours	se will follow Marshall U	Iniversity's policy on affirmative Action, which		
Action Policy	can be found in the undergraduate catalog. Specifically, all students will be afforded equal opportunity without regard to race, color, sex, religion, age, national origin, or sexual orientation.				
Social	The Colle	ege of Education and Hu	man Services has made a commitment to		
Justice	social justice. No one will be discriminated against on the basis of race, sex.				
o usuee	ethnicity, age, sexual orientation, social class, abilities, or differing viewpoints.				
	Each stuc	dent will be viewed as a	valuable part of this class.		
Policy for	Marshall	University is committed	to equal opportunity in education for all		
Students with	students, including those with physical, learning and psychological disabilities.				
Disabilities	University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117,				

phone 304-696-2271 to provide documentation of their disability. Following this, the DSS coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignments, testing and grading. The instructor and student will meet to discuss how the accommodation requested will be provided. For more information, please visit <u>http://www.marshall.edu/disabled</u> or contact the DSS office at Prichard Hall 117, phone 304-696-2271.

Computing ServiceAll students are responsible for knowing this policy which can be found on theAcceptable Useweb at <a href="http://www.marshall.edu/ucs/CS/accptuse.asp">http://www.marshall.edu/ucs/CS/accptuse.asp</a>Policy

## **Topic Outline**

Week 1– August 24, 2016 Unit 1A *Recognizing Fallacies* 5-13 Unit 1C *Sets and Venn Diagrams* 25-40

- Week 2 August 31, 2016 Unit 1B Propositions and Truth Values 14-24
- Week 3 September 7, 2016 Unit 1D Analyzing Arguments 41-54 Unit 1E Critical Thinking in Everyday Life 55-66

Week 4 – September 14, 2016 Unit 2A *The Problem-Solving Power of Units* 71-90 Cost of a Kg of Protein Unit 2B *Standardized Units: More Problem-Solving Power* 91-103 Chapter 1 Quiz

Week 5 – September 21, 2016 Unit 2C Problem-Solving Guidelines and Hints 104-116 Unit 3A Uses and Abuses of Percentages 120-134 Unit 3B Putting Numbers in Perspective 135-150 Cost to Cover an Acre

Week 6 – September 28, 2016 Chapters 1 & 2 Exam Unit 4A *Taking Control of your Finances* 186-196 Unit 4B The *Power of Compounding* 197-216

Week 7 – October 5, 2016 Unit 4D Loan Payments, Credit Cards, and Mortgages 236-253 Group problem solving presentations Unit 5A Fundamentals of Statistics 286-299 Week 8 – October 12, 2016 No class

Week 9 – October 19, 2016
Chapter 3 & 4(Units A&B) Quiz
Unit 5B Should You Believe a Statistical Study 300-309
Unit 5C Statistical Tables and Graphs pages 310-323
Unit 5D Graphics in the Media 324-341

- Week 10 October 26 Unit 5E Correlation and Causality pages 342–356 Unit 6A Characterizing Data 361–372
- Week 11 November 2, 2016 Unit 6A *Characterizing Data* (cont.) *Are You a Square*? Chapters 3 & 4 Exam
- Week 11 November 9, 2016 Unit 6B Measures of Variation 373-382
- Week 12 November 16, 2016 Unit 6C *The Normal Distribution* pages 383–393
- Week 13 November 30, 2016 Unit 7A Fundamentals of Probability Conditional Probability Experiment Chapters 5 & 6 (A, B) Quiz
- Week 14 December 7, 2016 Final Exam Review
- Week 15 December 14, 2016 Final Exam