Marshall University
Syllabus

Course Title/Number	**MTH 121 – 106 Concepts and Applications CRN: 3085**
Semester/Year	Fall 2017
Days/Time	1:00 – 1:50 MWF
Location	SH 514
Instructor	Laura L. Stapleton
Office	Smith Hall 720
Phone	304-696-4334
E-Mail	stapleto@marshall.edu
Office/Hours	11:00 – 2:00 TR
University Policies	By enrolling in this course, you agree to the University Policies listed at: http://www.marshall.edu/academic-affairs/?page_id=802
Philosophy	**To provide a supportive learning environment so that each learner can build on their strengths and to be an active participant in their own education.** **The success of my course depends directly on you recognizing that you are an indispensable part of every class session.**

Course Description: From Catalog

A quantitative reasoning skills course for non-science majors, this course meets a Core I/Critical Thinking requirement and a Core II/Social Sciences requirement. Topics include logical thinking, problem solving strategies, beginning statistics and probability, exponential and logarithms modeling, formula use, with basic algebra review. 3 hrs. PR: Math ACT 19 and above.

The table below shows the following relationships: How each student learning outcomes will be practiced and assessed in the course.

Course Student Learning Outcomes	**How students will practice each outcome in this Course**	**How student achievement of each outcome will be assessed in this Course**
Students will show mastery of basic Algebra skills.	Interactive in-class lectures, group work, in-class discussions, Critical thinking activities	In-class quizzes, activities, exams, out of class homework assignments and Critical Thinking activities
Students will solve real-world problems using unit analysis.	Interactive in-class lectures, homework, Group work, in-class discussions, Critical thinking activities	In-class quizzes, activities, exams, out of class homework assignments and Critical Thinking activities
Students will interpret and analyze numbers that they will encounter in the real world.	Interactive in-class lectures, homework, Group work, in-class discussions, Critical thinking activities	In-class quizzes, activities, exams, out of class homework assignments and Critical Thinking activities
Students will demonstrate a proficiency in utilizing formulas from	Interactive in-class lectures, homework, Group work, in-class	In-class quizzes, activities, exams, out of class homework

basic financial concepts such as loan payments, credit cards, and mortgages.	discussions, Critical thinking activities	assignments and Critical Thinking activities
Students will interpret and analyze statistical studies.	Homework, Group work, in-class discussions, Critical thinking activities	In-class quizzes, activities, exams, out of class homework assignments and Critical Thinking activities
Students will analyze and interpret statistical concepts such as measures of central tendency, measures of variation, and normal distributions.	Homework, Group work, in-class discussions, Critical thinking activities	In-class quizzes, activities, exams, out of class homework assignments and Critical Thinking activities
Students will compare linear growth and exponential growth rates and their real-world applications.	Homework, Group work, in-class discussions, Critical thinking activities	In-class quizzes, activities, exams, out of class homework assignments and Critical Thinking activities
Students will demonstrate a proficiency in the fundamentals of probability including expected value.	Homework, Group work, in-class discussions, Critical thinking activities	In-class quizzes, activities, exams, out of class homework assignments and Critical Thinking activities
Students will compare linear growth and exponential grown rates and their real-world applications	Interactive in-class lectures, homework, Group work, in-class discussions, Critical thinking activities	In-class quizzes, activities, exams, out of class homework assignments and Critical Thinking activities
Students will demonstrate an ability to analyze arguments and construct fallacies.	Homework, Group work, in-class discussions, Critical thinking activities	In-class quizzes, activities, exams, out of class homework assignments and Critical Thinking activities

Required Texts, Additional Reading, and Other Materials

1. Jeffrey O. Bennett and William L. Briggs, **Using and Understanding Mathematics**, Sixth Edition. ISBN# 9780321706065.
2. Scientific Calculator.
3. Access to a computer with Internet Access

Course Requirements / Due Dates

1. **Exam 1** (Chapters 2 – 3) week of **September 18th**.
2. **Exam 2** (Chapters 4 – 5) week of **October 9th**.
3. **Exam 3** (Chapters 6 – 7) week of **October 30th**.
4. Exam 4 (Chapters 8 – 9) week of **November 13th**.
5. The **Final** (Chapters 1, 8, 2, 4, 6, 7) is to be completed by **Friday, December 15, 2017 at 12:45– 2:45.**
   Note: All dates (except the Final) are tentative and subject to change.

ATTENDANCE: Students are expected to attend each class. Attendance is taken by a daily "sign-in" sheet. If you do not sign, then you will be counted as absent; and this "absence" cannot be corrected after the class has dispersed for the day. You are expected to participate in class discussions and activities.

Students who miss one or two class periods can turn in the excuse directly to their instructor. If the absence is 3 or more days, please go to the Dean of Students' Office in the MSC. Students must notify the instructor by phone or e-mail prior to an exam if they cannot take a scheduled exam. Students must present a serious reason for missing any exam (illness with a doctor's excuse, death in the family, university excused absence, etc.). Makeup exams will be given to students who have an excused absence for a test either outside of class time or during the last week of the semester at the convenience of the instructor.

GRADING POLICY: A student's grade is assessed by the following percentages earned from each of the categories below:

Category	**% of Grade**
In-Class Exams (4 at 15%)	60%
Attendance	5%
Basic Skills Assessments	10%
CT Activities	10%
Final	15%

The Mathematics Department uses the following grade scale for its classes:

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

CRITICAL THINKING COURSE OBJECTIVES: This course will focus on domains of Critical Thinking as a basis for understanding and interpreting mathematical topics that will enable students to develop the quantitative reasoning skills that they will need for college, career, and life. Emphasis will be placed on Improving Algebraic Skills necessary for future mathematics or science classes.

Course Student Learning Outcomes

(1) 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 and exponential growth and decay, and logarithmic models.

(2) 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.

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

(4) Students will formulate focused questions and hypotheses, evaluate existing knowledge, collect and analyze data, and draw justifiable conclusions as they apply inquiry-based thinking.
(5) 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.

CRITICAL THINKING ACTIVITIES: Students will complete various Critical Thinking (CT) Activities focusing on their ability to synthesize Information Literacy with Quantitative thinking. Due dates will be announced. Students will submit a paper copy for hand grading AND possibly an electronic version to be checked for plagiarism.

BASIC SKILLS QUIZZES: Students will take 5 quizzes that focus on the mathematics required to understand the focus of each section. These include Basic Math, Fractions, Scientific Notation, Exponents, and Algebra.

IN-CLASS ACTIVITIES/WORK: Students will engage one another during class by completing worksheet activities that help them discover the concepts in each section.

CLASSROOM ETIQUETTE: During class, cell phones must be turned off and out of sight. Please make the instructor aware ahead of time if you need access to these devices. If I determine that cell phones or other electronic devices are becoming a problem during class time, I will give the class a quiz over all recent topics daily until cell phone use is no longer an issue. If the issue persists, the person will be asked to leave the class. All conversations during class time should be on topic. If personal conversations become distracting to the class or myself, those students will be asked to leave the class to continue their conversations elsewhere.

EXAMS: Students will take three in-class exams covering approximately five - six sections each from the textbook. See the Calendar for approximate exam dates. You cannot use a cell phone calculator on exams/final.

FINAL EXAM: Students must take the MTH 121 Comprehensive Final Exam in order to complete the class and receive a letter grade. The final will be comprehensive and will be administered during exam week on Dec 15, 2016 at 12:45pm – 2:45 pm in our classroom. Please do not make plans to leave before this!

Tutoring Facilities

The Department of Mathematics offers a free tutoring lab for Marshall students enrolled in mathematics courses. The tutors can help with all classes up to MTH 231. No appointment is necessary; just stop in and ask for a tutor. The lab location and tutoring hours are:

Smith Hall 625: Monday through Thursday - 10am to 4pm and 5:00pm to 6:30pm. Friday - 10am to noon. The lab will open on the second week of classes, beginning August 28 and running through the end of the semester. The lab is not open during finals week.

The University College Tutoring Center in the Communications Building (second floor Smith Hall) has tutors who are available for free, by appointment. Additional information can be found at http://www.marshall.edu/wpmu/uc/tutoring-services

Schedule of Course (All Dates are approximate and are subject to change)

Week	Monday	Tuesday	Wednesday	Thursday	Friday
8/21 – 8/25	Syllabus		SK1 Material 2A		2A
8/28 – 9/1	Quiz 1, SK 2 Material		Discuss Project #1, 2A, 2B		Quiz 2, 2B
9/4 – 9/8	University Closed		2C, SK 3 Material		2C
9/11 – 9/15	Quiz 3 3A		3B, SK 4 Material		3C
9/18 -9/22	Quiz 4		Review		Exam 1
9/25 – 9/29	4A		4B, SK 5 Material		4C
10/2 – 10/6	Quiz 5, 4D		4E		4E
10/9 – 10/13	5C		Review		Exam 2
10/16 – 10/20	6A		6B		6B
10/23 – 10/27	6C		7A		7B (Last Day to Drop)
10/30 – 11/3	7E		7E		Review
11/6 – 11/10	Exam 3		8A		8B
11/13 – 11/17	8B		1A		1B
11/20 – 11/24	Thanksgiving Break				
11/27 – 12/1	1C		1D		1D
12/4 – 12/8	Review		Review		Review
12/11 – 12/15					Final: 12:45 – 2:45

Homework Questions Per Section

Section	Homework
2A	1, 2, 3, 13, 15(a-d), 17(a-e), 21, 23, 25, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 61, 63, 65, 67, 69, 73, 75, 77
2B	1, 13, 15, 17, 21, 23, 25, 27, 31, 33, 35
2C	1,7, 10, 13, 17
3A	1, 2, 3, 17, 19, 21, 23, 33, 35, 37, 43, 51, 53, 55, 57, 61, 54, 69
3B	1, 2, 5,15, 17, 19, 21, 23, 27, 29, 33, 41, 49
3C	1, 2, 3, 4, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 47, 49, 55, 59, 61, 63
4A	21,23,25,27,31,33,41,43,45,51
4B	1, 2, 8, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 41, 43, 45, 47, 55, 57, 59, 63, 65, 71, 73, 75,
4C	1, 2, 15, 17, 23, 25, 29, 31
4D	1, 2, 3, 4, 13, 15, 17, 21, 29, 31, 37, 41
4E	1, 2, 3, 4, 5, 19, 21, 23, 25, 29, 31, 33, 37, 47, 49
5C	1, 2, 3, 15, 17, 19, 21, 23, 25, 27

6A	1, 2, 5, 13, 15, 17, 19, 21, 23 , 27, 29, 37
6B	1, 2, 4, 13, 14, 15 (a-c), 17 (a-c), 19 (b, c)
6C	1, 2, 3, 4, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31
7A	1, 2, 3, 4, 5, 6, 13, 15, 17, 19, 21, 23, 25, 33, 35, 37, 39, 43, 45
7B	2, 3, 13, 15, 17, 19, 21, 23, 25, 27, 33, 39, 1, 43, 45, 64
7E	2, 3, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35,
8A	1, 2, 9, 11, 13, 15, 17, 18, 21, 22, 25, 26
8B	4, 13, 15, 19, 25, 27, 29, 33, 37, 39, 41, 43, 49, 53
1A	1, 2, 3, 11, 13, 15, 17, 25, 27, 31, 33
1B	1, 2, 3, 13, 15, 17, 19, 21, 23, 25, 29, 31, 33, 37, 39, 45, 51, 57
1C	
1D	