Marshall University Syllabus
College of Science
Department of Mathematics

Course Title/Number	MTH 121B – 113 Concepts and Applications CRN: 2968
Semester/Year	Fall 2018
Days/Time	4:45 – 6:25 MW
Location	MOVC 126
Instructor	Nicholas Bedway
Office	Gullickson Hall 212
Phone	304-696-3257
E-Mail	bedway@marshall.edu
Office/Hours	By Appointment
University Policies	By enrolling in this course, you agree to the University Policies listed at: http://www.marshall.edu/academic-affairs/policies/
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. 4 hrs. PR: ACT 18 or below.

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 basic financial concepts such as loan payments, credit cards, and mortgages.	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 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 17, 2018**.
2. **Exam 2** (Chapters 4 – 5) week of **October 8, 2018**.
3. **Exam 3** (Chapters 6 – 7) week of **November 5, 2018**.
4. **Final** (Chapters 1 – 8) is **Monday, December 10, 2018 at 4:45 p.m.**
   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. Unexcused absences from **two classes** will result in a reduction of one letter grade for the semester; unexcused absences from **four or more** classes will result in an F.

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 see Mr. Homer Preece or Ms. Shelia Fields in the MOVC office. 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 (3 at 15%)	45%
Attendance	5%
Basic Skills Assessments	10%
CT Activities	15%
Homework	10%
Final	15%

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

$$90.00\% - 100\% \quad = \quad A$$
$$80.00\% - 89.99\% \quad = \quad B$$
$$70.00\% - 79.99\% \quad = \quad C$$
$$60.00\% - 69.99\% \quad = \quad D$$
$$\text{Below } 60.00\% \quad = \quad F$$

CRITICAL THINKING COURSE OBJECTIVES: (Critical Thinking – Quantitative Thinking; Information Literacy; Communication Fluency.) 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.

- The **Quantitative Thinking** domain objectives ask students to **analyze** real-world problems, **formulate** plausible estimates, **assess** the validity of visual representations of quantitative information and **differentiate** valid from questionable statistical conclusions.
- The **Information Literacy** domain objectives ask students to **revise** their search strategies and employ appropriate research tools, **integrate** relevant information from reliable sources, **question** and **evaluate** the complexity of the information environment, and **use** information in an ethical manner.
- The **Communication Fluency** domain objectives ask students to **develop** cohesive oral, written and visual communication tailored to specific audiences.

CRITICAL THINKING ACTIVITIES: Students will complete 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 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: Students will engage one another during class by completing worksheet activities that help them discover the concepts in each section.

HOMEWORK EXERCISES: Students will be assigned textbook problems that relate to the lecture and activity. We will review these at the beginning of the next class. These will be submitted during each test. See the Homework Questions Per Section for details. You must show all of your work on the homework in order to receive credit.

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. 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 121B 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 Monday, December 10, 2018 at 4:45 pm in our Room 126.

TUTORING: Marshall University provides multiple options for free on-campus tutoring. It is the student's responsibility to take advantage of these facilities in addition to utilizing office hours. The Mathematics Department tutoring lab is located in in Smith Music Hall 115 (Huntington Campus). The schedule can be found at www.marshall.edu/math/tutoringlab.asp. The University College has a tutoring lab on the second floor of Smith Hall (Huntington Campus). The MOVC provides a tutor as well. Information on the available time will be given shortly. Information regarding this facility can be found at http://www.marshall.edu/wpmu/uc/tutoring-services.

Important Dates

August 20 - First Day of Classes

August 20 – August 24 - Late Registration

August 27 - "W" Withdrawal Period Begins

September 3 - University Closed, Labor Day

October 8 – Freshmen/Sophomore Mid-Term Grades Due

October 26 - Last Day to Drop a Full Semester Individual Course

November 19 – November 24 - Thanksgiving Break

November 26 - Classes Resume

December 3 – December 7 - "Dead Week"

December 7 - Last Day to Completely Withdraw

December 10 - Final Exam

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

Week of:	Topic(s) Covered	Week of:	Topic(s) Covered
Aug 20	Syllabus Review, Basic Skills Review and **Quiz**, Fraction Review	**Oct 15**	6A, 6B
Aug 27	Fraction **Quiz**, 2A, 2B	**Oct 22**	6C, 7A
Sep 3	2C, 3A	**Oct 29**	7B, 7E
Sep 10	3B, Scientific Notation Review and **Quiz**, 3C	**Nov 5**	**Review and Take Exam 3**
Sep 17	**Review and Take Exam 1**	**Nov 12**	8A, 8B
Sep 24	Exponent Review and **Quiz,** 4B, Algebra Review and **Quiz,** 4C	**Nov 26**	1A, 1B
Oct 1	4D, 4E, 5C	**Dec 3**	1D, Review for Final
Oct 8	**Review and Take Exam 2**	**Dec 10**	**Final**

Homework Questions Per Section

Due	Section	Homework
Due at Exam 1	**2A**	1, 2, 3, 13, 15, 17, 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
Due at Exam 2	**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
Due at Exam 3	**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,
Due at Final Exam	**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