



Marshall University
College of Science
School of Mathematics and Informatics
MTH 121B Syllabus

Course

MTH 121B – Concepts and Applications of Mathematics with Arithmetic Review (CT)
Section 111 CRN 2966

Course Description

A quantitative reasoning skills course for non-science majors. Topics include logical thinking, problem solving strategies, beginning statistics and probability, exponential and logarithms modeling, formula use, with basic arithmetic review.

Credits

4 credit hours

Prerequisites

ACT Math 12 or New SAT Math 330 or Old SAT 270 or above.

Term/Year

Fall 2018

Class Meeting Days/Times

2:00 – 2:50 MTWR

Location

CH 436

Academic Calendar

For beginning, ending, and add/drop dates, see the [Marshall University Academic Calendar](http://www.marshall.edu/calendar/academic) (URL: <http://www.marshall.edu/calendar/academic>).

Instructor

Shannon Miller-Mace

Contact Information

Office: SH 741B

Office Hours: MTW 9:00am – 11:00am, and by appointment.

Office Phone: (304)696-3796

Marshall Email: miller207@marshall.edu

Required Texts, Additional Reading, and Other Materials

1. Student will need access to the physical textbook or the e-book for Using and Understanding Mathematics: A Quantitative Reasoning Approach by Jeffrey Bennett and William Briggs, 6th Ed.
2. Students will be required to create a critical thinking project using a **computer or other approved medium**.
3. Students are required to be able to use a **scientific or graphing calculator** for the course.
4. Students may access assignments and supplemental course materials using **MUOnline/Blackboard**. Paper copies of all assignments will be provided in class.

Course Student Learning Outcomes

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

Course student learning outcomes. Students will:	How students will practice each outcome in this course	How student achievement will be assessed in this course
Show mastery of basic Algebra Skills.	interactive in-class lectures, group discussions, low-stakes writing, and out-of-class homework exercises and project rough drafts	quizzes, exams, and final project draft
Demonstrate an ability to analyze arguments and construct fallacies.	lecture and group discussions, low-stakes writing assignments and homework exercises, classroom activities and project rough drafts	quizzes, exams, and final project draft
Solve real-world problems	lecture and group discussions, low-stakes	quizzes, exams, and

using unit analysis.	writing assignments and homework exercises, classroom activities and project rough drafts	final project draft
Interpret and analyze numbers that they will encounter in the real world.	lecture and group discussions, low-stakes writing assignments and homework exercises, classroom activities and project rough drafts	quizzes, exams, and final project draft
Demonstrate a proficiency in utilizing formulas from basic financial concepts such as loan payments, credit cards, and mortgages.	lecture and group discussions, low-stakes writing assignments and homework exercises, classroom activities and project rough drafts	quizzes, exams, and final project draft
Interpret and analyze statistical studies.	lecture and group discussions, low-stakes writing assignments and homework exercises, classroom activities and project rough drafts	quizzes, exams, and final project draft
Create tables and graphs from statistical data.	lecture and group discussions, low-stakes writing assignments and homework exercises, classroom activities and project rough drafts	quizzes, exams, and final project draft
Analyze and interpret statistical concepts such as measures of central tendency, measures of variation, and normal distributions.	lecture and group discussions, low-stakes writing assignments and homework exercises, classroom activities and project rough drafts	quizzes, exams, and final project draft
Demonstrate a proficiency in the fundamentals of probability including expected value.	lecture and group discussions, low-stakes writing assignments and homework exercises, classroom activities and project rough drafts	quizzes, exams, and final project draft
Compare linear growth and exponential growth rates and their real-world applications.	lecture and group discussions, low-stakes writing assignments and homework exercises, classroom activities and project rough drafts	quizzes, exams, and final project draft
Apply techniques employing common logarithms to solve equations.	lecture and group discussions, low-stakes writing assignments and homework exercises, classroom activities and project rough drafts	quizzes, exams, and final project draft

Course Requirements/Due Dates

Students will utilize MUOnline/Blackboard (www.muonline.marshall.edu) to participate in **Discussion Forums**, submit **Quizzes**, and complete other **Instructor Assignments** posted by the course. Some of these course learning materials consist of community building, metacognitive ideas, reflective writing, and professional development skills.

The **Activities/Homework** assigned in the course content will be deployed Week-by-Week through MUOnline/Blackboard using the features of **Blackboard**. These assignments and activities are open book, open notes assignments and may be completed collaboratively until mastery is achieved. Students should resubmit until they earn full credit.

Students will be assessed by taking **Semester Exams** and the **Final Examination**. The course will be rolled out Week by Week as the semester progresses. Tests and the Final Exam are closed book/closed notes assessments, and to help preserve the integrity of the course, will be taken in-class with your instructor.

The major course assignment labeled **Project** will be broken into small segments throughout the semester, which will culminate in your final submission in Blackboard. Since this item contributes to the Critical Thinking portion of the course, students will use it to connect to one another and contribute to the overall goal of preparing a document that would teach the reader about the topic.

The **Summary Due Dates** (including hard and soft due dates) are provided below and embedded in the MUOnline/Blackboard course to provide a steady pacing through the material.

Grading Policy

Quizzes (7-10 assessments)	– 10%
Activities/Homework (collectively one grade)	– 10%
Project (peer reviews, multiple drafts)	– 20%
Semester Exams (4 exams @ 10% each)	– 40%
Final Exam (1 exam @ 20%)	– 20%
Total	– 100%

Letter Grade:

A student's final letter grade will be determined on the following scale:

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
Below 60%	F

Course Homework Information:

Students will take 7 to 10 **Quizzes** (time permitting) that focus on specific arithmetic and algebraic topics that are useful throughout the text and make up 10% of the course grade. **Activities/Homework**, where students complete worksheets, activities to engage that day's material, complete textbook problems that relate to the lecture/activity, make up 10% of the overall course grade. **Project**, which makes up 20% of the course, will ask students to complete a segmented set of assignments that focusing on their ability to synthesize Information Literacy with Quantitative Thinking and present their thoughts using Communication Fluency. **Semester Exams**, covering about six sections each, make up 40% from the four in-class exams that are 10% each. Students must take a comprehensive MTH 121B **Final Exam** to complete the course and receive a grade.

Exams: There will be four in-class exams as outlined in the course schedule.

Tentative dates are September 6, September 27, October 16, November 2, and November 30.

- 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.).
- If you have an **excused absence**, you will be allowed to make up assignments or exams. Makeup exams will be given to students outside of class time at the convenience of the instructor.
- If you are tardy to class on test day, no extra time will be given to finish the exam.

CLASSROOM ETIQUETTE: During class, cell phones must be turned off and out of sight. Please make the instructor aware ahead of time if access to these devices is needed. 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.

Attendance Policy

Students are expected to attend each class. Attendance is taken daily. If you are not present, then you will be counted as absent; and this "absence" cannot be corrected after the class has dispersed for the day. There are many activities that will be

conducted in class. Therefore, you must be present to participate.

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. Missing assignments and tests will be recorded in the gradebook as a 0.

Tutoring Facilities

Marshall University provides multiple options for free on-campus tutoring. The Mathematics Department tutoring lab is located in Smith Music Hall 625. The current schedule can be found at <https://www.marshall.edu/math/tutoring/>. University College has a tutoring lab on the second floor of Smith Hall. Their tutoring options can be found online at <http://www.marshall.edu/uc/tutoring-services/>. It is the student's responsibility to take advantage of these facilities in addition to utilizing office hours.

University Policies

By enrolling in this course, you agree to the University Policies. Please read the full text of each policy (listed below) by going to [Academic Affairs: Marshall University Policies](http://www.marshall.edu/academic-affairs/policies/). (URL: <http://www.marshall.edu/academic-affairs/policies/>)

- Academic Dishonesty Policy
- Academic Dismissal Policy
- Academic Forgiveness Policy
- Academic Probation and Suspension Policy
- Affirmative Action Policy
- Dead Week Policy
- D/F Repeat Rule
- Excused Absence Policy for Undergraduates
- Inclement Weather Policy
- Sexual Harassment Policy
- Students with Disabilities (Policies and Procedures)
- University Computing Services Acceptable Use Policy

Course Schedule

MTH 121B Course Calendar (subject to change)							
MTWR Class Fall 2018							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Aug	20	21	22	23	24	25	26
Week One	CH 1 Activity - Zombies	Syllabus Prologue	<i>Order of Operations</i> 1A	<i>Overlapping Circles</i> 1B			
Aug - Sept	27	28	29	30	31	1	2
Week Two	1C	1D	SQ #1 <i>Fraction Action</i>	CH 2 Activity – Problem Solving			
Sept	3	4	5	6	7	8	9
Week Three	Labor Day – No Classes	<i>Powers of 10</i> 2A	2B	SQ #2			
Sept	10	11	12	13	14	15	16
Week Four	Review for Exam 1	Exam 1	<i>FDP Patterns</i> 3A	<i>Scientific Notation</i>			
Sept	17	18	19	20	21	22	23
Week Five	3B	CH 3 Activity – Earth, Moon, & Sun	<i>Ratios and Percentages</i> 3C	SQ #3			
Sept - Oct	24	25	26	27	28	29	30
Week Six	4A	<i>Exponents and Roots</i>	4B	<i>Equations that Balance</i>			
Oct	1	2	3	4	5	6	7
Week Seven	PROJECT DRAFT DUE	CH 4 Activity – Marginal Tax Rates 4E	SQ #4	4C			
Oct	8	9	10	11	12	13	14
Week Eight	4D	Review for Exam 2	Exam 2	CH 5 (CH 12) Activity -			

				Voting Power			
Oct	15	16	17	18	19	20	21
Week Nine	5C	5D	SQ #5	CH 6 Activity – Weighted Averages			
Oct	22	23	24	25	26	27	28
Week Ten	6A	PROJECT PEER CRITIQUE	6B	6C			
Oct - Nov	29	30	31	1	2	3	4
Week Eleven	Review for Exam 3	Exam 3	CH 7 Activity – Let's Make a Deal	<i>Fractions</i>			
Nov	5	6	7	8	9	10	11
Week Twelve	7A	7B	7E	SQ #7			
Nov	12	13	14	15	16	17	18
Week Thirteen	CH 8 Activity – Radioactive Decay	PROJECT DRAFT DUE	<i>Basics of Logarithms and Laws</i>	8A			
Nov	19	20	21	22	23	24	25
Thanksgiving Break - No Classes							
Nov - Dec	26	27	28	29	30	1	2
Week Fourteen	8B	SQ #8	Review for Exam 4	Exam 4			
Dec	3	4	5	6	7	8	9
Week Fifteen	PROJECT PEER CRITIQUE	Working Session	Final Activity: Grades & GPA	Review for Final Exam	PROJECT DUE**		
Dec	10	11	12	13	14	15	16
Week Sixteen	Final Exam* 12:45 – 2:45						

*Students must take the MTH 121B Comprehensive Final Exam which is scheduled for **Monday**,

December 10th, 2018 at 12:45pm – 2:45pm in CH 436.

****Students are required to submit an Artifact before the end of the semester.**