**Marshall University**

**Syllabus**

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| Course Title/Number  | **MTH 121 section 105 – Concepts and Applications of Mathematics with Algebra Review (CT) – CRN 3179** |
| Semester/Year | Fall 2014 |
| Days/Time | MWF 3:00pm – 3:50 pm |
| Location | CH 436 |
| Instructor | Professor Shannon Miller-Mace |
| Office | SH 316 |
| Phone | (304)696-3796 |
| E-Mail | miller207@marshall.edu |
| Office/Hours | MW 4:00 – 4:45 and TR 3:00 – 4:45, or by appointment. |
| University Policies | By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy be going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to <http://www.marshall.edu/academic-affairs/?page_id=802> Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment  |

**Course Description: From Catalog**

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| 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. (PR: MTH 099 or Math ACT 19+) **3 hr.** |

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| **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.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will demonstrate an ability to analyze arguments and construct fallacies.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will solve real-world problems using unit analysis.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will interpret and analyze numbers that they will encounter in the real world.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will demonstrate a proficiency in utilizing formulas from basic financial concepts such as loan payments, credit cards, and mortgages.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will interpret and analyze statistical studies.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will create tables and graphs from statistical data.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will analyze and interpret statistical concepts such as measures of central tendency, measures of variation, and normal distributions.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will demonstrate a proficiency in the fundamentals of probability including expected value.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will compare linear growth and exponential growth rates and their real-world applications.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |
| **Students will apply techniques employing common logarithms to solve equations.** | Students will **practice each outcome** during interactive in-class lectures, textbook exercises assigned for homework, in-class group discussions and activities, board work, low-stakes writing, and project rough drafts. | Student **achievement of each outcome will be** **assessed** using in-class quizzes, homework assignments, research projects, group activities, in-class exams. |

**Required Texts, Additional Reading, and Other Materials**

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| 1. The textbook will be provided for free in class. The textbook can also be accessed online in MUOnline or the MyQuantway platform. Students should have a printed copy of the textbook for in class use.
2. Students will be required to access the **online homework tool** that will be used for the course. There are many computer labs located around campus.
3. Students are required to have a **scientific or graphing calculator** for the course.
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**Course Requirements / Due Dates**

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| 1. MyQuantway.org is the online homework tool and access will be provided to the student for free. Students are required to have access to a computer and Internet outside of class. Each assignment has two parts – one due before class and another due after class.
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**Attendance Policy**

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| Students are expected to attend each class. Unexcused absences from **four** classes will result in a reduction of one letter grade for the semester; unexcused absences from **six or more** classes will result in an F. To obtain an excused absence, 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. Makeup exams will be given to students outside of class time at the convenience of the instructor.  |

**Grading Policy**

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| Each of the **three in-class** **exams** will be worth **15%** of the semester grade. Online homework is 25% of the course grade. There will be a 5% category containing Activities/Participation. The **Final Exam** will count for **25%** of the grade.A student’s final letter grade will be determined on the following scale:Semester Exams – 45%Online Homework – 25%Activities/Participation – 5%Final Exam\* – 25%Total – 100%90.00 – 100% A 80.00 – 89.99% B 70.00 – 79.99% C 60.00 – 69.99% D Below 60.00% F\*Students must take the MTH 121 Comprehensive Final Exam in order to complete the class and receive a letter grade. The exam is scheduled for Monday, December 8th, 2014 at 3:00 – 5:00 in CH 436. |

**Academic Support:**

There are a number of ways students can access **tutoring** during the semester.  The Mathematics Department Tutoring Lab, located in Smith Hall 115, provides a **free service** that is available for walk-in service daily, Monday – Friday.  Approximately two weeks after the semester begins, a schedule will be posted on the 5th floor of Smith Hall and at the following web address:

<http://muwww-new.marshall.edu/math/tutoringlab.asp>.

A second location for tutoring can be found within The University College in Laidley Hall.  This is also a **free tutoring service** available in a lab setting through walk in service, but students can also schedule one-on-one meetings with a personal tutor.

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| MTH121Q Course Calendar (subject to change) - |   |
| MWF Class Fall 2014 |   |   |
|   | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
| Week 1 |   |   |   |   |   |   |   |
| 8/25 - 8/28 | Syllabus Review |   | 5.1, Intro to MyQuantway |   | 5.1 |   |   |
| Week 2 |   |   |   |   |   |   |   |
| 9/1 - 9/4 | Labor Day - No Class  |   | 5.2 |   | 5.3 |   |   |
| Week 3 |   |   |   |   |   |   |   |
| 9/8 - 9/11 | 5.4 |   | 5.5 |   | 5.6 |   |  |
| Week 4 |   |   |   |   |   |   |   |
| 9/15 - 9/18 | 5.7 |   | 5.8 |   | 5.9 |   |  |
| Week 5 |   |   |   |   |   |   |   |
| 9/22 - 9/25 | 5.10 |  | Finish notes and Review |   | **Exam 1 Module 5** |   |  |
| Week 6 |   |   |   |   |   |   |   |
| 9/29 - 10/2 | 6.1 |   | 6.2 |   | 6.3 |   |   |
| Week 7 |   |   |   |   |   |   |   |
| 10/6 - 10/9 | 6.4 |   | 6.5 |   | 6.6 |   |  |
| Week 8 |   |   |   |   |   |   |   |
| 10/13 - 10/16 | 6.7 |   | 6.8 |   | 6.9 |   |   |
| Week 9 |   |   |   |   |   |   |   |
| 10/20 - 10/23 | Finish notes and Review |   | **Exam 2 Module 6** |   | 7.1 |   |  |
| Week 10 |   |   |   |   |   |   |   |
| 10/27 - 10/30 | 7.2 |   | 7.3 |   | 7.4 |   |  |
| Week 11 |   |   |   |   |   |   |   |
| 11/3 - 11/6 | 7.5 |   | 7.6 |   | 7.7 |   |  |
| Week 12 |   |   |   |   |   |   |   |
| 11/10 - 11/13 | Finish notes and Review |  | **Exam 3 Module 7** |   | 8.1 |   |  |
| Week 13 |   |   |   |   |   |   |   |
| 11/17 - 11/20 | 8.2 |   | 8.3 |   | 8.4 |   |   |
| Week 14 |   |   |   |   |   |   |   |
| 11/24 - 11/27 | Thanksgiving Break - No Classes |   |  |
| Week 15 |  |  | **Dead Week** |  |  |  |  |
| 12/1 - 12/4 | Review for Final |   | Review for Final |   | Review for Final |  |   |
| Week 16 |   |   |   |   |   |   |   |
| 12/8 - 12/11 | **FINAL EXAM 3:00 - 5:00** |   |   |   |   |   |  |

**Homework:**

Students will be assigned to complete an **ONLINE** assignment **BEFORE** a lesson is covered **IN CLASS**. Then, **READ** a portion of the textbook **and** complete another **ONLINE ASSIGNMENT** **AFTER** the classroom discussion for each lesson. The assignments are contained on the MyQuantway platform. **Students will need to *work at least 2-4 hours outside of class for every 1 hour spent in class,* studying notes and the textbook, and completing homework and other assignments to meet the requirements of the course.**

**Domains**: Critical Thinking -- Quantitative Thinking; Information Literacy; Communication Fluency.

**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 they will need for college, career, and life. Emphasis will be placed on **improving Algebraic skills** necessary for future science classes.

 The **Quantitative Thinking** domain objectives ask to 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.

***\*\*Students are required to submit a GEAR artifact before the end of the semester. \*\****

**Important Dates:**

The following are a few dates that are noteworthy:

9/1/14 **Labor Day – University Closed**

10/20/14 **Freshman/Sophomore Midterm Grades Due**

10/31/14 **Last Day to Drop a Full Semester Course**

11/24/14 – 11/29/14 **Thanksgiving/Fall Break – No Classes**

12/1/14 – 12/6/14 **Dead Week**

12/8/14 **MTH 121B - 106 Final Exam Day - CH 436**

**(3:00 p.m. – 5:00 p.m.)**