**Marshall University**

|  |  |
| --- | --- |
| Course Title/Number | **MTH 121: Concepts and Applications of Mathematics** |
| Semester/Year | Spring 2014 |
| Days/Time | TR 8:00-9:15am |
| Location | Smith Hall 518 |
| Instructor | Matt Lucas |
| Office | Smith Music 115 |
| Phone | 304 696-3986 |
| E-Mail | [Lucas89@marshall.edu](mailto:Lucas89@marshall.edu) |
| Office/Hours | MW 2-3pm, TR 1-2pm |
| 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/policies](http://www.marshall.edu/academic-affairs/?page_id=802)  **University Policies:** 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**

|  |
| --- |
| **Course Description:** This is a 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. |

The table below shows the following relationships: How each student learning outcomes 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 of each outcome will be assessed in this Course** |
| Use critical thinking skills to analyze problems. | In-Class Discussion, Group work, & homework | Projects, Quizzes, & Exam |
| Recognize logical fallacies in arguments. | “ | “ |
| Use truth tables to analyze compound mathematical statements. | “ | “ |
| Use common mathematical proof techniques to construct mathematical arguments. | “ | “ |
| Solve real-world problems using unit analysis. | “ | “ |
| Interpret and analyze numbers that they will encounter in the real world. | “ | “ |
| Demonstrate a proficiency in utilizing formulas from basic financial concepts such as loan payments, credit cards, and mortgages. | “ | “ |
| Interpret and analyze statistical studies. | “ | “ |
| Create tables and graphs from statistical data. | “ | “ |
| Analyze and interpret statistical concepts such as measures of central tendency, measures of variation, and normal distributions. | “ | “ |
| Demonstrate a proficiency in the fundamentals of probability including expected value. | “ | “ |
| Compare linear growth and exponential growth rates and their real-world applications. | “ | “ |
| Apply techniques employing common logarithms to solve equations. | “ | “ |

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

|  |
| --- |
| 1. **Bennett, Jeffrey*. Using and Understanding Mathematics: A Quantitative Reasoning Appproach.* 5th edition.ISBN: 9780321652799 (You do NOT need the access code).** 2. A scientific calculator |

**Course Requirements / Due Dates**

|  |
| --- |
| 1. Quiz 1 February 13th 2. Project 1 February 27th 3. Quiz 2 March 13th 4. Spring Break March 17th - 23rd 5. The last day to drop a course for the semester is Friday March 28th 6. Project 2 April 3rd. 7. Quiz 3 April 17th 8. Project 3 April 29th 9. FINAL EXAM Thursday May 8th at 8:00-10:00am. |

**Grading Policy**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Homework | 100 pts. |  | **Grade** | **Points Needed** |
| Projects (3) | 150 pts. |  | **A** | 500-450 pts. |
| Quizzes (3) | 150 pts. |  | **B** | 400-449 pts. |
| Final Exam | 100 pts. |  | **C** | 350-399 pts. |
| Total: | 500 pts. |  | **D** | 300-349 pts. |
|  |  |  | **F** | 299 or less pts. |

**Attendance Policy**

|  |
| --- |
| The most important thing to you can do to ensure success in this course is to come to class. I understand that situations may arise during the semester where you may not be able to make it to class, but you need to keep me informed. I will post class notes, which will include any homework assignments, on the website given site and you will be responsible for all work assigned during a class when you are absent. **You will receive a zero for work not turned in on time due to an unexcused absence.** I will happily make arrangements for any excused absence you may have. To apply for an excused absence, go to the Office of Student Affairs located at the student center. For more information on unexcused absences, go to the University Policies link provided above. |

**MTH 121: Concepts and Applications of Mathematics (CT)**

**Sec 209 – CRN 4265 - TR 8:00-9:15am**

**Spring 2014 Syllabus (Tentative)**

Classroom: **Smith Hall 513**

Instructor**: Matt Lucas**

Office: **Smith Music 115**

Phone: **(304) 696-3986**

Email: [**lucas89@marshall.edu**](mailto:lucas89@marshall.edu) **(This is the best way to get in touch with me)**

Office Hours: **TBD**

Class Notes Site: <http://mupfc.marshall.edu/~lucas89/Spring2014/MTH121>

**UNIVERSITY POLICIES:** By enrolling in this course, you agree to the University Policies listed below. You can access the full text regarding each of these 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:** This is a critical thinking course for non-science majors that develops quantitative reasoning skills. Topics include (but not limited to) logical thinking, problem solving, linear modeling, beginning statistics and probability, exponential and logarithmic modeling, and financial concepts.

**Prerequisites:** MTH 099 OR Math ACT 19 OR Math SAT 460

**Student Learning Outcomes:**

|  |  |  |
| --- | --- | --- |
| **Students will…** | **How Students will practice each outcome in this Course** | **How student achievement of each outcome will be assessed in this course.** |
| Use critical thinking skills to analyze problems. | In-Class Discussion, Group work, & homework | Projects, Quizzes, & Exam |
| Recognize logical fallacies in arguments. | “ | “ |
| Use truth tables to analyze compound mathematical statements. | “ | “ |
| Use common mathematical proof techniques to construct mathematical arguments. | “ | “ |
| Solve real-world problems using unit analysis. | “ | “ |
| Interpret and analyze numbers that they will encounter in the real world. | “ | “ |
| Demonstrate a proficiency in utilizing formulas from basic financial concepts such as loan payments, credit cards, and mortgages. | “ | “ |
| Interpret and analyze statistical studies. | “ | “ |
| Create tables and graphs from statistical data. | “ | “ |
| Analyze and interpret statistical concepts such as measures of central tendency, measures of variation, and normal distributions. | “ | “ |
| Demonstrate a proficiency in the fundamentals of probability including expected value. | “ | “ |
| Compare linear growth and exponential growth rates and their real-world applications. | “ | “ |
| Apply techniques employing common logarithms to solve equations. | “ | “ |

**Required Materials:**

**TEXTBOOK**

* **Bennett, Jeffrey*. Using and Understanding Mathematics: A Quantitative Reasoning Appproach.* 5th edition.ISBN: 9780321652799 (You do NOT need the access code).**

**TECHNOLOGY**

* A scientific calculator (one with exponent and logarithm keys). **No phones, ipads, laptops are permitted on quizzes and exams.**
* Marshall computer access and/or personal access to MS Word and Excel and internet access.

**Important Dates (Quiz/Project Dates Subject to Change):**

* Quiz 1 February 13th
* Project 1 February 27th
* Quiz 2 March 13th
* Spring Break March 17th - 23rd
* The last day to drop a course for the semester is Friday March 28th
* Project 2 April 3rd.
* Quiz 3 April 17th
* Project 3 April 29th
* FINAL EXAM Thursday May 8th at 8:00-10:00am.

**Grading Policy:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Homework | 100 pts. |  | **Grade** | **Points Needed** |
| Projects (3) | 150 pts. |  | **A** | 500-450 pts. |
| Quizzes (3) | 150 pts. |  | **B** | 400-449 pts. |
| Final Exam | 100 pts. |  | **C** | 350-399 pts. |
| Total: | 500 pts. |  | **D** | 300-349 pts. |
|  |  |  | **F** | 299 or less pts. |

**Other Course Policies:**

**ATTENDENCE:** The most important thing to you can do to ensure success in this course is to come to class. I understand that situations may arise during the semester where you may not be able to make it to class, but you need to keep me informed. I will post class notes, which will include any homework assignments, on the website given site and you will be responsible for all work assigned during a class when you are absent. **You will receive a zero for work not turned in on time due to an unexcused absence.** I will happily make arrangements for any excused absence you may have. To apply for an excused absence, go to the Office of Student Affairs located at the student center. For more information on unexcused absences, go to the University Policies link provided above.

**HOMEWORK:** In addition to in-class assignments and discussion, students will be assigned homework after nearly every class period. Each homework assignment will be due at the beginning of the next class. **No late homework will be accepted unless you have a University excused absence.**

**PROJECTS:** There will be three required projects in this course. The details of each will be given when they are assigned. At least one of these projects will include presenting your results to your classmates as part of the evaluation. When each project is assigned, you will receive a grading rubric so you will know exactly how each project will be evaluated.

**QUIZZES:** There will be a total of three in-class quizzes during the semester. Each quiz will be worth 50 points and will cover all material discussed in class since the previous quiz. Calculators will be permitted, but absolutely no phones, ipads, or other network connected devices will be permitted.

**FINAL EXAM:** The final exam in this class will be comprehensive, and will be comprised of questions very similar to those found on previous quizzes, as well as any new material covered between the last quiz and the final exam. The final exam will be held from 8:00am to 10:00am on Thursday May 8th.

**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 emergency access to these devices. Any unauthorized use of cell phones, especially sending text messages, during class could result in losing daily attendance credit.

**CALCULATORS:** You will need a scientific calculator for this course. You may use a calculator on all assignments and exams, but absolutely no phones, ipads, etc. may be used on exams.

**TUTORING FACILITIES:** Marshall University provides multiple options for on-campus tutoring. The Mathematics Department tutoring lab is located in Smith Music Hall 115 and is open from 9am-5pm on Mon through Thursday, and 9am-12pm on Friday. You do not need an appointment or pay anything for this service, just show up and someone will be available to help you. Also, the University has a tutoring services on the first floor of Laidley Hall. It is the student’s responsibility to utilize these facilities.

**PLAGIARISM/ACADEMIC DISHONESTY:** Marshall University expects academic honesty.  Students who commit breaches of academic honesty will be subject to the various sanctions outlined in the Undergraduate Catalog.   See the policy here: [www.marshall.edu/catalog/undergraduate/ug\_09-10.pdf](http://www.marshall.edu/catalog/undergraduate/ug_09-10.pdf).

**STUDENTS WITH DISABILITIES:** It is the responsibility of the student to contact the Office of Disability Services. For policies and procedures, visit [www.marshall.edu/disabled/index.htm](http://www.marshall.edu/disabled/index.htm). Please let your instructor know immediately if this applies to you.