**Marshall University**

**MTH 127 Syllabus**

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| Course Title/Number | College Algebra Expanded Version MTH 127 |
| Semester/Year | Spring 2016 |
| Section/CRN | 209 4031 |
| Days/Time | MW 5:00 pm – 5:50 pm, TR 5:00 pm – 6:15 pm |
| Location | SH 513 |
| Instructor | Professor Shannon Miller-Mace |
| Office | SH 741B |
| Phone | (304) 696-3796 |
| E-Mail | [miller207@marshall.edu](mailto:miller207@marshall.edu) OR MUOnline/Blackboard |
| Office/Hours | MTWR 2:00 pm – 3:00 pm, MT 4:00 pm – 5:00 pm, 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 by 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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| A brief but careful review of the main techniques of algebra. Polynomial, rational, exponential, and logarithmic functions. Graphs, equations and inequalities, sequences. 5 hours. (PR: Math ACT 19 or MTH 102 or MTH 102B) |

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

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| 1. **College Algebra** by Larson, 9th Edition with Graphing Calculator Supplement 2. Students will be required to use a **computer** to access WeBWork and communicate with the instructor outside of class. Many computer labs are located around campus. 3. Students are required to have a **graphing calculator** for the course. 4. Students should keep a **notebook** of all class notes, written homework assignments, etc. and collect handouts, worksheets, quizzes, and tests. 5. Students may access **supplemental course materials** using larsonprecalculus.com. |

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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 have a solid understanding of basic concepts in algebra and how they are used.** | interactive lectures and discussions, group activities, and homework exercises | WeBWork assignments, semester tests, final examination |
| **Students will develop facility in using graphing calculators to help solve problems.** | interactive lectures and discussions, group activities, and homework exercises | WeBWork assignments, semester tests, final examination |
| **Students will be prepared for other courses in math, including trigonometry, mastering a foundation in the study of functions.** | interactive lectures and discussions, group activities, and homework exercises | WeBWork assignments, semester tests, final examination |
| **Students will be prepared for other course, such as in the sciences, exploring applications of functions and topics related to mathematical modeling.** | interactive lectures and discussions, group activities, and homework exercises | WeBWork assignments, semester tests, final examination |

**Course Requirements / Due Dates**

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| 1. Activities and Exercises – Outside-of-class, students will prepare with reading and exercises from the textbook. In-class, they will complete mini lesson worksheets and activities that promote discovery and practice of the concepts covered in lesson. See the Course Schedule for approximate lesson coverage dates. Due dates will be announced in class. 2. WeBWork – Students will complete sets of exercises to assess their understanding of the material outside of class through the online platform WeBWork. Due dates will fluctuate with the flow of the class and will be approximately once a week. 3. Semester Tests – Students will take five in-class exams covering sections from the textbook. See the Course Schedule for test dates. 4. Final Examination – Students will be assessed using a cumulative Final Exam. See the Calendar for the Course Schedule exam date. |

**Grading Policy**

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| **Activities and Exercises** will be worth **15%**, **WeBWork** will count for **15%,** the **five in-class** **exams** will be worth **50%** of the semester grade, and the **Final Exam** will count for **20%** of the grade.  Activities and Exercises –> 15%  WeBWork –> 15%  Semester Exams –> 50%  Final Examination\*\* –> 20%  Total –> 100%  A student’s final letter grade will be determined on the following scale:  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 127 Comprehensive Final Examination in order to complete the class and receive a letter grade. The exam is scheduled for Monday, May 2nd, 2016 at 5:00 pm – 7:00 pm in SH 513. **\*\*** |

**Attendance Policy**

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| Students are expected to attend each class. **Unexcused absences** from **10%** of the class (**6 class periods**) will result in an **F** **letter grade** for the semester. Excessive use of cell phone or sleeping during class will be counted as an unexcused absence. Students who are frequently tardy or leave class early will also receive an unexcused absence. It is the responsibility of the student to keep track of the number of unexcused absences they have accumulated.  Only **excused absences** will warrant make up assignments or exams. To obtain an excused absence, please see the instructor or 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. |

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| **MTH 127 Course Schedule (subject to change)** | | | | | | | |
| **MTWR Class Spring 2016** | | | | | | | |
|  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
| Jan | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Week  One | Syllabus | P.1  P.2 | P.3  P.4 | P.5  P.6 |  |  |  |
| Jan | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| Week  Two | MLK JR Day – No Classes | 1.1 | 1.2 | 1.3 |  |  |  |
| Jan | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| Week Three | 1.4 | 1.5 | 1.6 | 1.7 |  |  |  |
| Feb | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Week Four | 1.8 | CH 1 Summary | **Q & A for TEST 1** | **TEST 1** |  |  |  |
| Feb | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Week  Five | 2.1 | 2.2 | 2.3 | 2.4 |  |  |  |
| Feb | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| Week  Six | 2.4  2.5 | 2.5 | 2.6 | 2.6  2.7 |  |  |  |
| Feb | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| Week Seven | 2.7 | CH 2 Summary | **Q & A for TEST 2** | **TEST 2** |  |  |  |
| Feb – Mar | 29 | 1 | 2 | 3 | 4 | 5 | 6 |
| Week Eight | 3.1 | 3.1  3.2 | 3.2 | 3.3 |  |  |  |
| Mar | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Week Nine | 3.3  3.4 | 3.4 | 3.5 | CH 3 Summary |  |  |  |
| Mar | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Week  Ten | **Q & A for TEST 3** | **TEST 3** | 4.1 | 4.2 |  |  |  |
| Mar | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| Spring Break - No Classes | | | | | | | |
| Mar – Apr | 28 | 29 | 30 | 31 | 1 | 2 | 3 |
| Week Eleven | CH 4 Summary | 5.1 | 5.1  5.2 | 5.2 |  |  |  |
| Apr | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Week Twelve | 5.3 | 5.4 | 5.5 | CH 5 Summary |  |  |  |
| Apr | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Week Thirteen | **Q & A for TEST 4** | **TEST 4** | 6.1 | 6.1  6.2 |  |  |  |
| Apr | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| Week Fourteen | 6.2 | 6.2  6.3 | 6.3 | CH 6 Summary |  |  |  |
| Apr - May | 25 | 26 | 27 | 28 | 29 | 30 | 1 |
| Week Fifteen | **Q & A for TEST 5** | **TEST 5** | **Review for Final** | **Review for Final** |  |  |  |
| May | 2 | 3 | **4** | 5 | 6 | 7 | 8 |
| Week Sixteen | FINAL EXAM |  |  |  |  |  |  |

MTH 127 Topic Coverage – Spring 2016

1. Brief review of basic concepts of algebra
   * The real number system
   * Integer exponents
   * Scientific notation
   * Order of operations
   * Operations with polynomials
   * Factoring
   * Radical exponents
   * Basic equation solving
   * Distance formula
   * Midpoint formula
   * Graphs of equations
   * Circles
2. Study of functions
   * Definition of a function
   * Domain and range
   * Graphs of functions
   * Linear functions
   * Quadratic functions
   * Polynomial functions
   * Radical functions
   * Rational functions
   * Exponential functions
   * Logarithmic functions
3. Further study of functions
   * Mathematical models
   * Increasing, decreasing and constant functions
   * Piecewise defined functions
   * Operations with functions
   * Composition of functions
   * Inverse functions
   * Transformations of graphs of functions
4. Applications
   * Mathematical modeling
   * Maxima and minima
   * Exponential growth
   * Exponential decay
5. Further topics
   * Complex number system
   * Remainder Theorem
   * Factor Theorem
   * Synthetic Division
6. Linear algebra topics, including
   * Solving systems of linear equations graphically
   * Substitution method of solving systems of linear equations
   * Elimination method of solving systems of linear equations
   * Solving up to 3x3 systems of linear equations