*Approved: JUNE 2009* *Effective: FALL 2009*

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| **MATERIAL TO BE COVERED** | **SECTIONS**  **FROM TEXT** | **TIME LINE** |
| CHAPTER 1: SCIENTIFIC ESSENTIALS Rates and proportions, unit  conversion, numeracy, algebraic simplification, solving literal equations, absolute value and inequalities, functions and graphs. | 1.1 - 1.7 | 11 Hours |
| CHAPTER 2: MODELING WITH LINEAR FUNCTIONS Laboratory  activity: using linear functions to model motion, algebraic analysis of linear expressions, graphing and modeling with linear functions, finishing the lab report. | 2.1 - 2.4 | 5 Hours |
| CHAPTER 3: MODELING WITH LINEAR SYSTEMS OF EQUATIONS  Solving linear systems, the essentials of vector algebra, matrices and Row-Echelon form (Optional), operations on matrices, least-squares solutions. | 3.1 - 3.2  3.4 - 3.5  3.3 Optional | 7 Hours |
| CHAPTER 4: MODELING WITH QUADRATIC FUNCTIONS Laboratory  activity: the ball bounces, algebraic analysis of quadratic expressions, graphing and modeling with quadratic functions, fitting paired data to quadratic functions, finishing the lab report. | 4.1 - 4.5 | 8 Hours |
| CHAPTER 5: MODELING WITH RATIONAL FUNCTIONS Laboratory activity: using rational functions to discover Boyle's Law, algebraic analysis of rational expressions, graphing and modeling with rational functions, fitting paired data to rational functions, finishing the lab report. | 5.1 - 5.5 | 7 Hours |
| CHAPTER 6: MODELING WITH RADICAL FUNCTIONS Laboratory activity: using radical functions to model light intensity, algebraic analysis of radical expressions, graphing and modeling with radical functions, fitting paired data to radical functions, finishing the lab report. | 6.1 - 6.5 | 7 Hours |
| CHAPTER 7: EXPONENTIAL & LOGARITHMIC FUNCTIONS Laboratory activity: Newton's Law of cooling, exponential functions, inverse functions, logarithms and their properties, modeling with exponential functions, fitting paired data to exponential functions, finishing the lab report. | 7.1 - 7.7 | 12 Hours |
| CHAPTER 8: SUMMARY OF CRITICAL MATHEMATICAL METHODS  Review of proportionalities and literal equations. | 8.1 | 2 Hours |
| CHAPTER 9: SERIES NOTATION AND PROBABILITY Laboratory  activity: the ball bounces again, introduction to series notation, the  Binomial Theorem and binomial experiments, finishing the lab report. | 9.1 - 9.4 | 6 Hours |

### 5-unit class: hours total 72.5 (15 x 4 hours 50 minutes) – hours for exams + 2.5 hour final

This outline allows for 5 hours of exams.

Submitted by: Guth.

Math Department Policy can be found at: https://mtsac.instructure.com/courses/33990/files?preview=1988385