

Carthage Mathematics Department
Course Summary for Math 1040 Principles of Modern Mathematics

- 1) Credits: 4 cr.
- 2) Semesters Offered: Fall, January, Spring, Summer
- 3) Text(s): *Mathematical Ideas* by Miller, Heeren, and Hornsby, 12th edition
- 4) Topics Covered:
 - a) Problem solving
 - b) Set theory
 - c) Logic
 - d) Number Theory
 - e) Counting
 - f) Probability
 - g) Statistics
 - h) Geometry
- 5) Skills Enhanced:
 - a) Quantitative reasoning
 - b) Critical thinking
 - c) Mathematical literacy
 - d) Expressing mathematical concepts verbally and in writing
 - e) Use of Excel in data analysis
- 6) Sample Syllabus: From the 12th edition, chapters
 1. Problem Solving
 2. Set Theory
 3. Logic
 4. Numeration Systems
 5. Number Theory
 6. Real Numbers
 7. Algebra
 9. Geometry
 10. Trigonometry
 12. Probability
 13. Statistics
 14. Personal Financial Management
- 7) Miscellanea
 - a) This course is taken by many future elementary school teachers
- 8) Course Goals: By the end of the course, students should be able to do the following.
 - a) Demonstrate knowledge of the basic vocabulary of mathematics and geometry
 - i) Assessment: Cumulative Final Examination, Chapter Tests, Homework, and quizzes.
 - b) Use a calculator and Microsoft Excel to solve problems
 - i) Assessment: Test and quizzes contain questions which require a calculator and use of excel.
 - c) Demonstrate an understanding of statistics in the media
 - i) Assessment: Tests and quizzes contain questions based on examples of statistics in the media.
 - d) Demonstrate sufficient knowledge of the course content
 - i) Assessment: Sufficient knowledge is required to pass the chapter tests and cumulative final examination

- ii) Written Assessment: Produce a seven page or more written paper in APA style, with a minimum of seven sources applying mathematical concepts to their college major or a specific mathematical topic approved by the instructor: Police Mathematics, Mathematics Teaching Unit, etc
- iii) Develop a personal stock portfolio during the first week of the course representing producing companies and service companies and analyze their overall performance during the semester in a written report.