

Carthage Mathematics Department

Course Summary for Math 1030 (103) Applied Mathematics

1. Credits: 4
2. Semesters Offered: every
3. Text(s): For All Practical Purposes, Eighth edition
4. Topics Covered:
 - a. All sections cover Elementary Statistics:
collecting data; representing data; histograms; means, medians and modes; statistical estimation
 - b. Remaining units are chosen from these topics:
 - i. Graph Theory: Euler and Hamiltonian circuits, scheduling and bin-packing algorithms
 - ii. Social Choice: voting, apportionment
 - iii. Geometry: Symmetry, Fibonacci numbers, Frieze patterns, Tiling
 - iv. Consumer Mathematics: savings accounts, loans, credit cards
 - v. Graph reading and constructing, including misleading graph
5. Skills Enhanced:
 - a. General Quantitative Literacy
 - b. Careful reading
 - c. Computation, especially using calculators and interpreting decimal numbers and scientific notation
 - d. Logical reasoning
 - e. Application of algorithms
 - f. Interpretation of graphical data
 - g. Self-preservation in the commercial world of finance
6. Sample Syllabus:
 - a. Part II Statistics: The Science of Data, Chapters 5-8
 - b. Two other parts chosen from the following list:
 - Part I Management Science, Chapters 1-4
 - Part III Voting and Social Choice, Chapters 9-12
 - Part IV On Size and Growth, Chapters 18-20
 - Part VII Your Money and Resources, Chapters 21-23
 - Part G Handouts on the Language of Increase and Decrease, Percentages, and Reading/Producing Graphical Information
7. Miscellanea
 - a. Topics chosen at the instructor's discretion vary by instructor and term. For example, one instructor favors a unit on social choice, and others are likely to choose that topic in a year of a presidential election. One instructor includes non-text resources on the use and language of percentage, and also on the interpretation of graphically presented data. Another instructor has enjoyed considerable success with the geometry unit. While some sections lean toward a liberal arts mathematics flavor, others are more inclined towards quantitative literacy.
8. Course Goals: By the end of the course, students should be able to do the following:
 - a. Write and present answers to problems using common mathematical conventions.
Assessment: course homework, tests, final exam, and in class discussions and presentations
 - b. Interpret/understand graphical data.
Assessment: Questions contained on Statistics Part test.
 - c. Use mathematical algorithms correctly.
Assessment: course homework, tests, and final exam.
 - d. Demonstrate sufficient knowledge of the course content.
Assessment: course homework, tests, and final exam