

SYNONYMOUS COURSES:

(a) replaces N/A
 (course #)

(b) cannot take N/A for further credit
 (course #)

SUPPLIES/MATERIALS:

Access to a computing laboratory with Maple license.

TEXTBOOKS, REFERENCES, MATERIALS (List reading resources elsewhere)

Functioning in the Real World: A Precalculus Experience, Gordon, Gordon *et al*, Addison-Wesley
Mathematics and its Applications, Cozzen and Porter, DC Heath
Elements of Computer Mathematics, Talbot, Buker and Gilligan, Brooks/Cole

OBJECTIVES:

The successful student should be able to represent real-world problems in mathematical terms and structures, analyse these models, and then interpret the results in a meaningful way.

METHODS:

The course will use some lectures but be primarily based on the "discovery approach" using concrete examples. Computers will be used where appropriate.

STUDENT EVALUATION PROCEDURE:

The instructors have discretion, but a typical breakdown is:

Quizzes, assignments and projects	30%
Midterm exams (at least two)	35%
Three-hour final exam	35%

NAME & NUMBER OF COURSE

COURSE CONTENT

- A. Modelling using continuous functions (at least five weeks):
 - 1. linear
 - 2. quadratic and cubic
 - 3. exponential
 - 4. logarithmic
 - 5. inverse
 - 6. trigonometric

- A. Modelling using techniques from discrete mathematics (at least five weeks), topics chosen from, but not limited to:
 - 1. matrices
 - 2. bases and modular arithmetic
 - 3. arithmetic and geometric sequences and series
 - 4. basic set theory
 - 5. probability (using tables, trees, Venn diagrams and counting)
 - 6. propositional logic
 - 7. difference equations