The course considers elementary school mathematics from an enriched point of view. Theoretical and pedagogical questions will be raised throughout the course, and students will be required to teach a one-hour enrichment class, once a week for 10 weeks, to grade 7 or 8 students in a local elementary school.

**Textbook:** *Course Notes*
sold through the University Bookstore, and written by the instructor.

**Prerequisite:** Permission of the instructor.

**Instructor:** L. B. Jonker

**Evaluation:**
- Final Examination 15%
- Class Participation 15%
- Lab Reports 15%
- Homework Assignments 55%

**Outline:**

- **Enrichment material:** This material rotates on a two-year cycle: Geometry in even years and numbers in odd years.

- **The Numbers program:**
  - Number patterns and proofs
  - Prime factors
  - Rational and Irrational numbers
  - Modular arithmetic and divisibility tricks

- **The Geometry program:**
  - 3-dimensional geometry and the theorem of Pythagoras
  - regular solids and the Euler number
  - areas and perimeters

- **A critical examination of elementary mathematics:** This material is included every year, with concrete examples simulating classroom situations.
  - teaching for understanding
  - constructive learning in mathematics
  - connections to mathematics curriculum design
  - kinds of mathematical reasoning
  - the role of problems
  - abstraction in mathematics
  - mathematics as language