Guide to Introductory Mathematics Courses
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Below are descriptions of the introductory mathematics courses at Wheelock, along with information about when each course is offered, the intended audience, and what courses are allowed to substitute. The courses are organized into four categories: Liberal Arts Mathematics Series, Quantitative Reasoning and Statistics, Concepts and Processes Series, and Other Options for Well-Prepared Students.

If you have any questions, please feel free to contact Debra Borkovitz at dborkovitz@wheelock.edu.

I. Liberal Arts Mathematics Series:

These courses explore mathematical aspects of different kinds of human activity. These are our newest courses, and listed below are the courses we have so far. Other we’re considering for the future include Mathematics of Games and Puzzles and Mathematics and Music.

Math 187: Mathematics from Many Cultures

Description: Studies mathematical ideas in literate and oral cultures. Expands students’ understanding of numbers, arithmetic operations, patterns and geometry concepts. Emphasizes reasoning and problem solving and recognizing the contributions of different cultures to the development of mathematics. Possible topics include number systems, geometry, games, and calendars. FALL 2015 ONLY: counts as a prerequisite for Math 170.

Audience:
• Students interested in humanities, arts, and/or multiculturalism
• Students interested in a math class very different from high school math
• Math Minors
• Math Majors (requires a substitution form for upper class students)

Offered: Fall 2015, and approximately once every two years after that

Substitutions: None. Liberal Arts math classes from other colleges generally transfer in as Math 120.

Math 186: Math through Crochet, Quilts, and Temari

Description: Uses crochet, quilts, temari and other fiber arts to explore pattern, symmetry, curvature and other mathematical concepts from spherical, hyperbolic, and two- and three-dimensional Euclidean geometries, as well as topics from graph theory and algebra. Includes

**Offered:** Spring 2015, and approximately once every two years after that

**Audience:**
- Students without a professional major
- Students who like crafts (including those with math anxiety)
- Students interested in a math class very different from high school math
- Math Minors (part of proposed changes, requires a form for now)
- Math Majors (elective – part of proposed changes, requires a form for now)

**Substitutions:** None. Liberal Arts math classes from other colleges generally transfer in as Math 120.

**II. Quantitative Reasoning and Statistics Courses:**

These courses are intended for students with professional majors other than education and for students with Arts/Sciences only majors.

**Math 120: Quantitative Reasoning**

**Description:** Applies mathematics to understanding social and personal issues, with some sections focusing on a theme. Mathematical concepts include percentages, ratios and proportions, probability, descriptive statistics, and functions. Emphasizes mathematical process; uses mathematical software. Meets three periods per week, with an additional study group led by a math leader. General Education: Foundations of Knowledge and Inquiry Mathematics. Introductory.

**Offered:** Every semester.

**Audience:**
- Students majoring in Child Life, Social Work, or Juvenile Justice (for fall 2015 these students can also choose *Math from Many Cultures*)
- Students without a professional major
- Students who asked, “When will I ever use this?” in math classes
- Students interested in better understanding personal finance
- Students preparing to take statistics (Math 120 is a prerequisite for Mat 170)

**Substitutions:** Many classes from other colleges transfer in as Math 120, including college algebra, pre-calculus, liberal arts math, and quantitative reasoning. Classes that don’t transfer include intermediate algebra and business math. Students who take a more advanced class at another college (e.g. calculus) can use it as a prerequisite for Mat 170 instead of Mat 120. Within Wheelock, students who would prefer to a more advanced class to Mat 120 should contact Debra Borkovitz.
Math 170: Statistics for the Behavioral Sciences

Description: Develops understanding of elementary statistical techniques needed in behavioral sciences. Includes frequency distributions, graphs, measures of central tendency and variability, percentiles and standard scores. Emphasis on sampling theory, hypothesis testing and drawing conclusions about a population from sample data. Includes study group. General Education: Foundations of Knowledge and Inquiry Mathematics. Prerequisites: MAT 120. Introductory.

Offered: Every semester

Audience:
  - Students majoring in Child Life, Social Work, or Juvenile Justice
  - Students who need a statistics class for graduate school.
  - Students interested in learning statistics.

Substitutions: Most introductory statistics courses from other colleges can substitute; the only exceptions are those considered remedial.

III. Concepts and Processes Series

These courses are primarily intended for students with education majors.

Math 130-132: Concepts and Processes I-III

Description: Deepens understanding of Number and Operation; Algebraic Thinking; Geometry and Measurement; and Probability and Data Analysis. Emphasizes problem-solving, justifying reasoning, mathematical communication, representation, and mathematical connections. Intended for prospective teachers. Three semester sequence, meets three periods per week, with an additional study group led by a math leader. Introductory. General Education: Foundations of Knowledge and Inquiry Mathematics.

Offered: Every semester, more sections of Math 130 and 132 are offered in the fall and more sections of Math 131 are offered in the spring.

Audience:
  - Students planning to be teachers
  - Students who are unsure of their major but are about 80% sure or more that they want to major in education

Substitutions: Only Math for Teachers classes from other colleges can substitute. Students who took part of a math for teachers sequence at another college should contact Debra Borkovitz, as many other schools arrange their courses in a different order, so for example, students who took one class at another school might get credit for Math 131, but not for Math 130.

Math 140-141: Intensive Concepts and Processes I-II (Honors)
Description: Two semester intensive version of the Concepts and Processes Sequence (Math 130/131/132), intended for well-prepared students. Meets three periods per week, with an additional study group led by a math leader. Prerequisite: Passing Entry Exam. General Education: Foundations of Knowledge and Inquiry Mathematics. Introductory.

Offered: Math 140 is offered every fall; Math 141 is offered every spring

Audience:
- Students who have passed the entrance exam (required). Contact Paul Hastings to take the exam.
- Students planning to be teachers (80% sure or more), who want a more challenging math class

Substitutions: Only Math for Teachers classes from other colleges can substitute. Students who took part of a math for teachers sequence at another college should contact Debra Borkovitz, as many other schools arrange their courses in a different order, so for example, students who took one class at another school might get credit for Math 141, but not for Math 140

IV. Other Options for Well-Prepared Students:

Math 280: Calculus I and Math 255: Probability and Statistics are courses generally aimed at Math and Science majors and minors, but with permission (see Debra Borkovitz), well-prepared students without a professional major can take them for general education. Also, with permission, well-prepared students who are required to take Math 170 can substitute Math 255, which is a more challenging class that covers more material.

Math 255 is offered every fall, and Math 280 is offered in the spring of even numbered years (calculus can also be taken at most of the other Colleges of the Fenway).