

MATHEMATICS AND PHILOSOPHY

Directors of undergraduate studies: Richard Kenyon (Mathematics), Miki Havlickova (Mathematics), Math DUS (math.dus@yale.edu); DL 446; Daniel Greco (daniel.greco@yale.edu) (Philosophy)

The Mathematics and Philosophy major allows students to explore those areas where philosophy and mathematics meet, in particular, mathematical and philosophical logic and the philosophy of mathematics.

PREREQUISITE

The prerequisite for the major is MATH 120. Students who completed multivariable calculus during high school may consult with the directors of undergraduate studies (DUSs) about substituting a higher level mathematics course.

REQUIREMENTS OF THE MAJOR

The major requires twelve term courses including the prerequisite and the senior seminar. Of the remaining courses, at least four must be in mathematics at the 200 level or higher (other than MATH 470) and five must be in philosophy. The remaining course may be either a mathematics or philosophy course. All philosophy courses are eligible for credit toward the major, except First-Order Logic (PHIL 115). Required courses include Set Theory (MATH 270), Mathematical Logic (PHIL 267), Computability and Logic (PHIL 427), an additional advanced philosophy course with a substantive logical component, (other than PHIL 427) that fulfills the senior requirement (see below). Set Theory (MATH 270) and Mathematical Logic (PHIL 267) must be taken before the end of the junior year; it is strongly recommended that they be taken earlier.

A course must be listed with a MATH number to count toward the mathematics requirements – substitutions from other departments are not permitted.

SENIOR REQUIREMENT

Each year certain seminars offered by the Mathematics and Philosophy departments are designated as fulfilling the senior requirement of the combined major. If such a seminar is taken to fulfill the senior requirement, majors must consult with the instructor and agree upon additional work required. Typically, additional work includes a substantial class presentation and/or preparation of a series of drafts prior to submission of the final paper.

The mathematics seminars MATH 480 or MATH 481 fulfill the senior requirement. For philosophy seminars that fulfill the senior requirement, consult the director of undergraduate studies (DUS) in Philosophy.

Credit/D/Fail At most, one course taken Credit/D/Fail may be applied toward the major, with permission of the DUSs. The following courses must be taken for letter grades: MATH 270, PHIL 267, PHIL 427; the required mathematics courses level 200 or higher; the additional philosophy course with an advanced logic component; and the senior seminar.

ADVISING

A typical program satisfying the major might consist of MATH 120, MATH 225 or 226, MATH 270, MATH 255, two math electives level 200+; PHIL 126, 267, 427, two philosophy electives; a senior seminar in Mathematics or Philosophy.

SUMMARY OF MAJOR REQUIREMENTS

Prerequisite MATH 120

Number of courses 12 term courses (incl prereq and senior sem)

Specific courses required MATH 270, PHIL 267, 427

Distribution of courses 3 additional courses in MATH at 200 level or higher; 3 additional courses in PHIL, incl 1 PHIL course with adv logic component; 1 math or philosophy elective

Senior requirement Senior seminar in philosophy or MATH 480 or MATH 481

Prerequisite

- MATH 120

Requirements

12 courses (12 credits), including the prerequisite and the senior requirement

- MATH 270
- 3 additional math courses at level 200 or higher
- PHIL 267
- PHIL 427
- 3 additional philosophy courses, including 1 with an advanced logic component
- 1 mathematics or philosophy elective
- senior seminar philosophy course or MATH 480 or MATH 481