Logic (LOG)

LOG 201 Logic (3 credit hours)
Introduction to methods of deductive inference. Concepts of inconsistency and entailment. Truth Functional Statement Logic and Quantifier and Predicate Logic. Representation of logically significant forms of statements and arguments. Construction of proofs using methods of natural deduction.

GEP Mathematical Sciences
Typically offered in Fall and Spring

LOG 335/MA 335 Symbolic Logic (3 credit hours)
Intermediate level introduction to modern symbolic logic focusing on standard first-order logic; topics include proofs, interpretations, applications and basic metalogical results.

Prerequisite: LOG 201 or MA 225 or CSC 226
GEP Mathematical Sciences
Typically offered in Fall only

LOG 430 Varieties of Logic (3 credit hours)
Study of various non-classical logics such as modal logic, many-valued logic, paraconsistent logic, second-order logic, and intuitionistic logic. Emphasizes their applications in fields such as philosophy, linguistics, mathematics, computer science, and artificial intelligence. Students cannot receive credit for both LOG 430 and LOG 530.

P: LOG 201 or LOG 335 or MA 335 or MA 225 or CSC 226
Typically offered in Spring only
This course is offered alternate odd years

LOG 435 Advanced Logic & Metamathematics (3 credit hours)
Advanced topics in logic and metamathematics: proof procedures, first-order theories, soundness and completeness theorems, recursive functions, the formalization of arithmetic, the Goedel Incompleteness Theorems. Emphasis on mathematical study of logic and mathematics. Students cannot receive credit for both LOG 435 and LOG 535

Prerequisite: LOG 335. Credit is not allowed for both LOG 435 and LOG 535.

LOG 498/LOG 598 Special Topics in Logic (1-6 credit hours)
Detailed investigation of selected topics in logic. Topics determined in consultation with head of the department. Course may be used for individualized study. Students cannot receive credit for both LOG 498 and LOG 598 unless the topic is different.

Prerequisite: One of the following: (MA/LOG 335, LOG 435, LOG 437, MA 403, MA 407, MA 408, MA 410, MA/CSC 416, MA 421, MA 425, MA 426, CSC 333, CSC 411, or CSC 417)
Typically offered in Fall and Spring

LOG 530 Varieties of Logic (3 credit hours)
Study of various non-classical logics such as modal logic, many-valued logic, paraconsistent logic, second-order logic, and intuitionistic logic. Emphasizes their applications in fields such as philosophy, linguistics, mathematics, computer science, and artificial intelligence. Students cannot receive credit for both LOG 430 and LOG 530.

Prerequisite: Graduate standing
Typically offered in Spring only
This course is offered alternate odd years

LOG 535 Advanced Logic and Metamathematics (3 credit hours)
Advanced topics in logic and metamathematics: proof procedures, first-order theories, soundness and completeness theorems, recursive functions, the formalization of arithmetic, the Goedel Incompleteness Theorems. Emphasis on mathematical study of logic and mathematics. Students cannot receive credit for both LOG 435 and LOG 535

Prerequisite: LOG 335. Credit is not allowed for both LOG 435 and LOG 535.

LOG 598/LOG 498 Special Topics in Logic (1-6 credit hours)
Detailed investigation of selected topics in logic. Topics determined in consultation with head of the department. Course may be used for individualized study. Students cannot receive credit for both LOG 498 and LOG 598 unless the topic is different.

Prerequisite: One of the following: (MA/LOG 335, LOG 435, LOG 437, MA 403, MA 407, MA 408, MA 410, MA/CSC 416, MA 421, MA 425, MA 426, CSC 333, CSC 411, or CSC 417)
Typically offered in Fall and Spring