LSA MATHEMATICS
UNIVERSITY OF MICHIGAN

Pure

The **Pure Mathematics Program** is designed to provide broad training in basic modern mathematics including an introduction to the methods of rigorous mathematical proof and exposure to the major branches of mathematics: Algebra, Analysis, and Geometry/Topology.

The major program must include at least nine courses: four basic courses **(II.)**, four elective courses **(III.)**, and one cognate course **(IV.)** as described below.

*I. Prerequisites** (5-7 courses) {must be completed with C- or better}*

Instructions	**Course(s)**	**Student Elections** (enter your course selections here)
Select **one** of the following **pairs** of **introductory mathematics courses:**	Math 205 & 217 Math 215 & 217 Math 285 & 217 Math 295 & 296	***1.*** _____ ***2.*** _____

***Following Math, 215 all students intending to concentrate in Pure Mathematics should elect Math 217 (Linear Algebra) rather than Math 216 (Introduction to Differential Equations).** *Math 216 is not intended for Pure Mathematics concentrators, who generally take Math 316 (Differential Equations) after completing Math 217.*

*II. Basic Courses** (4 courses) {must be completed with C- or better}*

Instructions	**Course(s)**	**Student Elections** (enter your course selections here)
Select **one** of the following **Modern Algebra** courses:	Math 312 Math 412 Math 493	***1.*** _____
Select **one** of the following **Differential Equations** courses:	Math 286 Math 316	***2.*** _____
Select **one** of the following **Analysis** courses:	Math 351 Math 451	***3.*** _____
Select **one** of the following **Geometry/Topology** courses:	Math 431 Math 433 *Math 490* *Math 590*	***4.*** _____

**More advanced students, such as those who have completed Math 396, may substitute higher-level courses with the approval of a departmental advisor.*

*III. Elective Courses** (4 courses) {must be completed with C- or better}*

The four elective courses must be chosen in consultation with an advisor to provide a cohesive program that explores an area of mathematics in some depth. There is a good deal of freedom here, but a random selection of courses will not satisfy this requirement. The courses should be chosen from the following list or have a course number of 600 or above. Math 289 is a repeatable 1-credit course and can be used to satisfy the elective requirement only if taken for a total of 3 credits.

Instructions	Course(s)			Student Elections (enter your course selections here)
Select **four** of the following **Elective** courses:	Math 289 Math 310 Math 354 Math 389 Math 404 Math 416 Math 420 Math 423 Math 425 Math 431 Math 433 Math 440 Math 450 Math 452 Math 454 Math 462 Math 463	Math 464 Math 465 Math 471 Math 472 Math 475 Math 481 Math 490 Math 498 Math 525 Math 526 Math 537 Math 550 Math 551 Math 555 Math 556 Math 557 Math 558	Math 559 Math 561 Math 562 Math 563 Math 565 Math 567 Math 571 Math 572 Math 575 Math 582 Math 590 Math 591 Math 592 Math 593 Math 594 Math 596 Math 597	***1.*** _____ ***2.*** _____ ***3.*** _____ ***4.*** _____

***These courses **MUST** be chosen in consultation with an advisor to provide a cohesive program.*

*IV. Cognate Course** (1 course) {must be completed with a C- or better}*

One cognate course should be chosen from a field other than mathematics. Almost any field is acceptable, but the course must be at the 300+ level and should have significant mathematical content, at least at the level of Math 215.

Instructions	Course(s)	Student Elections (enter your course selections here)
Select **one** of the following **Cognate** courses:	A list of suggested courses is available online at https://lsa.umich.edu/math/undergraduates/advising/cognate-courses.html	***1.*** _____

***In all cases **, approval from an advisor is required**.*