Pure Mathematics (M.S.)

Curriculum for Pure Mathematics (M.S.)

The masters programs in mathematical sciences are flexible enough to accommodate students with diversified background training. In consultation with the Graduate Committee, each student develops a course of study in mathematics areas most relevant to his or her professional and career objectives. Each student must take 15 credit hours of required courses, and complete an additional 18 hours either in the **Thesis Option** or the **Non-Thesis Option.**

Required Courses
All of these five courses:

Course No.	Course Name	Credits
MTSC-500	Foundations of Mathematics	3 Hours
MTSC-511	Introduction to Abstract Algebra	3 Hours
MTSC-561	Real Analysis I	3 Hours
MTSC-562	Real Analysis II	3 Hours
MTSC-571	Complex Analysis	3 Hours

Select one of the following two courses:

Course No.	Course Name	Credits
MTSC-541	Advanced Probability Theory	3 Hours
MTSC-521	General Topology	3 Hours

Total: 18 Hours

THESIS OPTION: *Pure Mathematics*

1. Electives of 6 credit hours from the Pure Mathematics Courses:

Course No.	Course Name	Credits
MTSC-525	Logic	3 Hours
MTSC-531	Number Theory	3 Hours
MTSC-621	Introduction to Functional Analysis	3 Hours
MTSC-504	Modern Geometry	3 Hours

MTSC-611	Topics in Pure Mathematics	3 Hours

2. MTSC-699 Thesis (**6 Hours)**
3. Electives from Pure Mathematics and/or applied Mathematics and/or Other Graduate level courses with the approval of the student's advisor. (**3 Hours)**

Total: 15 Hours

The students who select thesis option must defend their thesis before the Department Graduate Committee. A student must complete a six-hour research thesis.

NON-THESIS OPTION

The student who selects either one of the following non-thesis options must pass a written examination within two attempts.

This written examination is administered in February. A student must pass the written exam by the beginning of his/her 6th semester of study. A second and final attempt is permitted in the following August. In this examination a student must choose 2 topics from *Algebra, Analysis,* and *Applied Mathematics*. The exam is based on both 25-561 for Analysis, 25-511 for Algebra, and (or) 25-651 and 25-643 for Applied Mathematics. Another topic, such as Ordinary Differential Equations, Partial Differential Equations, or Statistics, may be substituted for one of the above by petition to the graduate committee based on two graduate level courses and supported by a faculty member.

Pure Mathematics

1. Electives from the Pure Mathematics Courses (**9 Hours)**

2. Electives from Pure Mathematics and/or Applied Mathematics and/or Graduate level courses with the approval of the student's advisor. **(6 Hours)**

Total: 15 Hours

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