# Course Structure for M.A. Program
# GPE, Department of Mathematics
# National Taiwan Normal University

| Adaptive to Class of | Required Credit(s) | Elective Credit(s) | Free Elective Credit(s) | Minimum Total Credits for Graduation |
|---|---|---|---|---|
| 110 | 3.0 | 24.0 | 0.0 | 27.0 |

Note: The first alphabet "E" on the course name refers to the course in English as a medium of instruction

## I. Required Courses: 3.0 credits are required

| Course Code | Course Name | Credit(s) | Credit Unit | | Note |
|---|---|---|---|---|---|
| | | | Lecture Hour | Lab/Practice Hour | |
| MAC8028 | 1 E Trend of Mathematics Research | 1.0 | 1.0 | 0.0 | This course must be retaken with a passing score for 3 times |

## II. Elective Courses: 0.0 credit is required

Master courses are form six divisions: Analysis, Algebra, Geometry, Applied mathematics, Statistics, and Math. education.

## III. Courses Offered to Students in Different Divisions

Required Course, 0.0 credit is required

Elective Course: 24.0 credits are required

| Course Code | Course Name | Credit(s) | Credit Unit | | Note |
|---|---|---|---|---|---|
| | | | Lecture Hour | Lab/Practice Hour | |
| | **1 Elective courses of the Mathematical analysis** | | | | |
| MAC0084 | 1-1 E Topics in Convex Analysis | 3.0 | 3.0 | 0.0 | |
| MAC0193 | 1-2 E Topics in Nonlinear Analysis(I) | 3.0 | 3.0 | 0.0 | |
| MAC0194 | 1-3 E Topics in Nonlinear Analysis(II) | 3.0 | 3.0 | 0.0 | |
| MAC0197 | 1-4 E Geometric Measure Theory(I) | 3.0 | 3.0 | 0.0 | |
| MAC0198 | 1-5 E Geometric Measure Theory(II) | 3.0 | 3.0 | 0.0 | |
| MAC8026 | 1-6 E Topics in Geometric Measure Theory (I) | 3.0 | 3.0 | 0.0 | |
| MAC8027 | 1-7 E Topics in Geometric Measure Theory (II) | 3.0 | 3.0 | 0.0 | |
| | **2 Elective courses of the Geometry** | | | | |
| MAC0146 | 2-1 E Topics on Geometric Analysis (I) | 3.0 | 3.0 | 0.0 | |
| MAC0147 | 2-2 E Topics on Geometric Analysis (II) | 3.0 | 3.0 | 0.0 | |
| MAC0177 | 2-3 E Differential Manifolds(I) | 3.0 | 3.0 | 0.0 | |
| MAC7001 | 2-4 E Riemannian Geometry (I) | 3.0 | 3.0 | 0.0 | |
| MAC7002 | 2-5 E Riemannian Geometry (II) | 3.0 | 3.0 | 0.0 | |
| MAC8003 | 2-6 E Modern Differential Geometry (I) | 3.0 | 3.0 | 0.0 | |
| MAC8004 | 2-7 E Modern Differential Geometry (II) | 3.0 | 3.0 | 0.0 | |
| MAC8010 | 2-8 E Topics in Differential Geometry (I) | 3.0 | 3.0 | 0.0 | |
| MAC8011 | 2-9 E Topics in Differential Geometry (II) | 3.0 | 3.0 | 0.0 | |
| MAC8019 | 2-10 E Geometry and Topology (I) | 3.0 | 3.0 | 0.0 | |
| MAC8020 | 2-11 E Geometry and Topology (II) | 3.0 | 3.0 | 0.0 | |
| | **3 Elective courses of the Applied mathematics** | | | | |
| MAC0081 | 3-1 E Topics in Optimization Theory (I) | 3.0 | 3.0 | 0.0 | |
| MAC0082 | 3-2 E Topics in Optimization Theory (II) | 3.0 | 3.0 | 0.0 | |
| MAC0086 | 3-3 E Topics in Complementarity Problems | 3.0 | 3.0 | 0.0 | |
| MAC0143 | 3-4 E Nonlinear Programming (I) | 3.0 | 3.0 | 0.0 | |
| MAC0144 | 3-5 E Nonlinear Programming (II) | 3.0 | 3.0 | 0.0 | |
| MAC0003 | 3-6 E Advanced Operation Research | 3.0 | 3.0 | 0.0 | |
| MAC9022 | 3-7 E Image Processing and Analysis (I) | 3.0 | 3.0 | 0.0 | |
| MAC9023 | 3-8 E Image Processing and Analysis (II) | 3.0 | 3.0 | 0.0 | |
| MAC9025 | 3-9 E Combinatorics Mathematics (IB) | 3.0 | 3.0 | 0.0 | |
| MAC9040 | 3-10 E Mathematical Models in Epidemiology | 3.0 | 3.0 | 0.0 | |
| | **4 Elective courses of the Statistics** | | | | |
| MAC9026 | 4-1 E Regression Analysis (IB) | 3.0 | 3.0 | 0.0 | |
| | **5 Elective courses of the Mathematics education** | | | | |
| MAC0025 | 5-1 E Research on Mathematical Thinking and Process (I) | 3.0 | 3.0 | 0.0 | |
| MAC0026 | 5-2 E Research on Mathematical Thinking and Processes (II) | 3.0 | 3.0 | 0.0 | |
| MAC0103 | 5-3 E Comparative Studies in Mathematics Education | 3.0 | 3.0 | 0.0 | |
| MAC0191 | 5-4 E Topics in Mathematics Education(I) | 3.0 | 3.0 | 0.0 | |
| MAC0192 | 5-5 E Topics in Mathematics Education(II) | 3.0 | 3.0 | 0.0 | |
| MAC9027 | 5-6 E Problem-Solving in Mathematical Teaching (I) (IB) | 3.0 | 3.0 | 0.0 | |
| MAC9028 | 5-7 E History of Mathematics (IB) | 3.0 | 3.0 | 0.0 | |
| MAC9036 | 5-8 E English Language of Mathematics Teaching | 2.0 | 2.0 | 0.0 | |

| Course Code | Course Name | Credit(s) | Credit Unit | | Note |
|---|---|---|---|---|---|
| | | | Lecture Hour | Lab/Practice Hour | |
| MAC9041 | 5-9 E Teaching Practicum: Mathematics (II) (IB) | 2.0 | 2.0 | 0.0 | |

## IV. Free Elective Credits: 0.0 credit is required

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