

MATHEMATICS MAJOR FOR ELEMENTARY AND MIDDLE SCHOOL TEACHING (K – 8)

Updated December 2015

The **Mathematics major** (State Code: EX) for Elementary certification consists of a minimum of 34 credits.

Teacher candidates for certification must pass the Michigan Test for Teacher Certification (MTTC) Elementary Exam (Test #103). Teacher candidates are strongly recommended to also take the Elementary Mathematics (Test #089) for marketability purposes. MTTC content exams should not be taken until 90% of course work in the subject area has been completed. Study guides are available at the MTTC website: (Elementary: http://www.mttc.nesinc.com/PDFs/MI_field103_SG.pdf and Elementary Math: http://www.mttc.nesinc.com/PDFs/MI_field089_SG.pdf).

The courses below meet State standards and have been selected so that teacher candidates will be well prepared for the test. Knowledge must be demonstrated in the following categories in order to successfully pass the MTTC subject area exam:

1. Mathematical Processes & Number Concepts 11-20 items
2. Patterns, Algebraic Relations & Functions 11-20 items
3. Measurement and Geometry 11-20 items
4. Data Analysis, Statistics, Probability,
and Discrete Mathematics 11-20 items

PLEASE REFER TO YOUR DEGREE EVALUATION IN KNOWHOPE PLUS IN ADDITION TO THIS DOCUMENT TO DETERMINE FULFILLMENT OF COURSE REQUIREMENTS

100 LEVEL COURSES (8 Credits) – Required

SUBJECT/ COURSE	TITLE	SEMESTER OFFERED	CREDITS	FULFILLS PORTION OF GENERAL EDUCATION
MATH 126 OR MATH 131	Calculus with Review II	Spring	4	MA2
	Calculus I	Both	4	MA2
Prerequisite for MATH 126: MATH 125 (Fall Semester Only) with C- or better. (Math 125 counts as 4 credits toward graduation, but not toward the major.)				
MATH 132	Calculus II	Both	4	MA2
Prerequisite for MATH 132: MATH 126 or MATH 131 with C- or better, or AP or CLEP credit for Math 131.				

200 LEVEL COURSES (13 Credits) – Required

SUBJECT/ COURSE	TITLE	SEMESTER OFFERED	CREDITS	FULFILLS PORTION OF GENERAL EDUCATION
MATH 205	Math for Elementary and Middle School Teachers I	Fall	4	MA2
Prerequisite for Math 205: EDUC 220/221				
MATH 206	Math for Elementary and Middle School Teachers II	Spring	2	MA2
MATH 231	Multivariable Mathematics I	Both	4	MA2
Prerequisite for MATH 231: MATH 132 with C- or better.				
MATH 280	Bridge to Higher Mathematics	Spring	3	
Prerequisite for MATH 280: Math 132				

300 LEVEL COURSES (9 Credits) – Required

SUBJECT/ COURSE	TITLE	SEMESTER OFFERED	CREDITS	FULFILLS PORTION OF GENERAL EDUCATION
MATH 311 & MATH 312	Statistical Methods Applied Statistical Models	Spring Spring	2 2	
Prerequisite for MATH 311: Math 132				
MATH 321	History of Mathematics	Fall	2	
Prerequisite for MATH 321: Math 132				
MATH 351	Geometry	Fall	3	
Prerequisite for MATH 351: MATH 231				

MATHEMATICS ELECTIVES (4 additional credits) – Required

SUBJECT/ COURSE	TITLE	SEMESTER OFFERED	CREDITS	FULFILLS PORTION OF GENERAL EDUCATION
Complete a minimum of 4 additional hours selected from other offerings in the Mathematics Department, or GEMS courses centered on mathematical topics.				
GEMS 100	Understanding Our Quantitative World	Both	2	MA1
GEMS 105	Nature of Mathematics	Both	2	MA1
MATH 207	K-8 Mathematics Software Applications	Spring, Odd Yrs	2	MA2
MATH 208	Problem Solving for Elementary and Middle School Teachers	Spring, Even Yrs	2	MA2

IN ADDITION TO THE ABOVE COURSE REQUIREMENTS – YOU MUST TAKE THE FOLLOWING PLANNED PROGRAM MINOR:

MINOR FOR MATHEMATICS MAJORS (26 credits) – Required

SUBJECT/ COURSE	TITLE	SEMESTER OFFERED	CREDITS	FULFILLS PORTION OF GENERAL EDUCATION
BIO/GES 104	Organisms and Environments	Both	4	Taking BOTH will earn NSL
CHEM/ PHYS 104	Matter and Energy	Both	4	
ED 260	Social Studies for the Elementary and Middle School Teacher	Both	4	S2B
HIST 175	Michigan History	Both	2	
IDS 160	Arts for the Elementary and Middle School Teacher	Fall	4	FA1
IDS 200 OR AES 210	Encounter with Cultures Introduction to Ethnic Studies	Both Both	4 4	GLD GLD
KIN 140	Health Dynamics	Both, May and June	2	HD
KIN 252	Health & Physical Education for the Elementary and Middle School Teacher	Both	2	

SAMPLE
Mathematics Major
 4 year plan

Note:

1. In order to student teach a minimum G.P.A. of 2.75 is required in your major, minor, education classes, and overall.
2. Students earning an Elementary Major must complete field placements in elementary and middle school.
3. Students earning an Elementary Major must complete field placements in racially/ethnically and socio-economically diverse classrooms.

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	FALL			SPRING			SUMMER		
	CLASS	CR	ATTRIBUTES	CLASS	CR	ATTRIBUTES	CLASS	CR	ATTRIBUTES
FRESHMAN	FYS	2	GE	ENG 113	4	GE			
	For Lan 2	4	GE	Math 132	4	M			
	KIN 140	2	GE & PP	EDUC 220/221	4	ED			
	Math 131	4	M	IDS 200 or					
	IDS 171	4	GE	AES 210	4	PP & GE & GLD			
Total	16		Total	16					
SOPHMORE	Math 205	4	GE & M	Math 206	2	GE & M			
	CHEM/ PHYS 104	4	PP	BIOL/ GEOL 104	4	PP & GE			
	Math 231	4	M	ED 270	2	ED			
	IDS 172	4	GE	Math 280	3	M			
				Math 207	2	M			
Total	16		ED 225/226	4	ED				
JUNIOR	ED 280/281	4	ED	ED 282/283	4	ED			
	Religion 2	4	GE	Religion 1	2	GE			
	Hist 175	2	PP	Math 311/312	4	M			
	Math 321	2	M	Math 208	2	M			
	Fine Arts 2	2	GE	IDS 160	4	GE & PP			
Total	16		Total	16					
SENIOR	ED 310/311	6	ED	ED 500	1	ED			
	ED 312	2	ED	ED 470	10	ED			
	Math 351	3	M	ED 455	1	ED			
	ED 260	4	GE	IDS 452	4	GE			
Total	15		Total	16					

Note: G.L.I. (global learning international) possibilities – check degree evaluation, FYS, Eng 113, IDS 171, Rel2 and select History and Literature courses

Key

- GE – general education
- M – major
- ED – education
- PP – planned program

1. Please see an education faculty member for personal advising. This sample is simply *one* way to plan your schedule.
2. Please consult the Hope College Catalogue for semesters when courses are offered, as these may vary.