

INTEGRATED SCIENCE GROUP MAJOR FOR ELEMENTARY AND MIDDLE SCHOOL TEACHING (K - 8)

Updated December 2015

The **Integrated Science major** (State Code: DI) for Elementary Certification consists of **38 credits** distributed over three areas of emphasis: Life Science, Earth and Space Science, and Physical Science. The courses must include significant laboratory experiences.

Teacher Candidates for certification in this major must pass the Michigan Test for Teacher Certification (MTTC) Elementary Exam (Test #103). Teacher candidates are strongly recommended to also take the Elementary Integrated Science exam (Test #093) 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 Integrated Science: http://www.mttc.nesinc.com/PDFs/MI_field093_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. Foundations of Scientific Inquiry | 11-20 items |
| 2. Life Science | 11-20 items |
| 3. Earth and Space Science | 11-20 items |
| 4. Physical Science | 11-20 items |

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

LIFE SCIENCE COURSES (12 Credits) – Required

SUBJECT/ COURSE	TITLE	CREDITS	FULFILLS PORTION OF GENERAL EDUCATION
BIOL 104	Organisms and Environments	4	NSL
BIOL 105	Introduction to Biology I	3	NSL
BIOL 106	General Biology II	3	NSL
BIOL 107 and BIOL 108	Introduction to Biology I Lab and General Biology Lab II	1 1	NSL
Or	Or		
BIOL 207*	Honors Lab in Cells and Genetics I	2	
Or	Or		
BIOL 208*	Honors Lab in Cells and Genetics II	2	

*By invited application only

EARTH AND SPACE SCIENCE COURSES (10 Credits) – Required

SUBJECT/ COURSE	TITLE	CREDITS	FULFILLS PORTION OF GENERAL EDUCATION
GEMS 157 (GES 100)	The Planet Earth	4	GEMS
GEMS 152	The Atmosphere & Environmental Change	4	GEMS
GEMS 206	The Night Sky	2	GEMS

PHYSICAL SCIENCE COURSES (16 Credits) – Required

SUBJECT/ COURSE	TITLE	CREDITS	FULFILLS PORTION OF GENERAL EDUCATION
GEMS 151	Science and Technology for Everyday Life	4	GEMS
PHYS 105 & PHYS 107	College Physics I & College Physics Lab	3 1	NSL
CHEM 104	Matter and Energy	4	NSL
CHEM 125 & CHEM 127	General Chemistry I & Lab of General & Analytic Chemistry I	3 1	NSL

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

MINOR FOR INTEGRATED SCIENCE MAJORS (24 credits) – Required

SUBJECT/ COURSE	TITLE	CREDITS	FULFILLS PORTION OF GENERAL EDUCATION
ED 260	Social Studies for the Elementary and Middle School Teacher	4	S2B
HIST 175	Michigan History	2	
IDS 160	Arts for the Elementary and Middle School Teacher	4	FA1
IDS 200 OR AES 210	Encounter with Cultures Introduction to Ethnic Studies	4 4	GLD GLD
KIN 140	Health Dynamics	2	HD
KIN 252	Health & Physical Education for the Elementary and Middle School Teacher	2	
MATH 205	Math for Elementary and Middle School Teachers I	4	MA2
Prerequisite for MATH 205: EDUC 220/221			
MATH 206	Math for Elementary and Middle School Teacher II	2	MA2

**“SAMPLE” 4-YEAR PLAN
ON THE FOLLOWING PAGE BELOW**



***SAMPLE* Integrated
Science 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	REL I	2	GE			
	ENGL 113	4	GE	HIST 175	2	PP			
	IDS 200 or AES 210	4	GE & PP & GLD	IDS 160	4	GE & PP			
	KIN 140	2	GE & PP	GEMS 157	4	M			
	For Lang 2	4	GE	EDUC 220/221	4	ED			
Total	16		Total	16					
SOPHMORE	Math 205	4	GE & PP	Math 206	2	GE & PP	IDS 172	4	GE
	PHYS 105/107	4	M	GEMS 151	4	GE			
	BIOL 104	4	M	GEMS 206	2	M			
	EDUC 260	4	GE & PP	EDUC 270	2	ED			
				EDUC 225/226	4	ED			
Total	16		Total	14					
JUNIOR	EDUC 280/281	4	ED	EDUC 282/283	4	ED			
	CHEM 104	4	M	BIOL 106	3	M			
	GEMS 152	4	M	BIOL 108	1	M			
	BIOL 105	3	M	KIN 252	2	PP			
	BIOL 107	1	M	Fine Arts 2	2	GE			
Total	16		Total	16					
SENIOR	EDUC 310/311	6	ED	EDUC 500	1	ED			
	EDUC 312	2	ED	EDUC 470	10	ED			
	CHEM 125/127	4	M	EDUC 455	1	ED			
	IDS 171	4	GE	IDS 452	4	GE			
	Total	16		Total	16				

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

Key:

- GE – general education
- M – major
- ED – education
- PP – planned program
- GLD – global learning domestic

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.