

# INTEGRATED SCIENCE GROUP MAJOR IN COMBINATION WITH PHYSICS MINOR FOR SECONDARY TEACHING

*October 2019*

The **Integrated Science major** (State Code: DI) for Secondary Certification consists of **40 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 Integrated Science at the Secondary level must pass the Michigan Test for Teacher Certification (MTTC) in Secondary Integrated Science (Test #094). MTTC content exams should not be taken until 90% of course work in the subject area has been completed. A study guide is available at the MTTC website: ([http://www.mttc.nesinc.com/PDFs/MI\\_field094\\_SG.pdf](http://www.mttc.nesinc.com/PDFs/MI_field094_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:

## **Subarea**

**PHYSICAL SCIENCE COURSES (16 Credits) - Required**

**SUBJECT/  
COURSE**

**TITLE**

**CR.  
HRS.**

**SEMESTER**



# PHYSICS MINOR IN COMBINATION WITH INTEGRATED SCIENCE GROUP MAJOR FOR SECONDARY TEACHING

*Updated February 2020*

The **Physics minor** (State Code: DE) for Secondary teachers consists of a minimum of 20 credits in Physics. Cognate courses are also required beyond the 20 hours.

Teacher candidates for certification in Physics at the Secondary level must pass the Michigan Test for Teacher Certification (MTTC) in Physics (Test #019). MTTC content exams should not be taken until 90% of course work in the subject area has been completed. A study guide is available at the MTTC website: ([http://www.mttc.nesinc.com/PDFs/MI\\_field019\\_SG.pdf](http://www.mttc.nesinc.com/PDFs/MI_field019_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:

	<b>Subarea</b>	<b>Approximate % of Questions</b>
1.	Foundations of Scientific Inquiry	12%
2.	Mechanics	24%
3.	Electricity and Magnetism	24%
4.	Waves, Acoustics, and	

REQUIRED COGNATE COURSES

MATH (16 credits)

SUBJECT/ COURSE	TITLE	CREDIT HOURS	SEMESTER	GRADE
MATH 131	Calculus	4		
MATH 132	Calculus II	4		
MATH 231	Multivariable Math I	4		
MATH 232	Multivariable Math II	4		

ON THE FOLLOWING PAGES BELOW



**\*SAMPLE\***  
**Integrated Science Major (DI) with a Physics Minor**  
**FOR SECONDARY CERTIFICATION**  
 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 a Secondary Major must complete field placements in middle and high school.
3. Students earning a Secondary Major must complete field placements in racially/ethnically and socio-economically diverse classrooms.

November 2021

	Fall			Spring			Summer		
	CLASS	CR	ATTRIBUTES	CLASS	CR	ATTRIBUTES	CLASS	CR	ATTRIBUTES
<b>FRESHMAN</b>	IDS 100	2	GE-FYS	EDUC 200/201	4	ED & GLD	For Lang 2	4	GE-FL2
	PHYS 121/141	4	DI & GE-NSL	PHYS 122/142	4				
	KIN 140	2	GE-HD	MATH 132	4				
	MATH 131	4	GE-MA2 & m	EDUC270	4				
	ENGL 113	4	GE-EW						
	Total	16		Total	16				
<b>SOPHMORE</b>	EDUC 225/226	4	ED						
	CHEM 125/127	4	DI						
	BIOL 105/107	4	DI						
	MATH 231	4	m						
	Total	16							

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