COLLEGE OF LIBERAL ARTS AND SCIENCES (CLAS) ACADEMIC ADVISING CENTER 2013-2014

PHYSICS-BS-SECONDARY EDUCATION

WITH EDUCATION MAJOR & TEACHABLE MINOR REQUIRED

THIS IS A **GENERAL** CURRICULUM GUIDE AND IS NOT APPLICABLE TO EVERY STUDENT. IT IS IMPORTANT TO MEET WITH YOUR ADVISOR.

A 2.7 cumulative GPA in the Physics major is required for admission to the College of Education

Year One			
[1]MTH 201 Calculus I Prerequisites: MTH 122 and MTH 123 or proficiency through math placement	4	MTH 202 Calculus II Prerequisite: MTH 201	4
CHM 115 Principles of Chemistry I Prerequisites: High school chemistry, MTH 110 or 122 or 125 or 201	5	PHY 230 Principles of Physics I Prerequisite: MTH 201, MTH 202 recommended as a corequisite	5
Gen Ed	3	PSY 101 Introductory Psychology	3
EDF 100 Introduction to Education **(optional – see below)**	2	WRT 150 Strategies in Writing	4
Total	*14*	*Total*	*16*
Spring/Summer			
Minor Course	3	Gen Ed	3
Year Two			
MTH 203 Calculus III Prerequisite: MTH 202	4	PHY 302 Introduction to Modern Physics Prerequisite: PHY 231	3
MTH 227 Linear Algebra I Prerequisite: MTH 202	3	MTH 302 Linear Algebra & Differential Equations Prerequisite: MTH 203	3
PHY 231 Principles of Physics II Prerequisites: MTH 202 and PHY 230	5	***OR*** MTH 304 Analysis of Differential Equations Prerequisites: MTH 203 and MTH 227	4
EDF 315 Diverse Perspectives for Education	3	[5]CIS/EGR 261 Structured Programming in C Prerequisite: MTH 201 or concurrent enrollment	3
		BIO 120 General Biology I *Gen Ed* Prerequisites: High school chemistry, CHM 109 or 115 strongly recommended	4
Total	*15*	*Total*	*13-14*
Spring/Summer			
HSC 201 The Scientific Revolution	3	Minor Course	3
OR HSC 202 The Technological Revolution	3	Gen Ed	3
Minor Course	3		
Year Three			
MTH 401 Mathematics for the Physical Sciences Prerequisites: MTH 302 or 304, PHY 231, or permission of instructor	4	[2]PHY 311 SWS Advanced Laboratory II Prerequisites: PHY 309 and one SWS course	2
PHY 309 Experimental Methods in Physics Prerequisites: PHY 302 and one SWS course	4	PHY 340 Electromagnetic Fields Prerequisites: PHY 231, MTH 302 or MTH 304	4
PHY 330 Intermediate Mechanics Prerequisites: PHY 230 or permission of instructor, and MTH 302 or 304	4	[3]PHY 105 Descriptive Astronomy	3
MTH 300 Applied Analysis I Prerequisite: MTH 203	3	PSY 301 Child Psychology Prerequisite: PSY 101	3
		EDI 337 Introduction to Learning and Assessment	3
Total	*15*	*Total*	*15*
Spring/Summer			
Minor Course	3	Issue/Theme	3
Minor Course	3	Gen Ed	3
Year Four			
PHY 360 Statistical Thermodynamics Prerequisite: PHY 231	4	PHY 350 Introduction to Quantum Mechanics Prerequisites: PHY 302, MTH 302 or 304 (MTH 300 recommended)	4
PHY 485 Senior Physics Project (Capstone) Prerequisite: Senior physics students in good academic standing	1	PHY 486 Senior Physics Project (Capstone) Prerequisites: PHY 485	2
[4]Ethics in Science Requirement	3	[3]Science Elective Course	3
Issue/Theme	3	Minor Course	3
Minor Course	3	Minor Course	3
Total	*14*	*Total*	*15*
Teacher Assisting	**Teacher Certification Professional Program**		**Student Teaching**
EDI 331 Methods and Strategies of Secondary Teaching	5	EDI 431 Student Teaching: Secondary	8
EDF 310 Organizing and Managing Classroom Environments	3	EDI 432 Student Teaching: Secondary Content	2
EDR 321 Content Area Literacy	3	EDF 485 The Context of Educational Issues	3
[6]EDS 379 Universal Design for Learning: Secondary	3	Must be taken with or after EDI 431	
EDT 370 Technology in Education Must be taken with or after EDI 331 but before EDI 431	3		
Total	*17**	*Total*	*13*

See reverse for notes

It is imperative to meet with your faculty advisor and an advisor in the CLAS Academic Advising Center regularly.
The CLAS Academic Advising Center is located in C-1-140 MAK, 616-331-8585.
Online at: http://www.gvsu.edu/clasadvising

* The block tuition rate is for 12-15 credits. You will pay additional tuition for any credits over 15.

EDF 100 is an exploratory elective for students uncertain about pursuing teacher certification. It can be taken in either the fall or winter semester.

[1] **Students must take MTH 110, MTH 122, and MTH 123 or waive these courses through Grand Valley math placement. These courses do not count towards the completion of the Physics major.**

[2] Students must complete a total of two courses with an SWS attribute

[3] Students must complete 6 hours of science electives with a minimum grade of C (2.0) in each. Must be chosen from the following: PHY 105 (requirement for secondary education majors); any 300 or 400 level physics elective (excluding PHY 303, 306, and 307); CHM 351, 352, 356, or 358

[4] Students must take BIO 328: Biomedical Ethics **OR** BIO 338: Environmental Ethics.

[5] See faculty advisor for additional option for CIS/EGR 261 requirement.

[6] Starting Fall 2013, EDS 379 may be taken prior to the Teacher Assisting Semester. Please consult with your College of Education Advisor to determine an appropriate time to take this course.

-Thirty (30) total hours as a lab assistant (setting up and tearing down equipment and/or serving as teaching assistant) are required of students seeking secondary certification. Contact the department for further details.

Declaring the Physics and Education Major with Teachable Minor:

1. Log into myBanner from the GVSU homepage
2. Once logged in select "Student", "Student Records", and then, "Change Major"
3. Click on the "Change Major 1/Program" box
4. Click on the down arrow in the box next to "New Major 1/Program," from here scroll down and choose "Physics Teaching – BS Secondary Education"
5. Click "Submit" and then "Change to New Program"
6. Return to the Change Major Screen and select "Add or Change Second Major"
7. Click on the down arrow in the box next to "New Major 2," from here, scroll down and choose "Education" from the list and then click "Submit" and "Add Second Major"
8. Return to Change Major Screen and select "Add a Minor" or "Add or Delete Minor", scroll to and select chosen minor and then click "Submit" and "Add Minor" (see below for minor options)

Teachable Majors and Teachable Minors for Secondary Education

Teachable Majors		Teachable Minors	
Biology	Mathematics	Biology-Teaching	History-Teaching
Chemistry	Music (K-12)	Chemistry-Teaching	Mathematics-Secondary Education
Earth/Space Science	Physical Education (K-12)	Computer Science-Teaching	Physical Education-Teaching
English	Physics	Earth/Space Science-Teaching	Physics-Teaching
French	Social Studies	Economics-Teaching	Political Science-Teaching
German	Spanish	English-Teaching	Psychology-Teaching
History	Visual Arts (K-12)	French-Teaching	School Health Education
Latin		Geography-Teaching	Spanish-Teaching
		German-Teaching	

General Education Overlap

General Education Categories fulfilled by the Physics Major for Secondary Education:	
Mathematical Sciences: MTH 201	Physical Science with Lab: CHM 115
Social and Behavioral Sciences: PSY 101	Life Science with Lab: BIO 120
U.S. Diversity: EDF 315	Historical Perspectives: HSC 201 or 202

Second Major in Education

Education Major Prerequisites (9 credits)

A 2.7 cumulative GPA in the Education Major Prerequisites is required with no grade lower than a C

— **EDF 315 Diverse Perspectives on Education** (3)

— **EDI 33I Introduction to Learning and Assessment** (3)

— **PSY 301 Child Development** (3)

Prerequisite: PSY 101

Teacher Assisting (17 credits)	Student Teaching (13 credits)
— **EDI 331 Teacher Assisting-Secondary** (5)	— **EDI 431 Student Teaching, Secondary** (8)
— **EDF 310 Organizing and Managing Classroom Environments** (3)	— **EDI 432 Student Teaching, Secondary Content** (2)
— **EDR 321Content Area Literacy** (3)	— **EDF 485 The Context of Educational Issues** (3)
— **EDT 370 Technology in Education** (3)	Must be taken with or after EDI 431
Must be taken with or after EDI 331 but before EDI 431	
— **EDS 379 Universal Design for Learning: Secondary** (3)**	
** Starting Fall 2013, EDS 379 may be taken prior to the Teacher Assisting Semester. Please consult with your College of Education Advisor to determine an appropriate time to take this course.	