Secondary Science Education/Physics Double Major

Name:

General Education Requirements			
Fundamental Studies			
Requirements: __credits	Course	Credits	Grade
Academic Writing (AW)	ENGL 101	3	
Professional Writing (PW)		3	
Oral Comm. (OC)		3	
Math (MA)	MATH 140	4	
Analytic Reasoning (AR)	MATH 140	-	
Distributive Studies			
Requirements: __credits	Course	Credits	Grade
Natural Science Lab (NL)	PHYS 272/275	5	
Natural Sciences (NS)	PHYS 171	3	
History/Social Sciences (HS)	TLPL 414	3	
History/Social Sciences (HS)		3	
Humanities (HU)		3	
Humanities (HU)		3	
Scholarship in Practice (SP)	TLPL 101 & TLPL 102	3	
Scholarship in Practice (SP, non major)		3	
Big Questions			
Requirements: __credits	Course	Credits	Grade
Big Questions		3	
Big Questions		3	
Diversity			
Requirements: __credits	Course	Credits	Grade
Understanding Plural Soc. (UP)		3	
Understanding Plural Soc. (UP) or Cultural Competency (CC)	TLPL 401	3	
Experiential Learning- opitional			
Requirements: __credits	Course	Credits	Grade
			n/a
			n/a

Students must earn a minimum of 120 credits to complete a degree.

Requirements for Graduation:
☐ At least 30 credits must be earned at UMD
☐ 15 of the final 30 credits must be earned at the 300-400 level
☐ 12 upper level major credits must be earned at UMD

UID:

UNIV 100	1	
Content Major Degree Requirements Physics Education Track		
Requirements *Grade of C- or higher is required*	Credits	Grade
Lower level requirements		
MATH 140 Calculus I	4	
MATH 141 Calculus II	4	
MATH 241 Calculus III	4	
PHYS 171 Introductory Physics: Mechanics and Relativity (NS)	3	
PHYS 272 Introductory Physics: Fields (NL when taken with PHYS 275)	3	
PHYS 273 Introductory Physics: Waves	3	
PHYS 274 Mathematical Methods for Physics I	3	
PHYS 275 Exper.Physics I: Mechanics, Heat & Fields (NL when taken with PHYS 272)	2	
PHYS 276 Exper. Physics II: Electricity and Magnetism	2	
Suggested Elective: PHYS165 Intro to Programming for the Physical Sciences	3	
Upper level requirements		
PHYS 371 Modern Physics	3	
PHYS 373 Mathematical Methods for Physics II	3	
PHYS 375 Experimental Physics III: Electromag Waves, Optics and Modern (SP)	4	
PHYS 410 Classical Mechanics or 411 Intermediate Electricity & Magnetism	4	
PHYS 4xx Advanced Physics Elective	3	
Education Supporting Courses. *Double count with Secondary Education Degree*		
TLPL 101, TLPL 102, TLPL 401, TLPL 414, TLPL 415 and EDHD 426 (See details below.*)		
College of Education Degree Requirements		
Year 1 - Benchmark Requirement		
AW with C- or higher		
MA with C- or higher		
Gateway Requirements		
TLPL 401 with B- or higher	3	
Pre-Professional Education Requirements		
*TLPL 101 Inquiry Approach to Teaching STEM (Step 1)	1	
*TLPL 102 Inquiry Teaching of STEM in Middle School	2	
*EDHD 426 Cognitive and Motivational Literacy Content	3	
TLPL 401 Student-Centered Curriculum and Instruction	3	
*TLPL 414 Knowing and Learning in Mathematics and Science	3	
*TLPL 415 Perspectives in Science	3	
Professional Education Requirements		
TLPL 425 Teaching and Learning Highschool Science (Fall Only)	3	
TLPL 479F Field Experiences in Education; Secondary Mathematics Education (Fall Only)	1	
TLPL 421 Practices in Secondary School Science Teaching(Spring Only)	2	
TLPL 489F Internship in Education: Science (Spring Only)	12	
TLPL 477 Special Topics in Education; Teaching Academically, Culturally & Linguistically Diverse Students in Secondary Education (Spring Only)	2	

Secondary Science Education/Physics (Education Track) Double Major Four Year Academic Plan

Year 1	Fall	Cr.	Spring	Cr.
Benchmark Requirements	ENGL 101 (AW)	3	MATH 141	4
AW with C- or higher	MATH 140 (MA/AR)	4	PHYS 171 (NS)	3
MA with C- or higher	TLPL 101	1	Oral Communication (OC)	3
	History/Social Sciences (HS)*	3	TLPL 102 (SP in combination with TLPL 101)	2
	Humanities (HU)*	3	Elective*	3
	UNIV 100	1		
	Total	*15*	*Total*	*15*
Year 2	**Fall**	**Cr.**	**Spring**	**Cr.**
Benchmark Requirements	MATH 241	4	PHYS 273 Intro Physics: Waves	3
PHYS 171	PHYS 272/275 (NL)	5	PHYS 274 Math Methods for Physics I	3
PHYS 174	TLPL 414 (HS)	3	EDHD 426	3
PHYS 272	Humanities (HU) / Scholarship in Practice (SP, non major)	3	Elective	3
Math 140			Elective	3
Math 141	*Total*	*15*	*Total*	*15*
Test of Basic Skills				
Year 3	**Fall**	**Cr.**	**Spring**	**Cr.**
Gateway Requirements	PHYS 371 Modern Physics	3	TLPL 415 Perspectives in Science	3
TLPL 401 with B- or higher	PHYS 276 Experimental Physics II	2	PHYS 373 Math Methods for Physics II	3
Apply to the COE by Dec. 1st	TLPL 401 (CC)	3	PHYS 375 Experimental Physics III (SP)	3
Minimum 2.75 cumulative GPA	Elective	3	Professional Writing (PW)	3
	Elective	3	Elective	3
	Total	*14*	*Total*	*15*
Year 4	**Fall**	**Cr.**	**Spring**	**Cr.**
	YEARLONG INTERNSHIP			
	TLPL 425	3	TLPL 421	2
	TLPL 479F	1	TLPL 489F	12
	Elective	4	TLPL 477	2
	PHYS 411 Intermediate E&M or PHYS410 Classical Mechanics	4		
	PHYS 4xx Physics Elective	3		
	Total	*15*	*Total*	*16*
				Total Credits: 120

This is a proposed plan and the College of Education does not guarantee that these courses will be offered in the designated semester. Consult the *Schedule of Classes* for class availability and meeting times.

*** All students must complete two Distribute Studies courses that are approved for Big Questions courses. Students must complete Understanding Plural Society and Cultural Competence courses that may also fulfill a Distributive Studies category.**

Students must also meet with their Academic Advisor in CMSC / Physics Department to discuss the Physics course requirements.

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Secondary Science Education/Physics Double Major, B.S.
Benchmarks

45-credit review
Completion of English and Math fundamental studies with a C- or better
Minimum cumulative GPA of 2.75

75-credit review
Passing scores on a Test of Basic Skills
Minimum cumulative GPA of 2.75
Submission of FC/MCEE Self-Assessment
Admission to the full degree/professional program (0834P)
TLPL 401 with grade of B- or better
Satisfactory completion of other Physics Gateway courses
Double Major with Physics on file

90-credit review:
Passing scores on a Test of Basic Skills
Minimum cumulative GPA of 2.75
Satisfactory Evaluation on FC/MCEE
TLPL 415 with a C- or better
Double Major with Physics on file

105-credit review:
Passing scores on a Test of Basic Skills
Minimum GPA of 2.75
Satisfactory Evaluation on FC/MCEE and PBA
Passing Scores on the Praxis II - see Advisor for Details.
Students must successfully complete the edTPA
TLPL 425 with a C- or better
TLPL 479F with a Satisfactory grade, “S”
Double Major with Physics on file