

Secondary Science Education/Physics Double Major

Name:			
General Education Requirements			
Fundamental Studies			
<i>Requirements: credits</i>	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			
<i>Requirements: credits</i>	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			
<i>Requirements: credits</i>	Course	Credits	Grade
Big Questions		3	
Big Questions		3	
Diversity			
<i>Requirements: credits</i>	Course	Credits	Grade
Understanding Plural Soc. (UP)		3	
Understanding Plural Soc. (UP) or Cultural Competency (CC)	TLPL 401	3	
Experiential Learning- optional			
<i>Requirements: credits</i>	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			
<i>Requirements</i>	<i>Grade of C- or higher is required</i>	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 AW with C- or higher MA with C- or higher	ENGL 101 (AW)	3	MATH 141	4
	MATH 140 (MA/AR)	4	PHYS 171 (NS)	3
	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		
	<i>Total</i>	15	<i>Total</i>	15
Year 2	Fall	Cr.	Spring	Cr.
Benchmark Requirements PHYS 171 PHYS 174 PHYS 272 Math 140 Math 141	MATH 241	4	PHYS 273 Intro Physics: Waves	3
	PHYS 272/275 (NL)	5	PHYS 274 Math Methods for Physics I	3
	TLPL 414 (HS)	3	EDHD 426	3
	Humanities (HU) / Scholarship in Practice (SP, non major)	3	Elective	3
			Elective	3
		<i>Total</i>	15	<i>Total</i>
Test of Basic Skills				
Year 3	Fall	Cr.	Spring	Cr.
Gateway Requirements TLPL 401 with B- or higher <i>Apply to the COE by Dec. 1st</i> Minimum 2.75 cumulative GPA	PHYS 371 Modern Physics	3	TLPL 415 Perspectives in Science	3
	PHYS 276 Experimental Physics II	2	PHYS 373 Math Methods for Physics II	3
	TLPL 401 (CC)	3	PHYS 375 Experimental Physics III (SP)	3
	Elective	3	Professional Writing (PW)	3
	Elective	3	Elective	3
		<i>Total</i>	14	<i>Total</i>
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		
	<i>Total</i>	15	<i>Total</i>	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 <i>Schedule of Classes</i> for class availability and meeting times.				
* All students must complete two Distributive 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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