Pre-Engineering Major [Revised 2/26/13]

Student Name

FALL			SPRING		
FRESHMAN		**UCC**			**UCC**
Course	**Hrs.**	**Hrs.**	Course	**Hrs.**	**Hrs.**
PHYC 115	1		CHEM 112 (UCC-21 3 hrs)	4	3
CHEM 111	4		MATH 166	4	
MATH 165 (UCC-21 3 hrs)	4	3	PHYC 122	5	
PHYC 120 (UCC-21 3 hrs)	5	3	UCC-21 (Found. Physical Wellness)	2	2
UCC-21 (Found. Personal Finance)	1	1			
Semester Total	*15*	*7*	Semester Total	*15*	*5*
SOPHOMORE					
Course	**Hrs.**		Course	**Hrs.**	
CS 120	4		TMFG 105	3	
PHYC 260	4		MATH 217	4	
MATH 267	4		PHYC 262	1	
UCC-21 (ENG 103 if needed)	3	3	PHYC 330	3	
			UCC-21 (ENG 104)	3	3
Semester Total	*15*	*3*	Semester Total	*14*	*3*
JUNIOR					
Course	**Hrs.**		Course	**Hrs.**	
Approved Department Elective	4		Approved Department Elective	4	
PHYC 485	1		UCC-21 (Found. Oral Comm.)	3	3
PHYC 482	3		PHYC 483	1	
UCC-21 Fine Arts Tier 1	3	*3*	UCC-21 Tier 2 (2 of 2)	3	3
UCC-21 Humanities Tier 1	3	*3*	UCC-21 (Foundation History)	*3*	*3*
WPP (Writing Proficiency Exam)			UCC-21 Social Science Tier 1	*3*	*3*
Semester Total	*14*	*6*	Semester Total	*17*	*12*
SENIOR					
Course	**Hrs.**		Course	**Hrs.**	
Semester Total	*0*	*0*	*Semester Total*	*0*	*0*
			Program Total	90	36

Pre-Engineering (Option 1 - General)

	Hrs	Cell
PHYC 115	1	A09
PHYC 120 (UCC-21 3 hrs)	5	A12
PHYC 122	5	D11
PHYC 260	4	A21
PHYC 262	1	D22
PHYC 330	3	D23
PHYC 483	1	D35
PHYC 485	1	A34
CHEM 111	4	A10
CHEM 112 (UCC-21 3 hrs)	4	D9
CS 120	4	A20
TMFG 105	3	D20
MATH 165 (UCC-21 3 hrs)	4	A11
MATH 166	4	D10
MATH 217	4	D21
MATH 267	4	A22
PHYC 482 W+	3	A35
Approved Department Elective	4	A33
Approved Department Elective	4	D33
Option 1 Required Courses 68 hrs.	**63**	

University Core Curriculum	Hrs.	Cell		Cell
UCC-21 (ENG 103 if needed)	3	A23	WISER Plus "W" Course	A35
UCC-21 (ENG 104)	3	D24	WISER Plus "Other Elective"	D9
UCC-21 (Found. Oral Comm.)	3	D34		
UCC-21 (Foundation Mathematics)	3	A11		
UCC-21 (Foundation History)	3	D37		
UCC-21 (Found. Physical Wellness)	2	D12		
UCC-21 (Found. Personal Finance)	1	A13		
UCC-21 Fine Arts Tier 1	3	A36		
UCC-21 Humanities Tier 1	3	A37		
UCC-21 Natural Science Tier 1	3	A12		
UCC-21 Social Science Tier 1	3	D38		
UCC-21 Tier 2 (1 of 2)	3	D9		
UCC-21 Tier 2 (2 of 2)	3	D36		
UCC-21 (Class of 2014 and later)	**36**			

Course Offerings by Term

Undergraduate Courses

Course			Fall 2013 Odd	Spr 2014 Even	SS1 2014 Even	SS2 2014 Even	Fall 2014 Even	Spr 2015 Odd	SS1 2015 Odd	SS2 2015 Odd
		Core Undergraduate Courses								
PHYC	115	Career Issues in Physics	X				X			
PHYC	120	General Physics I (calculus-based)	X	X	X		X	X	X	
PHYC	122	General Physics II (calculus-based)	X	X		X	X	X		X
PHYC	260	Intro. to Modern Physics	X				X			
PHYC	262	Modern Physics Laboratory		X				X		
PHYC	330	Mechanics		X				X		
PHYC	434	Thermodynamics	X							
PHYC	340	Physical Optics					X			
PHYC	450	Electricity and Magnetism	X				X			
PHYC	464	Intro. Quantum Mechanics	X				X			
PHYC	369	Professional Experience								
PHYC	479	Practical Experience								
PHYC	482	Independent Studies in Physics								
PHYC	485	Measures of Learning in Physics								
		Other Undergraduate Courses								
PHYC	140	General Physics I (no lab - calculus-based)								
PHYC	141	General Physics I (lab - calculus-based)								
PHYC	142	General Physics II (no lab - calculus-based)								
PHYC	143	General Physics II (lab - calculus-based)								
PHYC	200	Topics in Physics								
ASTR	330	Astronomy and Astrophysics I	X							
ASTR	332	Astronomy and Astrophysics II		X						
ASTR	380	Seminar in Modern Astronomy				X				
PHYC	346	Acoustics								
PHYC	354	Electronics 1	X				X			
PHYC	356	Electronics 2		X				X		
PHYC	360	Nuclear Techniques						X		
PHYC	370	Math Physics 1							X	
PHYC	372	Math Physics 2								X
PHYC	380	Seminar in Modern Physics								
PHYC	390	Honors Colloquium in Physics								
PHYC	452	Electromagnetic Theory		X				X		
PHYC	461	Elementary Particles						X		
PHYC	463	Nuclear Physics		X						
PHYC	465	Quantum Mechanics		X				X		
PHYC	466	Condensed Matter Physics	X							
PHYC	469	Immersion Experiences Related to Physics and Astronor								
PHYC	483	Seminar in Physics	+	+	+	+	+	+	+	+
APHY	310	Intro. to Nanoscience and Technology						X		
APHY	312	Fund. of Nanomaterials Growth & Device Fabrication		X						
APHY	315	Medical Physics 1					X			
APHY	316	Medical Physics 2						X		
APHY	420	Solar Thermal Systems								
APHY	422	Photovoltaics								

Course Pre-requisites

Course ID and Title	Crs Hrs	UCC Hrs	Pre-requisites and Co-requisites (CoR = Parallel)
MATH 161 Applied Calculus 1	4	3	MATH 112 (or equivalent)
MATH 162 Applied Calculus 2	4		MATH 161 or MATH 165
MATH 165 Calculus 1	4	3	MATH 112 (or equivalent)
MATH 166 Calculus 2	4		MATH 165
MATH 217 Linear Algebra	4		MATH 159, MATH 162 or MATH 165 or permission
MATH 267 Calculus 3	4		MATH 166
PHYC 115 Career Issues	1		None
PHYC 120 General Physics 1	5	3	MATH 165 (CoR) preferred or MATH 161 (CoR)
PHYC 122 General Physics 2	5		PHYC 120, MATH 166 (CoR) preferred or MATH 162 (CoR)
PHYC 260 Modern Physics	4		PHYC 122
PHYC 262 Modern Physics Lab	1		PHYC 260
PHYC 330 Mechanics	3		PHYC 120
PHYC 340 Physical Optics	3		PHYC 122
PHYC 354 Electronics 1	4		PHYC 122
PHYC 356 Electronics 2	4		PHYC 354
PHYC 369/479/482 or HONR 499 Research)	3		Permission
PHYC 434 Thermodynamics	3		PHYC 330; MATH 267
PHYC 450 Electricity & Magnitism 1	3		PHYC 122; MATH 267
PHYC 452 Electricity & Magnetism 2	3		PHYS 450
PHYC 464 Introduction to Quantum Mechanics	3		PHYC 260; MATH 267
PHYC 465 Quantum Mechanics	3		PHYC 464
PHYC 483 Seminar in Physics	1		None
PHYC 485 Measures of Learning in Physics	1		PHYC 260, PHYC 330
ASTR 330 Astronomy & Astrophysics 1	4		PHYC 122
ASTR 332 Astronomy and Astrophysics 2	4		ASTR 330

CHEM 111	4	3	one year secondary school algebra or equivalent
CHEM 112 (UCC-21 Tier 2 - 3 hrs)	4	3	CHEM 111, MATH 108
CS 120 Computer Science	4		MATH 112 (or equivalent - pre-calc trigonometry)
TMFG 105 Technical Design Graphics	3		None

Education Course Requirements

SCI 150	3		a science course from a science licensure area (CoR)
SCI 295	3		Junior standing, at least 24 hours of science content courses
SCI 396	3		SCI 295; [EDSE 380 & EDJH 385 (CoR)]
EDPS 251 Human Growth and Dev. for Sec. Ed.	3		None
EDMU 205 Introduction to Multiculteral Education	3		Sophomore standing
EDPS 390 Educational Psychology	3		EDPS 251
EDFO 420 Social, Historical and Phil. Foundations	3		Junior class standing
EDJH 385 Principals of Teaching in Middle School	3		EDSE 380 (CoR) and permission
EDSE 380 Principles of Teaching in Secondary School	3		EDJH 385 (CoR) and permission
EDSE 460 (Student Teaching)	6		Admission of student to teaching
EDJH 460 (Student Teaching)	6		Admission of student to teaching