

Universal General Education Transfer Component (UGETC)

English Composition (6 SCH)		The following <u>two</u> English composition courses are required.					
Prefix	Course Name	Credit Hours	Pre-requisites	University Course Equivalent	Credit Hours	Required or Preferred by Major	Notes
ENG 111	Expository Writing	3	None	RC 1000	3	Required	
ENG 112	Argument-Based Research	3	ENG 111	RC 2001	3	Required	
Total Credit Hours Required		6			6		

Humanities/Fine Arts (6 SCH)		Students will select <u>two</u> courses from at least two different disciplines:					
Prefix	Course Name	Credit Hours	Pre-requisites	University Course Equivalent	Credit Hours	Required or Preferred by Major	Notes
ART 111	Art Appreciation	3	None	ART 2011	3		
ART 114	Art History Survey I	3	None	ART 2030	3		
ART 115	Art History Survey II	3	None	ART 2130	3		
COM 231	Public Speaking	3	None	COM 2101	3		
ENG 231	American Literature I	3	ENG 112, 113 or 114	ENG 2350	3		
ENG 232	American Literature II	3	ENG 112, 113 or 114	ENG 2350	3		
MUS 110	Music Appreciation	3	None	MUS 2011	3		
MUS 112	Introduction to Jazz	3	None	MUS 2014	3		
PHI 215	Philosophical Issues	3	ENG 111	PHL Elective	3		
PHI 240	Introduction to Ethics	3	ENG 111	PHL 2000	3		
Total Credit Hours Required		6			9		

Social /Behavioral Science (6 SCH)		Students will select <u>two</u> courses from at least two different disciplines:					
Prefix	Course Name	Credit Hours	Pre-requisites	University Course Equivalent	Credit Hours	Required or Preferred by Major	Notes
ECO 251	Principles of Microeconomics	3	None	ECO 2030	3		
ECO 252	Principles of Macroeconomics	3	None	ECO 2040	3		
HIS 111	World Civilizations I	3	None	His 1101	3		
HIS 112	World Civilizations II	3	None	HIS 1102	3		
HIS 131	American History I	3	None	HIS 1200	3		
HIS 132	American History II	3	None	HIS 1200	3		
PSY 150	General Psychology	3	None	PSY 1200	3		
POL 120	American Government	3	None	P S 1100	3		
SOC 210	Introduction to Sociology	3	None	SOC 1000	3		
Total Credit Hours Required		6			6		

Mathematics (8 SCH)		Students will select <u>two</u> course from the following:					
Prefix	Course Name	Credit Hours	Pre-requisites	University Course Equivalent	Credit Hours	Required or Preferred by Major	Notes
MAT 171	Precalculus Algebra	4	None	MAT 1020	4		
MAT 172	Precalculus Trigonometry	4	MAT 171	GEP MAT	4		
MATH 263	Brief Calculus	4	MAT 171	MAT 1030	4		
MATH 271	Calculus I	4	MAT 172	MAT 1110	4	Required	
Total Credit Hours Required		8			8		

Natural Sciences (8 SCH)		Students will select <u>8</u> SCH from the following courses:					
Prefix	Course Name	Credit Hours	Pre-requisites	University Course Equivalent	Credit Hours	Required or Preferred by Major	Notes
AST 151/151A	General Astronomy I and lab I	4	None	AST 1001	4		
BIO 110	Principles of Biology	4	None	BIO 1201/BIO 1204	4		
BIO 111	General Biology I	4	None	BIO 1201/BIO 1204	4		must take both BIO 111 and BIO 112
BIO 112	General Biology II	4	BIO 111	BIO 1202/BIO 1205	4		must take both BIO 111 and BIO 112
CHM 151	General Chemistry I	4	None	CHE 1101/CHE 1110	4		must take both CHM 151 and CHM 152
CHM 152	General Chemistry II	4	CHM 151	CHE 1102/CHE 1120	4		must take both CHM 151 and CHM 152
GEL 111	Introduction Geology	4	None	GLY 1101	4		
PHY 110/110A	Conceptual Physics and Lab	4	None	PHY 1100	4		must take course with lab
PHY 151	College Physics I	4	MAT 171	PHY 1103	4	Accepted, but PHY 251 Preferred	must take PHY 151 and PHY 152
PHY 152	College Physics II	4	PHY 151	PHY 1104	4	Accepted, but PHY 252 Preferred	must take PHY 151 and PHY 152
PHY 251	General Physics I	4	MAT 271	PHY 1150	4	Preferred	must take PHY 251 and PHY 252
PHY 252	General Physics II	4	MAT 272 and PHY 251	PHY 1151	4	Preferred	must take PHY 251 and PHY 252
Total Credit Hours Required		8			8		

Total UGETC Hours	34	34
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Additional General Education Courses (11-12 SHC) : These courses must be classified as UGETC or general education within the CAA.							
Prefix	Course Name	Credit Hours	Pre-requisites	University Course Equivalent	Credit Hours	Category	Notes
MAT 272	Calculus II	4	MAT 271	MAT 1120	4	GEC	Required for major
UGETC/GEC		3			3	UGETC/GEC	
UGETC/GEC		3			3	UGETC/GEC	
UGETC/GEC		3			3	UGETC/GEC	
Total Credit Hours Required					12		

Total General Education Hours Required 45 45

Other REQUIRED HOURS (14-15 SHC): These courses must be classified as pre-major, elective or general education within the CAA.							
Prefix	Course Name	Credit Hours	Pre-requisites	University Course Equivalent	Credit Hours	Category	Notes
ACA 122	College Transfer Success	1	None		1	GEC	required by CAA
MAT 273	Calculus III	4	MAT 272	MAT 2130	4	GEC	Required for major
MAT 280	Linear Algebra	3	MAT 271	MAT 2240	3	Pre-Major	PHY Elective Fulfillment
MAT 285	Differential Equations	3	MAT 271	MAT 3130	3	Pre-Major	PHY Elective Fulfillment
Pre-Major/GEC/Elective		3			3	Pre-Major/GEC/Elective	
Pre-Major/GEC/Elective		1			1	Pre-Major/GEC/Elective	

Other Required Hours (15-16 SCH) 15 15

Total Semester Credit Hours in Program: 60

3rd - 4th Year Plan: Applied Physics				
Semester	Course	Hours	Notes	
5	PHY 2010 Intermediate Physics I	4	Major Requirement	16
5	MAT 2130 Calculus III	4	If taken at community college, take Free Elective	
5	PHY 3210 Modern Physics I	3	Major Requirement	
5	PHY Concentration Course 1	3	Major Requirement	
5	Free Elective	3		
6	PHY 2020 Intermediate Physics II	4	Major Requirement	16
6	PHY 2210 Physics Laboratory Techniques & Data Analysis	3	Writing in the Discipline	
6	PHY Concentration Course 2	3	Major Requirement	
6	PHY Elective Course 1	3	If MAT 280 taken at community college, take Free Elective	
6	Free Elective	3		
7	PHY Concentration Course 3	3	Major Requirement	15
7	PHY Concentration Course 4	3	Major Requirement	
7	PHY Concentration Course 5	3	Major Requirement	
7	PHY Elective Course 2	3	If MAT 285 taken at community college, take Free Elective	
7	Free Elective	3		
8	PHY 4210 Methods of Experimental Physics	3	CAPSTONE	15
8	PHY Concentration Course 6	3	Major Requirement	
8	Free Elective	3		
8	Free Elective	3		
8	Free Elective	3		
				62
				60 transfer hours
				122 hours for graduation

- This curriculum is designed for students planning on continuing to graduate school in physics and can include a minor in Math. Other concentrations such as Astrophysics, Electronics, Medical Physics, Geophysics, etc. are also possible.
- Some recommended Courses to take in the concentration, as physics electives, and as free electives include:
 - CS 1440 Computer Science I (4) OR CS 1445 Intro Programming w/Interdisc App (4)
 - MAT 2240 Linear Algebra (MAT 280) (3) (Pre: MAT 1120)
 - MAT 3130 Differential Equations (MAT 285) (3) (Pre: MAT 1120; recommended pre: MAT 2240)
 - PHY 3001 Analytical Methods in Physics (3) (Pre: MAT 2130 w/grade of C, Co: PHY 2020) Spring semester only
 - PHY 3010 Classical Physics (3) (Pre: MAT 3130) Fall semester only
 - PHY 3020 Electromagnetic Fields & Waves (3) (Pre: PHY 2020 & 3001 w/grade of C; MAT 3130) Spring semester only
 - PHY 3211 Modern Physics II (3) (Pre: PHY 1151; Co: PHY 2010) Spring semester only
 - PHY 3230 Thermal Physics (3) (Pre: PHY 1104 or 1151; MAT 2130) Spring semester only
 - PHY 4020 Computational Meth in Phy & Eng (3) (Pre: PHY 2020 w/grade of C; MAT 2130; Sr standing) Fall semester only
 - PHY 4620 Optics (4) (Pre: MAT 3130; Co: PHY 3020; Sr standing) Spring semester only
 - PHY 4640 Quantum Mechanics (3) (Pre: PHY 3010 & PHY 3210 w/grade of C; MAT 3130; Sr standing) Spring semester only
- A contract with a list of the approved courses MUST be filed with the College of Arts & Sciences Dean's Office no later than the end of the first semester of junior year.

- Residency Requirements:**
- 31 hours must be from ASU
 - 18 hours in the major must be from ASU
 - 9 hours in the minor must be from ASU
 - Final 30 hours must be courses taken through ASU (includes internships, study abroad taken through ASU)