

Bachelor of Arts in Astronomy

GENERAL REQUIREMENTS OF THE COLLEGE OF LIBERAL ARTS & SCIENCES

ENGLISH (9 Hours)

ENGL 101 Composition	3
ENGL 102 Critical Reading & Writing	3
ENGL _____	3 ¹

ORAL COMMUNICATION & LOGIC

COMS/PHIL _____	3 ²
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MATHEMATICS & LAB SCIENCE

Requirements met by requirements for the Major

PRINCIPAL COURSE DISTRIBUTION

HUMANITIES (3 (H) Courses – 9 Hours)

_____	3
_____	3
_____	3

SOCIAL SCIENCES (3 (S) Courses – 9 Hours)

_____	3
_____	3
_____	3

NAT. SCI. & MATH. (3 (N) Courses – 13 Hours)

MATH 121 Calculus	5
CHEM 184 Found. of Chemistry. I	5
_____	3 ³

WESTERN CIVILIZATION (6 Hours)

WC _____	3
WC _____	3

NON-WESTERN CULTURE (one course)

_____	_____
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FOREIGN LANG. (16 hr or Proficiency)

Level I _____	5
Level II _____	5
Level III _____	3
Level IV _____	3

SPECIFIC REQUIREMENTS FOR THE MAJOR (29 Hours, 15 at jr/sr level)

ASTR 196 Intro. Astronomy Lab	1
ASTR 391 Physical Astronomy	3
ASTR 390 Undergrad. Problems	3
ASTR 591 Stellar Astronomy	3
ASTR 592 Gal. & Extragal. Astronomy	3
PHSX 693 Grav. & Cosmology or ASTR 595 Astrogeophys. & Planetology or ASTR/PHSX 691, Astrophysics I	3
PHSX 211 or 213 General Physics I	4 ⁴
PHSX 212 or 214 General Physics II	4 ⁴
MATH 122 Calculus II	5

Graduation requirements stipulate a minimum of 124 credit hours, 45 of which must be at the junior/senior level (this requirement is in effect for students admitted Fall 2003 or later. Of the 97 credit hours included in the specific requirements listed above, only 15 are jr/sr level courses. Students must plan to take at least 27 additional credits as elective hours to satisfy the 124 hours requirement; 30 jr/sr credits in addition to the required jr/sr courses in physics and astronomy must be taken.

¹ – Current Options are ENGL 203, 205, 209, 210, or 211

² – Current Options are COMS 130 (131) or 230, or PHIL 148 or 310 or COMS exemption/proficiency

³ – Must be from Biological or Earth Science topical subgroups

⁴ – Majors are urged to take PHSX 213 and PHSX 214, the Honors sections of PHSX 211 and PHSX 212. Permission of the instructor is needed.

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Fall Semesters

Spring Semesters

Freshman Year

ENGL 101 <i>Composition</i>	3	ENGL 102 <i>Critical Reading & Writing</i>	3
MATH 121 <i>Calculus I</i>	5	MATH 122 <i>Calculus II</i>	5
CHEM 184 <i>Found. of Chemistry I</i>	5	COMS/PHIL Elective	3
Elective	3	PHSX 211 or 213 <i>General Physics I</i>	4 ^a
	16		15

Sophomore Year

ASTR 391 <i>Physical Astronomy</i>	3	ENGL Elective	3
Foreign Language	5	Foreign Language	5
Western Civilization	3	Western Civilization	3
PHSX 212 or 214 <i>General Physics II</i>	4 ^b	ASTR 196 <i>Intro. Astronomy Lab.</i>	1
		Elective	4
	15		16

Junior Year

Foreign Language	3	Foreign Language	3
ASTR 591 and/or Electives	9	ASTR 592 and/or Electives	9
ASTR 390 <i>Undergrad. Problems</i>	1	ASTR 390 <i>Undergrad. Problems</i>	1
Electives	3	PHSX 693 and/or Electives	3
	16		16

Senior Year

ASTR 591 and/or Electives	12	ASTR 592, PHSX 693 and/or Electives	15
ASTR 390 <i>Undergrad. Problems</i>	1		
Electives	3		
	16		15

The ASTR 591--692 sequence repeats every four semesters, beginning with ASTR 591 in Fall 2003. PHSX 693 is offered in alternate spring semesters (Spring 2006, 2008, etc.) ASTR 595 is offered infrequently.

^a – PHSX 213, General Physics I – Honors, is recommended

^b – PHSX 214, General Physics II – Honors, is recommended

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PRINCIPAL COURSES

ENGLISH (9 Hours) ENGL 101 Composition 3 ENGL 102 Critical Reading & Writing 3 ENGL _____ 3 ¹	HUMANITIES (2 (H) Courses – 6 Hours) _____ 3 _____ 3
WESTERN CIVILIZATION (6 Hours) WC _____ 3 WC _____ 3	SOC. SCIENCES (2 (S) Courses – 6 Hours) _____ 3 _____ 3

SPECIFIC REQUIREMENTS FOR THE MAJOR

MATHEMATICS (21 Hours) MATH 121 Calculus I 5 MATH 122 Calculus II 5 MATH 223 Vector Calculus 3 MATH 220 or 320 ⁴ Differential Eqns. 3 MATH 290 Elem. Linear Algebra 2 MATH Elective 3 ²	PHYSICS (34 Hours, 27 jr/sr) PHSX 211 or 213 General Physics I 4 ³ PHSX 212 or 214 General Physics II 4 ³ PHSX 313 +316 General Physics III 4 PHSX 521 Mechanics 3 PHSX 531 Electricity & Magnetism 3 PHSX 516 Phys. Measurements or PHSX 536 Elec. Circ.Meas. & Design 4 PHSX 611 Intro. Quantum Mechanics 3 PHSX 671 Thermal Physics 3 PHSX Electives: 6 Any two Physics Courses at 500 level or Higher including: ASTR 795 Space Plasma Physics
ASTRONOMY (19 HOURS, all jr/sr) ASTR 391 Physical Astronomy 3 ASTR 503 Undergraduate Research (1-4) ASTR 591 Stellar Astronomy 3 ASTR 592 Gal. & ExtrGal. Astr. 3 ASTR 691 Astrophysics I 3 ASTR 692 Astrophysics II 3 ASTR Elective: 3 ASTR 595 Astrgeo. & Planetology or PHSX 693 Grav. & Cosmology	COMPUTER SCIENCE (3-4 Hours) EECS 138 Intr. to Comp. (Fortran or C ⁺⁺) (3) or EECS 168 Programming I (4)
	CHEMISTRY (5 Hours) CHEM 184 Found. of Chemistry I 5

FREE ELECTIVES (11-15 Hours)

Students are required to complete 124 credit hours, 45 of which must be at the junior/senior level (courses numbered 300 and above). Requirements listed here comprise 109-113 hours, depending on ASTR 503 and EECS course selections.

TOTAL FOR DEGREE 125 HOURS

¹ – Current options include ENGL 203, 205, 209, 210, 211, or ENGL 362.

² - Current options include PHSX 518 and 718, MATH 465,526,530,558, 581,590,628,646,647,648,660,661, or any 700-level mathematics lecture course except for MATH 701 and MATH 715.

³ – Majors are encouraged to take PHSX 213 and PHSX 214, the Honors sections of PHSX 211 and 212. Permission of the instructor is required.

⁴ - Majors are advised to fulfill the differential equations requirement with MATH 320

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Fall Semesters

Spring Semesters

Freshman Year

MATH 121 <i>Calculus I</i>	5	MATH 122 <i>Calculus II</i>	5
ENGL 101 <i>Composition</i>	3	ENGL 102 <i>Critical Reading & Writing</i>	3
CHEM 184 <i>Found. of Chemistry I</i>	5	PHSX 211 or 213 <i>General Physics I</i>	4 ^d
Electives	3	Electives	4
	16		16

Sophomore Year

MATH 223 <i>Vector Calculus</i>	3	MATH 320 <i>Elem. Diff. Equ.</i>	3
MATH 290 <i>Elem. Linear Algebra</i>	2	ENGL Elective	3
EECS 138 <i>Intro. Comp.</i> or EECS 168	3-4	PHSX 313 <i>General Physics III</i>	3
PHSX 212 or 214 <i>General Physics II</i>	4 ^c	PHSX 316 <i>Inter. Phys. Lab</i>	1
ASTR 391 <i>Physical Astronomy</i>	3	Electives	6
	15-16		16

Junior Year

PHSX 521 <i>Mech. I</i>	3	PHSX 611 <i>Quantum Mech.</i>	3
MATH Elective	3 ^c	Western Civ. II	3
Western Civ. I	3	ASTR II	3 ^a
ASTR I	3 ^a	PHSX 536 <i>Elec. Circ. Meas. & Design.</i>	4
PHSX 516 <i>Phys. Meas.</i>	4	or 4 elective hours	
or elective (3)		Electives	3 ^{b,c}
	16		16

Senior Year

PHSX 671 <i>Thermal Physics</i>	3	ASTR IV	3 ^a
PHSX 531 <i>Electricity & Magnetism I</i>	3	ASTR 503 Undergraduate Research	1
ASTR III	3 ^a	Electives	12 ^b
Electives	6 ^b		
	15		16

^a – ASTR 591–592 and 691–692 is a four semester sequence of courses. ASTR 591 begins the sequence in fall semesters of odd-numbered years.

^b – Three courses during the Junior–Senior years must satisfy the ASTR elective and the PHSX electives. One credit in a research course is suggested.

^c – Current options include PHSX 518 and 718, MATH 465,526,530,558, 581,590,628,646,647,648,660,661, or any 700-level mathematics lecture course except for MATH 701 and MATH 715. MATH 661 is offered only in the Spring Semester.

^d – PHSX 213, General Physics I – Honors, is recommended.

^e – PHSX 214, General Physics II – Honors, is recommended.