ame:	D Number: Date	e: Anticipated Graduation Semester:
	CHEMBS-BIOS I	Degree Snapshot
<b>University Perspectives</b> (0-1 hr)		
UNIV 10051, University Pe	rspectives or exemption	
State Core English Composition	(0-6 hrs)	General Chemistry (8 hrs)
ENGL 10103, Composition	1 or exemption	CHEM 12073/12071, Chemistry for Majors I OR CHEM
<b>ENGL 10203</b> , Composition	2 or exemption	14103/14101, University Chemistry I
		CHEM 12283/12281, Chemistry for Majors II OR CHEM
State Core US History or Govern	ment (3 hrs)	14203/14201, University Chemistry II
US HIST/PLSC		
		Analytical Chemistry (4 hrs)
State Core Mathematics (0 hrs)		CHEM 22673/22671, Analytical Chemistry
Requirement met with courses in	n major.	
		Physical Chemistry (4-10 hrs)
State Core Natural Sciences w/ I		CHEM 34603/34601, Elements of Physical Chemistry
Requirement met with courses in	n major.	<u>Or:</u>
		CHEM 35004, Physical Chemistry I AND
State Core Social Sciences (9 hrs		CHEM 35204/35102, Physical Chemistry II
Social Science		
Social Science		Organic Chemistry (10 hrs)
Social Science	<del></del>	CHEM 37073/37072, Organic Chemistry for Majors I
State Core Fine Arts (3 hrs)		CHEM 37203/37201, Organic Chemistry for Majors II
Fine Art		Piochomistry (6 hrs)
		Biochemistry (6 hrs) CHEM 38103, Elements of Biochemistry
State Core Humanities (3 hrs)		CHEM 33103, Elements of Biochemistry CHEM 47203, Experimental Methods in Organic
Humanities		
		Chemistry
Biology (15 hrs)		Or:
BIOL 10103/10101, Princi		CHEM 481H3, Honors Biochemistry I
<b>BIOL 25473/25471,</b> Cell Bi	· ·	CHEM 484H3, Honors Biochemistry II
BIOL 20003/20001, Gener	= :	
BIOL 23373, General Gene		Instrumental Analysis or Advanced Inorganic Chemistry (3-4
Genomics and Bioinforma	tics	hrs)
		CHEM 42203/42101, Instrumental Analysis or CHEM 41203, Advanced Inorganic Chemistry
Mathematics (8-15 hrs)		41203, Advanced morganic enemistry
MATH 11003, College Alge directly in to next math)	ebra (or <u>math placement</u>	Biomechanical Techniques or Independent Research (3 hrs)
MATH 13004, Precalculus	or MATH 12003 Plane	CHEM 48503, Biochemical Techniques (Spring only. Co-
	acement directly in to next	or pre-req: CHEM 38103 or CHEM 484H3)
math)	an early in to next	Or (CHEM 400HV can also count here):
MATH 24004, Calculus I (F	equired)	CHEM 4000V 1 hour CHEM 4000V 1 hour
MATH 25004, Calculus II (I	Required)	CHEM 4000V 1 hour
Physics (8 hrs)		General Electives (12-33 hrs)
<b>PHYS 20103/20101,</b> Colle	ge Physics I <b>OR PHYS 20304,</b>	GENERAL ELECTRICS (12 33 III3)
University Physics I		
<b>PHYS 20203/20201,</b> Colle	ge Physics II <b>OR PHYS 20404,</b>	
University Physics II		
Last Updated: June 24, 202	Δ	

	Advising Notes			
		<b>Graduation Plan</b>		
Use the following addi more than one ma	itional resources, in addition to this major n ajor, minor, or pre-professional goal that ha	nap, to complete your graduation plan ( <u>Catalog</u> s additional required classes. This tool allows y	, and your <u>Degree Audit</u> in UAconne ou to combine all your educational <u>{</u>	ct). Many students have goals in to one plan.
High	List all Advanced P	lacement, International Baccalaureat	e. Dual or Concurrent credit	
School	List all Maraneca I	micrialional baccardarcat	-, - sai oi osiloanent alcult	
credit				
Year	Fall	Spring	Summer	Total
Year 1				Total 1 <sup>st</sup> year credit hours
				(aim for 30):
				Total 2 <sup>nd</sup> year
Year 2				credit hours (aim for 60):
				(ann for 60).
				Total 3 <sup>rd</sup> year
rear 3				credit hours
				(aim for 90):

Total 4th year

credit hours (Must be at least 120):

Last Updated: June 24, 2024

Year 4

Graduation Checklist (does your plan include the following):	
2.0 minimum overall UofA GPA (Courses taken at other colleges or universities are not factored into this GPA)	
All state minimum core requirements	
All Major(s)/Minor(s) requirements	
Writing requirement complete	
At least 50% of each major/minor taken from UofA	
24 hours of 30000+ classes exclusively from Fulbright College of Arts and Sciences classes	
30 hours of 30000+ classes exclusively from the University of Arkansas. This can include courses taken for the 24	-
hour rule.	
40 hours of upper-level classes. (30000+ or 20000+ with a pre-requisite. Can include transfer credit.) This can inc	lude
courses taken for the 24-hour and 30-hour rules.	
120 total eligible credit hours (see below for a list of ineligible classes)	

#### **Program Information:**

<u>Note about course sequencing</u>: The Chemistry majors are pre-requisite heavy programs that are highly sequenced. Some essential classes are offered only once per year. It's highly recommended that students work with advisors to create a multi-semester graduation plan early in their degree.

Please visit <a href="https://catalog.uark.edu/undergraduatecatalog">https://catalog.uark.edu/undergraduatecatalog</a> for an extensive list of core, major, graduation, and prerequisite requirements. To read more about individual classes, visit the <a href="courses of instruction">course of instruction</a> page for course descriptions.

#### **Degree Requirement Breakdown by Category**

The following information is designed to help you navigate your experience in your degree and answer common questions that may come up for each requirement.

Category	Degree Requirements	Curriculum Notes
UNIVERSITY	<b>V</b> ,	Or equivalent from another University of Arkansas college. (AFLS
PERSPECTIVES	UNIV 10051, University Perspectives (or UNIV 100H1)	102H3, ARSC 12001, GNEG 11101, GNEG 111H1, HIST 1003(H),
	, , , , , , , , , , , , , , , , , , , ,	HIST 10001, HIST 100H1, PLSC 10003, PLSC 100H3, BUSI/WCOB
0-1 hr		11101, WCOB/BUSI 111H1)
		,
		<b>Note</b> : students who transfer to the University of Arkansas with at
		least 24 credit hours will have this requirement waived.
STATE CORE		See <u>Catalog</u> for information about placement and/or exemption.
<b>COMPOSITION</b>	ENGL 10103, Composition 1 or SAT/ACT exemption (or	
	ENGL 101H3)	
0-6 hrs	ENGL 10203, Composition 2 or SAT/ACT exemption (or	
	ENGL 102H3)	
STATE CORE US	Choose 1: *	*Some courses may appear as options in multiple areas of the
HISTORY or	HIST 20003, History of the American People to 1877	State Core. You can only count each course 1 time in the State Core
GOVERNMENT	HIST 20103, History of the American People 1877 to  Proceed.	and will need unique courses in each of the content areas below.
3 hrs	Present     PLSC 20003, American National Government (or PLSC)	
J 1113	200H3)	
STATE CORE	Met with requirements in major.	Based on ACT/SAT or other math placement scores, students may
MATHEMATICS		need to enroll in additional remediation related courses. See
		<u>catalog</u> or <u>math placement</u> website for additional information.
0 hrs		
STATE CORE	Met with requirements in major	
NATURAL		
<b>SCIENCES CORE</b>		
9 hrs	Choose 2: (each class will have a required lecture and lab	Come elecces will have are requisites
STATE CORE SOCIAL SCIENCES		Some classes will have pre-requisites
SOCIAL SCIENCES	component):	
9 hrs	ANTH 10143/ANTH 10141, Intro to Biological     Anthropology (or ANTH 10143/401411)	
	Anthropology (or ANTH 101H3/101H1)	
	ASTR 20003/20001, Survey of the Universe (or ASTR 20013/20014)	
	200H3/200H1)	
	BIOL 10004, Biological Principles	
	BIOL 10103/10101, Principles of Biology (or BIOL	
	154H3/154H1)	
	BIOL 10104, Biology for Majors	
	BIOL 10303/10301, Plant Biology	
	BIOL 10503/10501, Principles of Zoology	
	BIOL 24003/24001, Human Anatomy	
	BIOL 24103/24101, Human Physiology	
	CHEM 10003/10001, Chemistry in the Modern World	
	CHEM 12103/12101, Fundamentals of Chemistry	
	CHEM 12073/12071, Chemistry for Majors I	
	CHEM 12283/12281, Chemistry for Majors II	
	CHEM 14103/14101; University Chemistry I	
	CHEM 14203/14201, University Chemistry II (or CHEM)	
	142H3/142H1)	
	17411J/ 174111J	

	ENICC 40003 /40004 Free increased I Crimery / or ENICC	
	ENSC 10003/10001, Environmental Science (or ENSC     100012 (100014)	
	100H3/100H1)	
	ENTO 10203/10201, Insects, Science, and Society	
	GEOL 11103/11101, Physical Geology (or GEOL	
	111H3/111H1)	
	GEOL 11203/11201, Earth Science	
	GEOS 11504, Introduction to Geology for Science Majors	
	PHYS 10243/10241, Physics and Human Affairs (or PHYS	
	102H3/102H1)	
	PHYS 10304, Physics for Elementary Education Majors	
	PHYS 10404, Physics for Architects I	
	PHYS 10504, Physics for Architects II	
	PHYS 20103/20101, College Physics I	
	PHYS 20203/20201, College Physics II	
	PHYS 20304, University Physics I (or PHYS 203H4)	
	PHYS 20404, University Physics II (or PHYS 204H4)	
STATE CORE FINE	Choose 1: *	*Some courses may appear as options in multiple areas of the
<u>ARTS</u>	ARCH 10003, Architecture Lecture (or ARCH 100H3)	State Core. You can only count each course 1 time in the State
3 hrs	ARHS 10003, Art Lecture (or ARHS 100H3)	Core and will need unique courses in each of the content
33	COMM 10003, Film Lecture (or COMM 100H3)	areas below.
	DANC 10003, Movement and Dance	
	ENGL 20103, Creative Writing 1	
	HUMN 211H4, Honors Birth of Modern Culture 1600-	
	1900 (honors only)	
	LARC 10003, The American Landscape (or LARC 100H3)	
	MLIT 10003, Experiencing Music (or MLIT 100H3)	
	MLIT 10103, Music and Society (music majors only. Or	
	MLIT 101H3)	
	MLIT 13303, Popular Music	
	THTR 10003, Theatre Appreciation (or THTR 100H3)	
	THTR 10103, Musical Theatre Appreciation (or THTR)	
	101H3)	
	• THTR 16803, Acting I	
CT4T5 00D5	THTR 18803, Acting 1 for Theatre majors	***
STATE CORE	Choose 1: *	*Some courses may appear as options in multiple areas of the
HUMANITIES	AAST 20203, The African American Experience	State Core. You can only count each course 1 time in the State
3 hrs	ANTH 10303, Introduction to Archeology	Core and will need unique courses in each of the content
	ARCH 10103, Diversity and Design (or ARCH 101H3)	areas below.
	CLST 10003, Introduction to Classical Studies: Greece (or	
	CLST 100H3)	
	CLST 10103, Introduction to Classical Studies: Rome (or	
	CLST 101H3)	
	COMM 12303, Media, Community and Citizenship (or	
	COMM 123H3)	
	DANC 10003, Dance Appreciation	
	DASC 21303, Data Privacy & Ethics	
	ENGL 11103, World Literature: Beginnings to 1650 CE (or	
	ENGL 111H3)	
	ENGL 11203, World Literature: 1650 CE to Present (or	
	ENGL 112H3)	
	ENGL 12103, Introduction to Literature (or ENGL 121H3)	
	ENGL 20103, Creative Writing I	

	GNST 20003, Introduction to Gender Studies (or GNST	
	200H3)	
	HIST 11193, Institutions and Ideas of World Civilizations I	
	(or HIST 111H3)	
	HIST 11293, Institutions and Ideas of World Civilizations II	
	(or HIST 112H3)	
	HIST 20003, History of the American People to 1877	
	HIST 20103, History of the American People 1877 to  Proceed.	
	Present	
	HUMN 112H4, Honors Equilibrium of Cultures 500-1600     (Honors only)	
	HUMN 22103, Introduction to World Religions	
	LALS 20103, Introduction to World Religions     LALS 20103, Introduction to Latin American and Latino	
	Studies	
	MRST 20103, Introduction to Medieval and Renaissance	
	Studies	
	MUSY 20003, Music in World Cultures (or MUSY 200H3)	
	PHIL 20003, Introduction to Philosophy (or PHIL 200H3)	
	PHIL 21003, Introduction to Ethics	
	PHIL 22003, Logic	
	PHIL 23003, Human Nature and the Meaning of Life	
	PHIL 31003, Ethics and the Professions	
	THTR 10003, Theatre Appreciation (or THTR 100H3)	
	THTR 10103, Musical Theatre Appreciation (or THTR)	
	101H3)	
	Any Intermediate level foreign language numbered at the	
	20000 level	*DIOL 10104 Dislam for mains and automatically count is liquid
BIOLOGY	BIOL 10103/10101, Principles of Biology*      BIOL 35473/35471, Coll Biology (Programs BIOL)	*BIOL 10104, Biology for majors can automatically count in lieu of this.
	BIOL 25473/25471, Cell Biology (pre-req: BIOL 1543/1541L or BIOL 1584 and recommended CHEM	tills.
15 hrs	1123/1121L)	
	BIOL 20003/20001, General Microbiology (pre-req: BIOL	
	10103/10101 or BIOL 10104 and CHEM 14103 or 12073.)	
	BIOL 23373, General Genetics (pre-req: BIOL 10103 or	
	10104 and CHEM 14103 or 12073 and MATH 11003) or	
	BIOL 42373, Genomics and Bioinformatics (pre-req: BIOL	
	23373 and 25473)	
MATHEMATICS	MATH 11003, College Algebra (or <u>math placement</u>	Students need to earn a C or higher in MATH classes to use
8-15 hrs	directly in to next math)	them as pre-requisites for other classes.
0-13 1113	MATH 13004, Precalculus or MATH 12003, Plane     Trigonometry Algebra (or math placement directly in to	
	next math)	Students should start on their math sequence as early as
	• MATH 24004, Calculus I (pre-req: MATH 13004, 12003, or	possible, since many of these classes will be pre-requisites
	math placement)*	for future CHEM classes.
	MATH 25004, Calculus II (pre-req: MATH 24004)	
		Based on ACT/SAT or other math placement scores,
		students may need to enroll in additional remediation
		related courses. See <u>catalog</u> or <u>math placement</u> website for
		additional information.
		*MATH 24005, Calculus I with review, can also count here.
	<u> </u>	

OURSES.  OUR	PHYSICS	Choose 1 sequence:	These Physics II will be a pre-requisite to some future CHEM
Chicke here will impact which CHEM options will be available and only, pre-req MATH 11003 or MATH 12003 or MATH 12003 or MATH 22003 or MATH 22003 or MATH 22004 or see gourse description for math placement)  PHYS 20203/20201, College Physics II (Spring and summer only, pre-req; PHYS 20103 or 20304)  OR PHYS 20304, University Physics II (pre-req; MATH 24004) PHYS 20404, University Physics II (pre-req; MATH 25004) Choose I sequence: CHEM 1203/12071, or CHEM 14103/14101  CHEM 12283/12281, Chemistry for Majors II (Spring only, Co- or pre-req; MATH 13003 or higher, Pre-req; CHEM 12073/12071 or CHEM 14103/14101)  Or CHEM 14103/14101, University Chemistry I (pre-req; MATH 1103 or see gourse description for math placement) CHEM 14203/14201, University Chemistry II (pre-req; MATH 1103 or see gourse description for math placement) CHEM 14203/14201, University Chemistry II (pre-req; CHEM 14203/14201, University Chemistry II (pre-req; CHEM 14203/14201, University Chemistry II (pre-req; CHEM 14203 or 12283 and MATH 11003 or see gourse description for math placement)  ANALYTICAL CHEMISTRY A hrs  CHEMISTRY A hrs  CHEM 32003/4601, Elements of Physical Chemistry (pre-req; CHEM 14203 or 12283 and MATH 11003 or see gourse description for math placement)  CHEM 34003/4601, Elements of Physical Chemistry (Fall only, Pre-req; CHEM 32003/35102, Physical Chemistry II (Spring only, Pre-req; CHEM 32003/35102, Physical Chemistry II (Spring only, Pre-req; CHEM 32003/3702, Organic Chemistry (or Majors II (Fall only, Pre-req; CHEM 32003/3702, Organic Chemistry for Majors II (Fall only, Pre-req; CHEM 32003/3702, Organic Chemistry for Majors II (Fall only, Pre-req; CHEM 32003/3702, Organic Chemistry (or Majors II (Fall only, Pre-req; CHEM 32003/3702, Organic Chemistry (	0.1		courses.
MATH 2003 or MATH 24004 or see course description for math placement)  PHYS 2003/20201, College Physics II (Spring and summer only, pre-req: PHYS 20103 or 20304)  OR  PHYS 20304, University Physics II (pre-req: MATH 24004)  PHYS 20404, University Physics II (pre-req: MATH 25004)  PHYS 20404, University Physics II (pre-req: MATH 25004)  CHEM 12073/12071, Chemistry for Majors I (Fall only, pre-req: MATH 11003 or higher or see course description for math placement)  CHEM 12283/12281, Chemistry for Majors II (pre-req: CHEM 1103 or CHEM 14103/1401, University Chemistry II (pre-req: MATH 1103 or see course description for math placement)  CHEM 14103/1401, University Chemistry II (pre-req: MATH 1103 or see course description for math placement)  CHEM 14103/1401, University Chemistry II (pre-req: MATH 1103 or see course description for math placement)  CHEM 14103/1401, University Chemistry II (pre-req: MATH 1103 or see course description for math placement)  CHEM 14103/1401, University Chemistry II (pre-req: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  CHEM 1403/1401, University Chemistry II (pre-req: CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)  CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)  CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)  CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)  CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)  CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)  CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)  CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)	8 nrs		
math platement)  PRYS 20203/20201, College Physics II (Spring and summer only, pre-reg: PHYS 20103 or 20304)  OR  PHYS 20304, University Physics I (pre-reg: MATH 20004)  PHYS 20404, University Physics II (pre-reg: MATH 25004)  Choose I sequence:  CHEM 12073/12071, Chemistry for Majors II (Spring only, Co- or pre-reg: MATH 1003 or higher or see gourse description for math placement)  OR  CHEM 12283/12281, Chemistry for Majors II (Spring only, Co- or pre-reg: MATH 1003 or higher. Pre-reg: CHEM 12073/12071 or CHEM 14103/14101)  OR  CHEM 12283/12281, Chemistry for Majors II (Spring only, Co- or pre-reg: MATH 13004 or higher. Pre-reg: CHEM 12073/12071 or CHEM 14103/14101)  OR  CHEM 14103/14101, University Chemistry I (pre-reg: CHEM 12073/12071 or CHEM 14103/14101)  OR  CHEM 14103/14101, University Chemistry II (pre-reg: CHEM 1313, and 11311 are no longer raught the above policy applies to students who may have taken them previously)  While not a required co-requisite in the course descriptions for math placement)  ANALYTICAL  CHEM 12677/22671, Analytical Chemistry (pre-reg: CHEM 12073 and PHYS 2004)  ORGANIC  CHEM 35004, Physical Chemistry I (Fall only, Co- or pre-reg. MATH 12004)  ORGANIC  CHEM 35004/35102, Physical Chemistry I (Fall only, Co- or pre-reg. MATH 2564c. Pre-reg: CHEM 12073 and PHYS 20040)  ORGANIC  CHEM 35004/35102, Physical Chemistry I (Fall only, Co- or pre-reg. MATH 2564c. Pre-reg: CHEM 22673 and PHYS 20040)  ORGANIC  CHEM 35004/35102, Physical Chemistry II (Spring only, Pre-reg: CHEM 35003/3702, Organic Chemistry of Majors II (Spring only, Pre-reg: CHEM 35003/3702, Organic Chemistry II (Spring only, Pre-reg: CHEM 35003/3702, Organic Chemistry for Majors II (Spring only, Pre-reg: CHEM 35003)  Honors students may also automatically count CHEM 36003/3601 and 360003 and 36003. So, while the department pre-dust		,	
PHYS 20203/20201, College Physics II (Spring and summer only, pre-reg: PHYS 20103 or 20304)  OR  PHYS 20304, University Physics II (pre-reg: MATH 20004)  PHYS 20304, University Physics II (pre-reg: MATH 20004)  PHYS 20404, University Physics II (pre-reg: MATH 20004)  PHYS 20404, University Physics II (pre-reg: MATH 20004)  PHYS 20404, University Physics II (pre-reg: MATH 20004)  OH CHEM 12037/12071, Chemistry for Majors II (Fall only, pre-reg: MATH 11003 or higher or see Gourse description for math placement)  Or  OR  CHEM 12037/12071 or CHEM 14103/14101)  Or  CHEM 1103 or See Course description for math placement)  CHEM 14103/14101, University Chemistry II (pre-reg: MATH 1103 or see Course description for math placement)  CHEM 14103 and MATH 11003 or see Course description for math placement)  ANALYTICAL CHEM 12283 and MATH 11003 or see Course description for math placement)  CHEM 14203 and MATH 11003 or see Course description for math placement)  CHEM 14203 and MATH 11003 or see Course description for math placement)  CHEM 14203 and MATH 11003 or see Course description for math placement)  CHEM 14203 and MATH 11003 or see Course description for math placement)  CHEM 14203 and MATH 11003 or see Course description for math placement)  CHEM 14203 and MATH 11003 or see Course description for math placement)  CHEM 2673/22677, Analytical Chemistry (pre-reg: CHEM 14003 or see Course description for math placement)  CHEM 3603/34601, Elements of Physical Chemistry (Fall only, Co-or pre-reg: CHEM 14003 or See Course description for math placement)  CHEM 37073 and 37072, Organic Chemistry (Fall only, Co-or pre-reg: CHEM 36004)  CHEM 35003/34501, Physical Chemistry II (Fall only, Co-or pre-reg: CHEM 36004)  CHEM 37073 and 37072, Organic Chemistry II (Fall only, Co-or pre-reg: CHEM 37073 and 3703)  CHEM 35003 and 35003, Swille the department prefers students to take CHEM 37073 and 3703, students who took CHEM 3603/36051 and 3603/36051 may count those course for this requirement. The course description of the following thi			later.
only, pre-req: PHYS 20103 or 20304)  OR PHYS 20304, University Physics II (pre-req: MATH 25004)  The Material Mate		,	
PHYS 20304, University Physics I (pre-reg: MATH 20004)     PHYSICAL CHEM 1203/12071, Chemistry for Majors II (Spring only. Co- or pre-reg: MATH 11003 or higher. Pre-reg: CHEM 12073/12071 or CHEM 14103/14101)  ANALYTICAL CHEM 14103/14101, University Chemistry I (pre-reg: MATH 11003 or see course description for math placement)  A hrs  Chem 14103/14101, University Chemistry I (pre-reg: MATH 13004)  ANALYTICAL CHEM 12023/14201, University Chemistry II (pre-reg: MATH 13003 or see course description for math placement)  A hrs  Chem 14203/14201, University Chemistry II (pre-reg: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  CHEM 14203 and 12283 and MATH 11003 or see course description for math placement)  CHEM 14203 and 12283 and MATH 11003 or see course description for math placement)  CHEM 14203 and 12283 and MATH 11003 or see course description for math placement)  CHEM 14203/14201, University Chemistry II (pre-reg: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  CHEM 14203/14201, University Chemistry II (pre-reg: CHEM 14203 or 12283 and MATH 15003 or see course description for math placement)  CHEM 14203/14201, University Chemistry II (pre-reg: CHEM 14203 or 12283 and MATH 15003 or see course description for math placement)  CHEM 35003/4601, Elements of Physical Chemistry (Fall only, Co- or pre-reg: CHEM 35004) Physical Chemistry II (Spring only, Pre-reg: CHEM 35004)  CHEM 35003/4601, Elements of Physical Chemistry II (Spring only, Pre-reg: CHEM 35004) Physical Chemistry II (Spring only, Pre-reg: CHEM 35004)  CHEM 35003/4501, Pre-reg: CHEM 35003  CHEM 35003/35001, Pre-reg: CHEM 35003  CHEM 35003/35001, Pre-reg: CHEM 37073 and 37203 as equivalent to C			
PHYS 20304, University Physics II (pre-req: MATH 24004) PHYS 20404, University Physics II (pre-req: MATH 25004) Choses a sequence: CHEMISTRY  8 hrs  PHYSICAL CHEM 12073/12071, Chemistry for Majors II (Fall only, Pre-req: MATH 13006 or higher. Pre-req: CHEM 12073/12071 or CHEM 14103/14101)  Or CHEM 1203/12071 or CHEM 14103/14101  Or CHEM 1403/14201, University Chemistry II (pre-req: MATH 1303 and MATH 11003 or see course description for math placement)  CHEM 1403/14201, University Chemistry II (pre-req: CHEM 11133, 11331, are no longer taught, but the above policy applies to students who may have taken them previously)  ANALYTICAL CHEM 12283 and MATH 11003 or see course description for math placement)  ANALYTICAL CHEMISTRY  4 hrs  Choose 1 option: Chemistry Chemistry II (pre-req: CHEM 14103 and MATH 11003 or see course description for math placement)  Chemistry Chemistry II (pre-req: CHEM 14203 regions)  ANALYTICAL CHEMISTRY  4 hrs  Choose 1 option: Chemistry Chemistry (pre-req: CHEM 14203 regions)  Choose 1 option: Chemistry Chemistry (pre-req: CHEM 14203 regions) Chemistry majors should take the lecture and the lab in the same semester.  This class will be a pre-requisite to future physical chemistry classes.  Choose 1 option: CHEMISTRY  4-10 hrs  Chemistry Chemistry (pre-req: CHEM 12673 and PHYS 20203 or 20404 and MATH 24004)  Or CHEM 35004, Physical Chemistry II (Spring only, Pre-req: CHEM 1203 or 12283) CHEMISTRY  10 hrs  CHEMISTRY  10 hrs  CHEMISTRY  CHEM		only. pre-req: PHYS 20103 or 20304)	
PHYS 20404, University Physics II (pre-req: MATH 25004)  GENERAL CHEMISTRY  B hrs  B hrs  CHEM 12073/12071, Chemistry for Majors I (Fall only, pre-req: MATH 11003 or higher or see course description for math placement)  Chem 12283/12281, Chemistry for Majors II (Spring only, Co-or pre-req: MATH 13004 or higher. Pre-req: CHEM 12073/12071 or CHEM 1130/14101)  Or  CHEM 14103/14101, University Chemistry I (pre-req: MATH 1103 or see course description for math placement)  CHEM 1403/14201, University Chemistry I (pre-req: MATH 1103 or see course description for math placement)  CHEM 1403/14201, University Chemistry II (pre-req: CHEM 1113, 1133, and 11311 are no longer taught, but the above policy applies to students who may have taken them previously)  ANALYTICAL CHEMISTRY  4 hrs  CHEM 2673/122671, Analytical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  CHEM 34003/34601, Elements of Physical Chemistry (Fall only, Pre-req: CHEM 2673 and PHYS 20203 or 20404 and MATH 24004)  PHYSICAL CHEM 35004, Physical Chemistry I (Fall only, Co- or pre-req: CHEM 35004, Physical Chemistry II (Spring only, Pre-req: CHEM 32603/35102, Physical Chemistry II (Spring only, Pre-req: CHEM 32703/337202, Organic Chemistry II (Spring only, Pre-req: CHEM 37073)  ORGANIC CHEM 3703/372702, Organic Chemistry for Majors II (Fall only, Pre-req: CHEM 37073)  CHEM 3703/372702, Organic Chemistry for Majors II (Fall only, Pre-req: CHEM 37073 and 37203 as equivalent to CHEM 3603/36014 and 3603/36012, Physical Chemistry for Majors II (Fall only, Pre-req: CHEM 37073)  CHEM 3703/372702, Organic Chemistry for Majors II (Fall only, Pre-req: CHEM 37073 and 37203, students who took CHEM 3703 and 37203 as equivalent to CHEM 3603/36014 and 3603/36012 and 3603/3001 and 3603/3		• OR	
## CHEM 12073/12071, Chemistry for Majors I (Fall only, pre-req: MATH 11003 or higher or see <u>course description</u> for math placement)  ## CHEM 12283/12281, Chemistry for Majors II (Spring only, Co- or pre-req: MATH 13004 or higher. Pre-req: CHEM 12073/12071 or CHEM 14103/14101)  ## Or		PHYS 20304, University Physics I (pre-req: MATH 24004)	
### CHEM 12073/12071, Chemistry for Majors I (Fall only, prereg: MAITH 11003 or higher or see course description for math placement)  - CHEM 12283/12283, Chemistry for Majors II (Spring only, Co- or pre-reg: MAITH 13004 or higher. Pre-reg: CHEM 12073/12071 or CHEM 14103/14101)  - Or  - CHEM 14103/14101, University Chemistry I (pre-reg: MAITH 1103 or see course description for math placement)  - CHEM 14203/14201, University Chemistry II (pre-reg: MAITH 1103 or see course description for math placement)  - CHEM 14203/14201, University Chemistry II (pre-reg: CHEM 14103 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement)  - CHEM 14203 and MAITH 11003 or see course description for math placement in the course descr			
### a student changes to this major after having taken CHEM 1113, Chemistry for Majors II (Spring only, Co- or pre-req: MATH 13004 or higher. Pre-req: CHEM 12073/12071 or CHEM 14103/14101)  **Or** Or** CHEM 14103/14101, University Chemistry I (pre-req: MATH 1103 or see course description for math placement) CHEM 14203/14201, University Chemistry II (pre-req: CHEM 1113, 1133, and 11311 are no longer taught, but the above policy applies to students who may have taken them previously)  ### Analytical, CHEM 14103 and MATH 11003 or see course description for math placement)  ### Analytical, CHEM 14103 and MATH 11003 or see course description for math placement)  ### Analytical, CHEM 14103 and MATH 11003 or see course description for math placement)  ### Analytical, CHEM 14103 and MATH 11003 or see course description for math placement)  ### Chemistry  ### Analytical, CHEM 14103 and MATH 11003 or see course description for math placement)  ### Chemistry  ### Analytical, CHEM 14203 and MATH 11003 or see course description for math placement)  ### Chemistry  ###		•	_
math placement)  CHEM 12283/12281, Chemistry for Majors II (Spring only. Co- or pre-req: MATH 13004 or higher. Pre-req: CHEM 12073/12071 or CHEM 14103/14101)  Or  CHEM 1403/14101, University Chemistry I (pre-req: MATH 1103 or see course description for math placement)  ANALYTICAL CHEM 1403 and MATH 11003 or see course description for math placement)  CHEM 1403/14201, University Chemistry II (pre-req: CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)  A hrs  PHYSICAL CHEM 22673/22671, Analytical Chemistry (pre-req: CHEM 1403 or 12283 and MATH 11003 or see course description for math placement)  PHYSICAL CHEM 15TRY  4-10 hrs  Chem 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  CHEM 35004, Physical Chemistry I (Fall only. Co- or pre-req: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404)  CHEM 37073/37072, Organic Chemistry II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 1403 or 12283)  CHEM 3703/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 1403 or 12283)  CHEM 3703/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 1403 or 12283)  CHEM 3703/37202, Organic Chemistry for Majors II (Fall only. Pre-req: CHEM 1403 or 12283)  CHEM 3703/37202, Organic Chemistry for Majors II (Fall only. Pre-req: CHEM 1403 or 12283)  CHEM 3703/37202, Organic Chemistry for Majors II (Fall only. Pre-req: CHEM 14000 or 12883)  CHEM 3703/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14000 or 12883)  CHEM 3703/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14000 or 12883)  CHEM 3703/3703/3702 and 37203, Students who took CHEM 3603/36051 and 503/36051 and 503/36	CHEMISTRY		14103 or CHEM 12283 and CHEM 14203.
Co- or pre-req: MATH 13004 or higher. Pre-req: CHEM 12073/12071 or CHEM 14103/14101)  **Or** Or** CHEM 14103/14101, University Chemistry I (pre-req: MATH 1103 or see course description for math placement)  **CHEM 14203/14201, University Chemistry II (pre-req: CHEM 14103 and MATH 11003 or see course description for math placement)  **ANALYTICAL CHEMISTRY* A hrs  **Chemistry or Engineers I and CHEM 1133/1131L, Chemistry (in the past of the CHEM 14101 or CHEM 14201. (CHEM 1133, 1133, and 1131L are no longer taught, but the above policy applies to students who may have taken them previously)  **ANALYTICAL CHEMISTRY* A hrs  **Chemistry and Physical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  **Chemistry and Physical Chemistry (pall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  **Or* CHEM 35004, Physical Chemistry II (Fall only. Co- or pre-req: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  **Or* CHEM 35004/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004). Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Fall only. Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  **OCHEM 37003/3702, Organic Chemistry for Majors II (Spring	8 hrs	·	
12073/12071 or CHEM 14103/14101]  1303 or see course description for math placement)  1303 or see course description for math placement)  1303 or see course description for math placement)  1403 and MATH 11003 or see course description for math placement)  1403 or 12283 and MATH 11003 or see course description for math placement)  1403 or 12283 and MATH 11003 or see course description for math placement)  1403 or 12283 and MATH 11003 or see course description for math placement)  1403 or 12283 and MATH 11003 or see course description for math placement)  1403 or 12283 and MATH 11003 or see course description for math placement)  1403 or 12283 and MATH 11003 or see course description for math placement)  1403 or 12283 and MATH 11003 or see course description for math placement)  1506 or HISTORY (Fall only, Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  1607 or CHEM 35004, Physical Chemistry I (Fall only, Co- or pre-req: MATH 2564. Pre-req: CHEM 22673 and PHYS 20404)  1708 or CHEM 37004, Physical Chemistry I (Spring only, Pre-req: CHEM 14203 or 12283)  1709 or CHEM 3703/37072, Organic Chemistry I (Spring only, Pre-req: CHEM 14203 or 12283)  1709 or CHEM 3703/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14203 or 12283)  1709 or CHEM 3703/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14203 or 12283)  1709 or CHEM 3703/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14203 or 12283)  1709 or CHEM 3703/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14203 or 12283)  1709 or CHEM 3703/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14203 or 12283)  1709 or CHEM 3703/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14203 or 12283)  1709 or CHEM 3703/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14203 or 12283)  1700 organic Market Marke		CHEM 12283/12281, Chemistry for Majors II (Spring only.	
Or  Or  CHEM 14103/14101, University Chemistry I (pre-req: MATH 1103 or see course description for math placement)  CHEM 14203/14201, University Chemistry II (pre-req: CHEM 14103 and MATH 11003 or see course description for math placement)  CHEM 14203/14201, University Chemistry II (pre-req: CHEM 14103 and MATH 11003 or see course description for math placement)  ANALYTICAL CHEM 22673/22671, Analytical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  PHYSICAL CHEMISTRY  4-10 hrs  Choose 1 option:  CHEM 35004, Physical Chemistry I (Fall only, Co- or pre-req: CHEM 35004, Physical Chemistry I (Fall only, Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  Or  CHEM 35004, Physical Chemistry I (Fall only, Co- or pre-req: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404)  CHEM 35004/35102, Physical Chemistry II (Spring only, Pre-req: CHEM 35004)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14203 or 12283)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14703 or 12283)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 37073)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14703 or 12283)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 37073)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 37073)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 37073)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 37073)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14703 or 12283)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 14703 or 12283)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 37073)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only, Pre-req: CHEM 37073)  CHEM 37073/37072, Organic Chemistry for Majors II (Spri		Co- or pre-req: MATH 13004 or higher. Pre-req: CHEM	
Or CHEM 14103/14101, University Chemistry I (pre-req: MATH 1103 or see course description for math placement) CHEM 14103 and MATH 11003 or see course description for math placement)  ANALYTICAL CHEM 22673/22671, Analytical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  CHEM 1203 or 12283 and MATH 11003 or see course description for math placement)  CHEM 22673/22671, Analytical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  CHEM 22673/22671, Analytical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  CHEM 35004, Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  CHEM 35004, Physical Chemistry I (Fall only. Co- or pre-req: MATH 2564c, Pre-req: CHEM 22673 and PHYS 20404)  CHEM 35004, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students to take CHEM 37073 and 37203, students who took CHEM 3605		12073/12071 or CHEM 14103/14101)	
applies to students who may have taken them previously)  CHEM 14103/14201, University Chemistry I (pre-req: MATH 1103 or see course description for math placement)  CHEM 14103 and MATH 11003 or see course description for math placement)  ANALYTICAL CHEM 1203/14201, University Chemistry (pre-req: CHEM 14103 and MATH 11003 or see course description for math placement)  A hrs  CHEM 22673/22671, Analytical Chemistry (pre-req: CHEM 14103 or 12283 and MATH 11003 or see course description for math placement)  PHYSICAL CHEMISTRY  4-10 hrs  Choose 1 option:  CHEM 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  ORGANIC CHEM 35004, Physical Chemistry I (Fall only. Co- or pre-req: MATH 2564c, Pre-req: CHEM 22673 and PHYS 20404)  CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  ORGANIC CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 36053 and 36203.50, while the department prefers this requirement. However, students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students to take of labs by doing 1 of the following the pre-requirement. However, students will need to make up the missing 2 h			
1103 or see <u>course description</u> for math placement)  • CHEM 14103 and MATH 11003 or see <u>course description</u> for math placement)  ANALYTICAL CHEM 22673/22671, Analytical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see <u>course description</u> for math placement)  4 hrs  CHEM 12673/22671, Analytical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see <u>course description</u> chemistry majors should take the lecture and the lab in the same semester.  This class will be a pre-requisite to future physical chemistry classes.  CHEM 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  • Or  • CHEM 35004, Physical Chemistry I (Fall only. Co- or pre-req: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404) • CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  ORGANIC CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  • CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37003)  Honors students may also automatically count CHEM 36013/36012 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053 and 36203. So, while the department prefers of this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  • Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).		• Or	
CHEM 14103 and MATH 11003 or see course description for math placement)  CHEMISTRY  A hrs  CHEMISTRY  A hrs  Choose 1 option:  CHEM 35004, Physical Chemistry I (Fall only. Co- or prereq: MATH 24004)  CHEM 35004, Physical Chemistry I (Fall only. Co- or prereq: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404)  CHEMISTRY  ORGANIC CHEMISTRY  ORGANIC CHEMISTRY  CHEM 37073/37072, Organic Chemistry I (Fall only. Co- or prereq: CHEM 37073)  CHEM 37004/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 37073)  CHEM 37004/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 37073)  CHEM 37004/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 37073)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37003)  CHEM 3703/37020, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37003)  CHEM 3703/37020, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37003)  CHEM 3703/37020, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37003)  CHEM 3703/37020, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 3703/37020, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37003)  CHEM 36033/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students to take they may not also count these hours below).		CHEM 14103/14101, University Chemistry I (pre-req: MATH)	
CHEM 14103 and MATH 11003 or see course description for math placement)  ANALYTICAL CHEMISTRY  4 hrs  CHEM 22673/22671, Analytical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)  Choose 1 option:  CHEM 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  ORGANIC CHEM 35004, Physical Chemistry I (Fall only. Co- or pre-req: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404)  CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/370202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/370202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/3703/3703/3703/3703/3904  CHEM 3703/3703/3703/3904  CHEM 3703/3703/3703/3904  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req:		1103 or see <u>course description</u> for math placement)	
ANALYTICAL CHEMISTRY 4 hrs  Choose 1 option: Chemistry 4-10 hrs  Chem 35004, Physical Chemistry I (Fall only. Co- or prereg: CHEM 35004) CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-reg: CHEM 35004)  ORGANIC CHEMISTRY 10 hrs  ORGANIC CHEMISTRY 10 hrs  Analytical Chemistry (I pre-reg: CHEM 14203 or 12283) CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-reg: CHEM 14203 or 12283) CHEM 3703/37202, Organic Chemistry for Majors II (Spring only. Pre-reg: CHEM 37073) CHEM 3703/37202, Organic Chemistry of Majors II (Spring only. Pre-reg: CHEM 37073) CHEM 3703/37202, Organic Chemistry of Majors II (Spring only. Pre-reg: CHEM 37073) CHEM 3703/37202, Organic Chemistry of Majors II (Spring only. Pre-reg: CHEM 37073) CHEM 3703/37203, So, while the department prefers students to take CHEM 37073 and 37203 as equivalent to CHEM 36053/36021 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students) below).			
CHEM 22673/22671, Analytical Chemistry (pre-req: CHEM 14203 or 12283 and MATH 11003 or see course description for math placement)      PHYSICAL CHEMISTRY     4-10 hrs  Choose 1 option:			
14203 or 12283 and MATH 11003 or see course description for math placement)  4 hrs  Choose 1 option:  CHEM 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  CORGANIC CHEMISTRY  10 hrs  CHEM 37073/37072, Organic Chemistry I (Fall only. Co- or pre-req: CHEM 37073)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 37003/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 37003/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 37003/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 37003/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 37003/370072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 37003/370072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 36053/36051 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  • Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).	ANALYTICAL		While not a required co-requisite in the course descriptions
for math placement)  PHYSICAL CHEMISTRY  4-10 hrs  Choose 1 option:  CHEM 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  Or  CHEM 35004, Physical Chemistry I (Fall only. Co- or pre-req: MATH 2564C. Pre-req: CHEM 22673 and PHYS 20404)  CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  ORGANIC CHEMISTRY  10 hrs  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 3703/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  • Join a research lab and take at least 2 hrs of CHEM 4000V (if students to this here, they may not also count these hours below).			
This class will be a pre-requisite to future physical chemistry classes.  Choose 1 option:  CHEMISTRY  4-10 hrs  CHEM 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  Or  CHEM 35004, Physical Chemistry I (Fall only. Co- or pre-req: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404)  CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  ORGANIC CHEMISTRY  10 hrs  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 3703/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073 and 37203, students who took CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).			
CHEMISTRY  4-10 hrs  CHEM 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  CHEM 35004, Physical Chemistry I (Fall only. Co- or pre-req: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404)  CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  CHEMISTRY  10 hrs  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 14203 or 12283)  CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  CHEM 36053/36051 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).	4 hrs		
PHYSICAL CHEMISTRY 4-10 hrs  Chose 1 option: CHEM 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  CORGANIC CHEMISTRY 10 hrs  CHEM 37073/37072, Organic Chemistry I (Fall only. Pre-req: CHEM 14203 or 12283) CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073) CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073) CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073) CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073) CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073) CHEM 37073/37072, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073) CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).			
CHEMISTRY  4-10 hrs  CHEM 34603/34601, Elements of Physical Chemistry (Fall only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  Or CHEM 35004, Physical Chemistry I (Fall only. Co- or pre-req: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404) CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  ORGANIC CHEMISTRY  10 hrs  CHEM 37073/37072, Organic Chemistry for Majors I (Fall only. Pre-req: CHEM 14203 or 12283) CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things: Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).	PHYSICAL	Choose 1 option:	
and Phys 20203 or 20404 and MATH 24004)  only. Pre-req: CHEM 22673 and PHYS 20203 or 20404 and MATH 24004)  CHEM 35004, Physical Chemistry I (Fall only. Co- or prereg: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404)  CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  CHEM 37073/37072, Organic Chemistry for Majors I (Fall only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).		•	
CRGANIC CHEMISTRY  ORGANIC CHEM 37073/37072, Organic Chemistry for Majors I (Fall only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).			
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CHEM 35004, Physical Chemistry I (Fall only. Co- or prereq: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404) CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  ORGANIC CHEMISTRY  CHEM 37073/37072, Organic Chemistry for Majors I (Fall only. Pre-req: CHEM 14203 or 12283) CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things: Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).			
req: MATH 2564c. Pre-req: CHEM 22673 and PHYS 20404)  • CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  • CHEM 37073/37072, Organic Chemistry for Majors I (Fall only. Pre-req: CHEM 14203 or 12283)  • CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  • Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).		• Or	
CHEM 35204/35102, Physical Chemistry II (Spring only. Pre-req: CHEM 35004)  ORGANIC CHEMISTRY  CHEM 37073/37072, Organic Chemistry for Majors I (Fall only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).			
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ORGANIC CHEMISTRY  • CHEM 37073/37072, Organic Chemistry for Majors I (Fall only. Pre-req: CHEM 14203 or 12283)  • CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  • CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  • Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).		, , , ,	
• CHEM 37073/37072, Organic Chemistry for Majors I (Fall only. Pre-req: CHEM 14203 or 12283) • CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  • Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).	ORGANIC	ric-leq. Cillivi 33004)	Honors students may also automatically count CHFM
only. Pre-req: CHEM 14203 or 12283)  CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).	· · · · · · · · · · · · · · · · · · ·	CHEM 37073/37072. Organic Chemistry for Majors I (Fall)	,
• CHEM 37203/37202, Organic Chemistry for Majors II (Spring only. Pre-req: CHEM 37073)  The catalog also lists CHEM 37073 and 37203 as equivalent to CHEM 36053 and 36203. So, while the department prefers students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).			
(Spring only. Pre-req: CHEM 37073)  Students to take CHEM 37073 and 37203, students who took CHEM 36053/36051 and 36203/36201 may count those courses for this requirement. However, students will need to make up the missing 2 hours of labs by doing 1 of the following things:  Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).	10 hrs	, ,	•
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missing 2 hours of labs by doing 1 of the following things:  • Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).			
<ul> <li>Join a research lab and take at least 2 hrs of CHEM 4000V (if students do this here, they may not also count these hours below).</li> </ul>			
below).			•
· ·			
• Take an additional Cheivi 30000+ class that is not already			,
required			•

		Retake the labs, but this time the major's versions (CHEM 37072 and 37202) Take two semesters of CHEM 401H1 (honors students only)
BIOCHEMISTRY 6 hrs	Choose 1 sequence:  CHEM 38103, Elements of Biochemistry (Pre-req: CHEM 36203 or 37203)  CHEM 47203, Experimental Methods in Organic Chemistry (Fall only. Pre-req: CHEM 36203 or 37203)	Students cannot receive credit for both Elements of Biochemistry and Honors Biochemistry I & II
	<ul> <li>Or:</li> <li>CHEM 481H3, Honors Biochemistry I (pre-req: honors candidacy and CHEM 36203 or 37203)</li> <li>CHEM 484H3, Honors Biochemistry II (pre-req: honors candidacy and CHEM 481H3)</li> </ul>	
INSTRUMENTAL ANALYSIS OR ADVANCED INORGANIC CHEMISTRY	Choose 1 option:  CHEM 42203/42101, Instrumental Analysis (Pre-req: CHEM 22673 and CHEM 36203 or 37203)  Or:	When students complete their PHYS classes may impact which option they choose for this category. Students on a 4-year plan will need to complete PHYS in year 2 if they would like to take Advanced Inorganic Chemistry.
3-4 hrs	CHEM 41203, Advanced Inorganic Chemistry (Fall only.  Pre-req: CHEM 34603 or 35204)	
BIOCHEMICAL THECHNIQUES OR INDEPENDENT RESEARCH	Choose 1:      CHEM 48503, Biochemical Techniques (Spring only. Coor pre-req: CHEM 38103 or CHEM 484H3)	<b>Note</b> : Students in the honors program completing CHEM 400HV for this requirement are also required to register for <b>CHEM 401H1</b> in the spring of both Junior and Senior year.
3 hrs	Or:  Completion of a senior thesis based on independent research wherein at least 1 hour of CHEM 4000V (or CHEM 400HV) is earned during three different semesters.	
GENERAL ELECTIVES 12-33 hrs	Hours will vary depending on math placement, language placement, choice within chemistry major, and whether a student is exempt from ENGL 10103 and 10203.	Some general electives may need to be upper level to meet college and university residency requirements. See Graduation Checklist on page 3 for more information.
WRITING REQUIREMENT	The college writing requirement may be satisfied in one of two ways:  Completion of CHEM 34601 or CHEM 35102  Successful honors thesis defense	
<u>HONORS</u>	Minimum Requirements for Honors:  Maintain cumulative grade point average of 3.5 in all coursework.  Complete a minimum of 12 hours of honors courses from the UofA (which includes CHEM 401H1 taken once in Junior year and once in Senior year)  Complete and defend Honors Thesis  See Catalog for full description of requirements.	Honors Thesis Timeline: Honors students should consistently check the honors thesis timeline to stay on track to complete your honors thesis.  College Honors: Students who also are following the College Honors Plan need to complete additional requirements. Those can be found on the advising website (consult with an academic advisor if you have questions about your catalog year):  Academic Planning Resources