Chemistry

Warriors on the Way to STEM WOW2STEM

Merced College

Chemistry is known as the central science because the study of matter and energy impacts many disciplines. Throughout the curriculum, chemistry majors develop strong reasoning and analysis skills to address problems that are put into hands-on practice

in our laboratories. Students learn to work individually and collaboratively to design, carry out, and interpret experiments utilizing modern instrumentation and facilities.

What can I do with a degree in Chemistry?

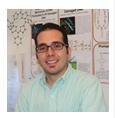
The Chemistry B.S. Degree program is nationally approved by the American Chemical Society. The Chemistry B.S. Degree program prepares students for a career as a professional chemist. This degree commonly leads to graduate school for an advanced degree (MS, PhD), professional chemist in industry or

How can I participate in WOW2STEM?

- Meet with a STEM counselor each semester at your community college.
- Follow a student educational plan (SEP) as outlined by a STEM counselor.
- Attend presentations and workshops throughout the year.
- Follow application dates and deadlines as directed by the Transfer Advisor and Stanislaus State.

For more information you may contact:
Elizabeth Monroe, Transfer Specialist 209.667.3164
emonroe@csustan.edu
www.csustan.edu/STEM-success

government agencies (agriculture, health, biotechnology, air and water resource management, etc.).



Dr. Elvin Alemán is a professor in the Chemistry department at Stanislaus State. His current research projects include Single Molecule Fluorescence studies of how DNA repair enzymes work, and the photophysical characterization of corrole and porphyrin molecules which is important for molecular, electronic and photonic device applications.

Chemistry B.A. Roadmap						
Prerequisites to Lower-Division Courses	Lower-Division Courses at Merced College	Major Course Requirements at Stanislaus State				
CHEM-04A & MATH-C	CHEM-04A (Gen. Chem I)	Lower-Division Major Course				
CHEM-04A	CHEM-04B (Gen. Chem II)	Requirement: CHEM 2010 – Quantitative Analysis &				
CHEM-02A & MATH-C	CPSC-06 (Programming Concepts & Methodology I)	Basic Instrumental Techniques (Complete at Stanislaus State - 4 units)				
MATH-02	MATH-04A (Calculus I)					
MATH-04A	MATH-04B (Calculus II)	Upper-Division Major Course Requirements:				
	Complete one sequence:	CHEM 4030 – Biophysical Chemistry (3 units)				
MATH-02 <u>or</u> MATH-25& 26 PHYS-02A	PHYS-02A (Gen. Physics I) PHYS-02B (Gen. Physics II)	CHEM 4110 – Applied Instrumental Methods (4 units)				
MATH-04A PHYS-04A & MATH-04B MATH-04B & PHYS-04B	Or PHYS-04A (Physics I) PHYS-04B (Physics II) PHYS-04C (Physics III)	CHEM 4400 – Biochemistry I (3 units) Upper-Division Electives (Minimum 14 units)				
CHEM-04B	*CHEM-12A (Org. Chem. I)					
CHEM-12A	*CHEM-12B (Org. Chem II)	Major Total = 24 Upper-Division units				
requirement, but do not control Nonetheless, the BA degrated completed within two yearseries is completed before	the Organic Chemistry series ount as upper-division units. ee requirements can only be rs after, if the Organic Chemistry e transferring to Stanislaus State. 4A & 4B) are approved course sly, for the Biochemistry					

Chemistry B.S. Roadmap						
Prerequisites to Lower-Division Courses	Lower-Division Courses at Merced College	Major Course Requirements at Stanislaus State				
CHEM-02A & MATH-C	CHEM-04A* (General Chem I)	Lower-Division Major Course Requirement:				
CHEM-04A	CHEM-04B* (General Chem II)	CHEM 2010 – Quantitative Analysis & Basic Instrumental Techniques (4 units)				
CHEM-04B	CHEM-12A** (Organic Chem I)					
CHEM-12A	CHEM-12B**	Upper-Division Major Course Requirements:				
MATH C or MATH-61	CPSC-06 (Programming Concepts & Methodology)	CHEM 4010 - Physical Chemistry I (3 units) CHEM 4012 - Physical Chemistry Lab I (1 unit)				
MATH -02	MATH -04A (Calculus I)	CHEM 4020 - Physical Chemistry II (3 units)				
MATH-04A	MATH -04B (Calculus II)	CHEM 4022 - Physical Chemistry Lab II (1 unit) CHEM 4100 - Instrumental Analysis (WP)				
MATH-04B	MATH -04C (Multivariable Calculus)	(4 units) CHEM 4200 - Advanced Inorganic Chemistry (3 units)				
MATH-04A PHYS-04A	PHYS-04A (Physics I) & PHYS-04B (Physics II) & PHYS-04C (Physics III)	CHEM 4212 - Advanced Chemistry Lab (2 units) CHEM 4400 - Biochemistry I (3 units) Upper-Division Electives				
Lab must be completed at M Stanislaus State. These co Biochemistry Concentration *CHEM-04A/04B must be considering to Stanislaus Sta	d as a <u>series only</u> . The Lecture and Merced College to receive credit at urses can be used to meet the requirement.	(minimum 11 units*) Major Total = 31 Upper-Division units				

Associate Degree Name:			Major:	Date: Student ID	#:			
				MUSG 10, 12, 13, 14, 15		$-\!\!\!\!-$		
To complete the associate breadth requirement, you must select following areas:		fill the unit requir	ements of the	PHOT 33, 36				
General Education (23 units minimum)				C2 Humanities (3 units)	Complete	ed In I	Progress	Planned
Area A: Language and Rationality (6 units total)				ARTD 07		$-\!\!\!\!+\!\!\!\!\!-$		
Select one course from area A1 and one course from area A2				DRAM 01		$-\!\!\!\!+\!\!\!\!-$		
A1 English Composition (3 units)	Completed	In Progress	Planned	ENGL 01B, 04A, 04B, 05, 06A, 06B, 07, 08, 10, 11, 18		$-\!\!\!\!\!-$		
COMM 01, 01H, 02, 04, 05	Completed	III Flogress	Fiamled	FREN 01, 02, 03, 04				
A2 Written Communication (3 units)	Completed	In Progress	Planned	GERN 01, 02, 03, 04		$-\!$		
ENGL 01A	Completed	III I Togicos	1 lamicu	HIST 03A, 03B, 04A, 04B, 05, 09A, 09B, 17A, 17AH, 17B, 17BH	1,			
A2 Critical Thinking (3 units)	Completed	In Progress	Planned	HMNG 01, 02	-	+		
PHIL 10, 12	Completed	iii i iogicoo	1 idillica	HUM 01, 01H, 02, 02H, 15, 21	_	-		
ENGL/PHIL 13, 13H	+		 	JPNS 01A, 01B, 02		\dashv		
ENGL 01C	+		 	PHIL 01, 01H, 02, 03, 04, 05, 15	- 	-		
AA-AS Breadth Courses: ACTG 04A, COMM 30, CPSC 07, ENGL 02, M	1ATH C 02 02H (03 04A 04B 04C	06 07 08 10	SPAN 01, 02, 03, 04, 10, 11		\dashv		
15, 20A, 20B, 25, 26, 27, 61, 62, PHIL 10, 12, 13+, 13H+, PSYC 05	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.0, 0, 0, 0 0,	00, 01, 00, 10,	AA-AS Breadth Courses: ART 12A, 24A, ARTD 41A, 41B, 42A, 42B,	45B. 47. ASLG ()1. 02. 03. E	DRAM 12, 16,	23. MUSA
Area B: Natural Sciences (9 units total)				21B, 25A, 27A, MUSE 44, 45, MUST 01, 02, PHOT 10A, 10B, 11A, 3		., 02, 00, 2		20,
B1 Physical Science (3 units)	Completed	In Progress	Planned	Area D: Social Sciences (6 units total)	Complete	ed In	Progress	Planned
ARCH 01				A minimum of 9 semester units are required with courses in	ı at least two di	sciplines	•	
ASTR 01, 01L				AGBS 11, AGRI 10, ANTH 02, 10, 12				
CHEM 02A, 02B, <mark>04A, 04B</mark>				CLDV 01, 02, COMM 30, CRIM 01				
GEOG 01, 01L, 15			İ	ECON 01, 02				
GEOL 01, 02, 03				ETHN 20, 22, 23				
PHSC 01, 01L, 02				GEOG 02, 12				
PHYS 02A, 02B, 04A, 04B, 04C, 10				HIST 03A, 03B, 04A, 04B, 05, 07, 10, 17A, 17AH, 17B, 17BH,1	9,	\neg		,
SOIL 10			İ	20, 22, 23, 29				
B2 Life Science (3 units)	Completed	In Progress	Planned	HUM 15, NUTR 12, PHIL 02				
ANTH 01				POSC 01, 02, 03, 04				
BIOL 01, 02, 04A, 04B, 06, 09, 16, 18, 20, 32				PSYC 01A, 01AH, 15, 22, 23, 25, 36				
PLSC 10			İ	SOC 01, 02, 03, 04, 06				
PSYC 15				AA-AS Breadth Courses: SOC 05, HIST 09A, 09B				
B3 Laboratory Activity (3 units)	Completed	In Progress	Planned	Area E: Lifelong Understanding and Self-Development (5 units to	otal) Complete	ed In	Progress	Planned
ANTH 01				A minimum of 3 units are required from the following:				
ASTR 01L			İ	ATHL 01D, 01F, 02A, 02B, 02D, 02F, 02G, 02I, 02K				
BIOL 01, 02, 04A, 04B, 16, 18, 20, 32L				CLDV 01, 02				
CHEM 02A, 02B, <mark>04A, 04B</mark>				CLDV/PSYC 09				
GEOG 01L				GUID 30				
GEOL 01, 02, 03				HLTH 10				
PHSC 01L, 02L				KINE 09, 12B, 15, 17, 30, 35, 36, 41, 42				
PHYS <mark>02A, 02B, 04A, 04B, 04C</mark>				NUTR 10				
PLSC 10				PSYC 22, 23, 40				
SOIL 10			İ	REGN 34				
B4 Mathematics/Quantitative Reasoning (3 units)	Completed	In Progress	Planned	AA-AS Breadth Courses: AOM 30, ARTD 47, AUTO 04, BUS 35, CLL	OV 38, CPSC 01,	GUID 48, I	ILTH 15, KIN	IE 01, 03, 04,
CPSC/MATH 07				LAND 11, LRNR 30, MGMT 50A, 50B, 50C, 50D, 50F, 50G, 50H, 50I,				
MATH 02, 02H, 03, 04A, 04B, 04C, 06, 08, 10, 11, 15, 20A, 20B,				51G, 52C, 52D, NUTR 46, PSYC 36, 37, ATHL 01A, 01B, 01G, 01I, 0 23, 24A, 24B, 24C, 31, 32, 33, 34	1J, 01K, 01L, 03	, 13, KINE (06, 12A, 13, 1	4, 16, 19, 20,
25, 26, 27	+		 	Area F: Ethnic Studies (5 units total)	Complete	ed In	Progress	Planned
PSYC 05			<u> </u>	ETHN 20/HIST 20				
AA-AS Breadth Courses: ANSC 10, ELCT 30, GEOG 15				Additional Marks December 14				
Area C: Arts and Humanities (9 units total)				Additional Major Prerequisites		Committee	In Decem	Dlares !
Select one course from each area	Completed	In Dragges	Dlannad	CDSC 06		Completed	In Progres	s Planned
C1 Arts (3 units)	Completed	In Progress	Planned	CPSC <mark>06</mark>			1	+
ART 01, 02, 03, 06, 15	+	1	 	 			+	+
ARTD 07, 08, 40A, 40B	+	-	 	 			-	+
DRAM 01, 08	+	1	 	-				+
ENGL 14, 15	1	Ì	1	1 1			1	1