



2006 – 07 PETITION/PROGRAM SHEET
Degree: Bachelor of Science
Major: Physical Sciences
Concentration: Chemistry
www.mesastate.edu/schools/snsn/chemistry

About This Major . . .

This concentration is a classic chemistry curriculum comparable to those offered at colleges and universities across the nation. It consists of two semesters each of general, organic and physical chemistry, one semester of analytical chemistry and two electives chosen from a list including biochemistry, instrumental analysis, advanced organic and advanced inorganic. Opportunities for student research abound and the physical and environmental sciences department is well equipped with modern chemical instrumentation, including a 300 MHz NMR, liquid chromatograph and an ICP atomic emission spectrophotometer.

Mesa State graduates have been successful in finding jobs in the chemical industry and secondary education, as well as being placed in graduate, pharmacy, and medical schools. As of summer 2006 all of the chemistry majors who have applied to medical school have been successful in being admitted. We have graduates in Ph.D. programs at the University of Denver, Arizona State University, University of Utah and University of Wyoming, in chemistry, biomedical engineering and environmental engineering.

POLICIES:

1. It is your responsibility to determine whether you have met the requirements for your degree. Please see the MSC Catalog for a complete list of graduation requirements.
2. You must turn in your "Intent to Graduate" form to the Registrar's Office **by September 15 if you plan to graduate the following May, and by February 15 if you plan to graduate the following December.**
3. This program sheet must be submitted with your graduation planning sheet to your advisor during the **semester prior to the semester of graduation, no later than October 1 for spring graduates, no later than March 1 for fall graduates.**
4. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature.
5. Finally, the Department Head or the department administrative assistant will take the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
6. If your petition for graduation is denied, it will be your responsibility to reapply for graduation in a subsequent semester. Your "Intent to Graduate" does not automatically move to a later graduation date.
7. NOTE: The semester before graduation, you will be required to take a Major Field Achievement Test (exit exam).

NAME: _____ **STUDENT ID #** _____

LOCAL ADDRESS AND PHONE NUMBER: _____

_____ () _____

I, (Signature) _____, hereby certify that I have completed (or will complete) all the courses listed on the Program Sheet. I further certify that the grade listed for those courses is the final course grade received except for the courses in which I am currently enrolled and the courses which I complete next semester. I have indicated the semester in which I will complete these courses.

Signature of Advisor Date _____ 20____

Signature of Department Head Date _____ 20____

Signature of Registrar Date _____ 20____

- Must earn 120 semester hours and meet the academic residency requirements to earn a baccalaureate degree at Mesa State College.
- Must earn a minimum of 40 semester hours in upper division courses (i.e., 300-level and 400-level courses).
- A cumulative grade point average of 2.0 or higher must be maintained for all courses.
- A "C" or higher is required in all major courses.
- When filling out this program sheet a course can only be used once, i.e., no double counting is allowed between categories.
- Excess KINA/HPWE courses beyond the two required and pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- All degree requirements must be completed as described. Any exceptions or substitutions must be recommended in advance by the faculty advisor and approved by the Department Head.
- It is recommended that students work closely with a faculty advisor when selecting courses and scheduling classes prior to registration.
- Students are required to participate in exit examinations or other programs deemed necessary to comply with the college accountability requirement.

General Education Requirements (Minimum of 33 semester hours) See the M.S.C. catalog for the list of courses that meet the general education categories.

<u>Course</u>	<u>No.</u>	<u>Credit</u>	<u>Grade</u>	<u>Term</u>	<u>Year</u>	<u>Trns/Subs</u>	<u>Course</u>	<u>No.</u>	<u>Credit</u>	<u>Grade</u>	<u>Term</u>	<u>Year</u>	<u>Trns/Subs</u>
English: ENGL 111 and 112 (6 semester hours, must receive a "C" or higher, must be completed by the time the student has 60 semester hours)							Humanities or Social/Behavioral Science: (3 semester hours)						
*ENGL	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
*ENGL	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
*ENGL 129, Honors English, may be substituted for ENGL 111 and ENGL 112. Must earn a grade of "C" or better. May need to take additional electives.							Fine Arts: (3 semester hours)						
Humanities: (6 semester hours)							Natural Sciences: (minimum 6 semester hours, at least one course must include a lab)						
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Social and Behavioral Sciences: (6 semester hours)							Applied Studies: (3 semester hours)						
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

Other Requirements (13 semester hours)

Kinesiology: (3 Semester Hours)							Bachelor of Science Degree Distinction:						
(10 semester hours) Must earn a "C" or better in both courses.													
<u>Course</u>	<u>No.</u>	<u>Credit</u>	<u>Grade</u>	<u>Term</u>	<u>Year</u>	<u>Trns/Subs</u>	<u>Course</u>	<u>No.</u>	<u>Credit</u>	<u>Grade</u>	<u>Term</u>	<u>Year</u>	<u>Trns/Subs</u>
KINE/HPWA	<u>100</u>	<u>1</u>	_____	_____	_____	_____	MATH	<u>151</u>	<u>5</u>	_____	_____	_____	_____
KINA/HPWE	_____	<u>1</u>	_____	_____	_____	_____	MATH	<u>152</u>	<u>5</u>	_____	_____	_____	_____
KINA/HPWE	_____	<u>1</u>	_____	_____	_____	_____							
See the M.S.C. catalog for the list of approved KINA/HPWE/Selected DANC courses.													

Physical Sciences – Chemistry Major Requirements (minimum 52 Semester Hours)

A "C" or higher is required in all major courses.

<u>Course</u>	<u>No.</u>	<u>Credit</u>	<u>Grade</u>	<u>Term</u>	<u>Year</u>	<u>Trns/Subs</u>	<u>Course</u>	<u>No.</u>	<u>Credit</u>	<u>Grade</u>	<u>Term</u>	<u>Year</u>	<u>Trns/Subs</u>
CHEM	<u>131</u>	<u>4</u>	_____	_____	_____	_____	CHEM	<u>312</u>	<u>4</u>	_____	_____	_____	_____
CHEM	<u>131L</u>	<u>1</u>	_____	_____	_____	_____	CHEM	<u>312L</u>	<u>1</u>	_____	_____	_____	_____
CHEM	<u>132</u>	<u>4</u>	_____	_____	_____	_____	CHEM	<u>321</u>	<u>3</u>	_____	_____	_____	_____
CHEM	<u>132L</u>	<u>1</u>	_____	_____	_____	_____	CHEM	<u>322</u>	<u>3</u>	_____	_____	_____	_____
CHEM	<u>211</u>	<u>3</u>	_____	_____	_____	_____	CHEM	<u>341</u>	<u>2</u>	_____	_____	_____	_____
CHEM	<u>211L</u>	<u>1</u>	_____	_____	_____	_____	MATH	<u>253</u>	<u>4</u>	_____	_____	_____	_____
CHEM	<u>311</u>	<u>4</u>	_____	_____	_____	_____	PHYS	<u>131</u>	<u>4</u>	_____	_____	_____	_____
CHEM	<u>311L</u>	<u>1</u>	_____	_____	_____	_____	PHYS	<u>132</u>	<u>4</u>	_____	_____	_____	_____
Restricted Electives: 7 semester hours chosen from CHEM 315/315L, CHEM 396, CHEM 411, CHEM 412, CHEM 421, CHEM 422, CHEM 431/431L, CHEM 482 and 483, or CHEM 496.							PHYS						
							<u>132L</u>						
							<u>1</u>						

Electives (All college level courses appearing on your final transcript, **not listed above** that will bring your total semester hours to 120 hours. Excludes KINA/HPWE activity courses.) (22 semester hours; 15 hours upper division may be needed.)

Course	No.	Credit	Grade	Term	Year	Trns/Subs	Course	No.	Credit	Grade	Term	Year	Trns/Subs
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

GRADUATION INFORMATION

See the “Undergraduate Graduation Requirements” in the Mesa State College catalog for additional graduation information.

GENERAL EDUCATION REQUIREMENTS (Minimum of 33 Semester Hours) See current Mesa State College catalog for list of courses that fulfill the requirements below. If one (or more) of the selections below is required in your major, you must use it to fulfill the major requirement and **make a different selection to meet the general education requirement. The courses may not be used to fulfill both requirements.**

English – 6 Semester Hours (Must be **completed** before student has 60 semester hours. Must receive grade of “C” or above.)
ENGL 111 and ENGL 112 **or** ENGL 129 (*by permission*)

Humanities – 6 semester hours

Social and Behavioral Sciences – 6 semester hours

Humanities or Social/Behavioral Sciences – 3 semester hours

Fine Arts – 3 semester hours

Natural Sciences – 6 semester hours (At least one course must include a lab.)

Applied Studies – 3 semester hours

OTHER REQUIREMENTS (13 Semester Hours)

Kinesiology – 3 Semester Hours

Each student must take KINE/HPWA 100 together with two KINA/HPWE/Selected DANC courses. See current catalog for listing.

Degree Distinction – 10 Semester Hours

MATH 151 Calculus I (5 semester hours)

MATH 152 Calculus II (5 semester hours)

Physical Sciences – Chemistry (52 Semester Hours)

A “C” or higher is required in all major courses.

Required Courses:

CHEM 131 General Chemistry
CHEM 131L General Chemistry Laboratory
CHEM 132 General Chemistry
CHEM 132L General Chemistry Laboratory
CHEM 211 Quantitative Analysis
CHEM 211L Quantitative Analysis Laboratory
CHEM 311 Organic Chemistry
CHEM 311L Organic Chemistry Laboratory
CHEM 312 Organic Chemistry
CHEM 312L Organic Chemistry Laboratory
CHEM 321 Physical Chemistry I
CHEM 322 Physical Chemistry II
CHEM 341 Advanced Laboratory I
MATH 253 Calculus III
PHYS 131 Fundamental Mechanics
PHYS 132 Electromagnetism & Optics
PHYS 132L Electromagnetism & Optics Laboratory

Restricted Electives – 7 semester hours chosen from:

CHEM 315/315L Biochemistry and Laboratory
CHEM 396 Topics
CHEM 411 Main Group Elements
CHEM 412 Transition Elements
CHEM 421 Advanced Organic Chemistry I
CHEM 422 Advanced Organic Chemistry II
CHEM 431/431L Instrumental Analysis and Laboratory
CHEM 482 Senior Research I **and** CHEM 483 Senior Research II
CHEM 496 Topics

General Electives: 22 Semester Hours; 15 hours must be upper division.

Students are required to participate in exit examinations or other programs deemed necessary to comply with the college accountability requirement. All degree requirements must be completed as described above. Any exceptions or substitutions must be recommended in advance by the faculty advisor and approved by the Department Head.

SUGGESTED COURSE SEQUENCING FOR A MAJOR IN PHYSICAL SCIENCES - CHEMISTRY

This is a recommended sequence of course work. Certain courses may have prerequisites or are only offered during the Fall or Spring semesters. It is the student's responsibility to meet with their advisor and check the 2 year course matrix on the Mesa State website for course availability.

FRESHMAN YEAR

Fall Semester	Hours	Spring Semester	Hours
CHEM 131 General Chemistry	4	CHEM 132 General Chemistry	4
CHEM 131L General Chemistry Lab	1	CHEM 132L General Chemistry Lab	1
ENGL 111 English Composition	3	ENGL 112 English Composition	3
MATH 151 Calculus I	5	MATH 152 Calculus II	5
General Education Natural Science with Lab	<u>3-4</u>	General Education Natural Science	3
	16-17	KINE/HPWA 100 Health and Wellness	<u>1</u>
			17

SOPHOMORE YEAR

Fall Semester	Hours	Spring Semester	Hours
CHEM 211 Quantitative Analysis	3	CHEM 312 Organic Chemistry	4
CHEM 211L Quantitative Analysis Lab	1	CHEM 312L Organic Chemistry Lab	1
CHEM 311 Organic Chemistry	4	PHYS 132 Electromagnetism & Optics	4
CHEM 311L Organic Chemistry Lab	1	PHYS 132L Electromagnetism & Optics Lab	1
MATH 253 Calculus III	4	Elective	3
PHYS 131 Fundamental Mechanics	<u>4</u>	General Education Fine Arts	3
	17	KINA/HPWE Activity	<u>1</u>
			17

JUNIOR YEAR

Fall Semester	Hours	Spring Semester	Hours
CHEM 321 Physical Chemistry I	3	CHEM 322 Physical Chemistry II	3
General Education Humanities	3	CHEM 341 Advanced Laboratory I	2
General Education Social/Behavioral Science	6	General Education Humanities	3
Elective	<u>4</u>	General Education Social/Behavioral Science or Humanities	3
	16	KINA/HPWE Activity	1
		Elective	<u>3-4</u>
			15-16

SENIOR YEAR

Fall Semester	Hours	Spring Semester	Hours
General Education Applied Studies	3	Restricted Elective	3
Restricted Elective	4	Unrestricted Upper Division Elective	<u>8</u>
Unrestricted Upper Division Elective	<u>3</u>		11
	10		