



## 2008 – 09 PETITION/PROGRAM SHEET

**Degree: Bachelor of Science**

**Major: Physical Sciences**

**Concentration: Chemistry**

**[www.mesastate.edu/schools/snsn/chemistry](http://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. As of 2007 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. Our graduates have completed 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

\_\_\_\_\_  
Signature of Department Head

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Registrar

\_\_\_\_\_  
Date

**Students should work closely with a faculty advisor when selecting and scheduling courses prior to registration.**

**Degree Requirements:**

- Must earn 120 semester hours total and meet the academic residency requirements to earn a baccalaureate degree at Mesa State College.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- 40 upper division credits (i.e., 300-level and 400-level courses).
- 2.00 cumulative GPA or higher in all MSC coursework
- A "C" or higher is required in all major courses.
- Program sheets are for advising purposes only. Because a program may have requirements specific to the degree, check with your advisor for additional guidelines, including prerequisites, grade point averages, grades, exit examinations, and other expectations. It is the student's responsibility to be aware of, and follow, all guidelines for the degree being pursued. Any exceptions or substitutions must be approved by the faculty advisor and/or Department Head. Courses related to teacher licensure must also be approved by the Teacher Education Dept.
- When filling out the program sheet a course can be used only once.
- See the "Undergraduate Graduation Requirements" in the Mesa State College catalog for additional graduation information.

**GENERAL EDUCATION REQUIREMENTS** (31 semester hours)

See the current Mesa State College catalog for a list of courses that fulfill the requirements below. If a course is on the general education list of options and a requirement for your major, you must use it to fulfill the major requirement and make a different selection within the general education requirement.

Course No Title Sem.hrs Grade Term/Trns

**English** (6 semester hours, must receive a grade of "C" or better and must be completed by the time the student has 60 semester hours.)

ENGL 111 English Composition 3 \_\_\_\_\_

ENGL 112 English Composition 3 \_\_\_\_\_

(ENGL 129, Honors English, may be substituted for ENGL 111 & ENGL 112.)

**Math:** (3 semester hours, must receive a grade of "C" or better, must be completed by the time the student has 60 semester hours.)

MATH 151 Calculus I 5\* \_\_\_\_\_

\*3 credits apply to the General Ed requirements and 2 credits apply to elective credit

**Humanities** (3 semester hours)

\_\_\_\_\_

**Social and Behavioral Sciences** (6 semester hours)

\_\_\_\_\_

\_\_\_\_\_

**Natural Sciences** (7 semester hours, one course must include a lab)

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\_\_\_\_\_

\_\_\_\_\_L\_\_\_\_\_

**History** (3 semester hours)

HIST \_\_\_\_\_

**Fine Arts** (3 semester hours)

\_\_\_\_\_

Course No Title Sem.hrs Grade Term/Trns

**OTHER LOWER DIVISION REQUIREMENTS** (6 semester hours)

**Kinesiology** (3 semester hours)

KINE 100 Health and Wellness 1 \_\_\_\_\_

KINA 1\_\_\_\_\_ 1 \_\_\_\_\_

KINA 1\_\_\_\_\_ 1 \_\_\_\_\_

**Applied Studies** (3 semester hours)

\_\_\_\_\_

**BACHELOR OF SCIENCE DEGREE DISTINCTION**

**REQUIREMENTS** (6 semester hours) Must receive a grade of "C" or better.

MATH 152 Calculus II 5\*\* \_\_\_\_\_

\*\*3 credits apply to the Degree Distinction requirements and 2 credits apply to elective credit

**Humanities or Social/Behavioral Sciences:** (3 semester hours)

\_\_\_\_\_

**PHYSICAL SCIENCES – CHEMISTRY MAJOR**

**REQUIREMENTS** (55 semester hours) A "C" or higher is required in all major courses.

**Core Classes**

CHEM 131 General Chemistry 4 \_\_\_\_\_

CHEM 131L General Chemistry Lab 1 \_\_\_\_\_

CHEM 132 General Chemistry 4 \_\_\_\_\_

CHEM 132L General Chemistry Lab 1 \_\_\_\_\_

CHEM 211 Quantitative Analysis 3 \_\_\_\_\_

CHEM 211L Quantitative Analysis Lab 1 \_\_\_\_\_

CHEM 311 Organic Chemistry 4 \_\_\_\_\_

CHEM 311L Organic Chemistry Lab 1 \_\_\_\_\_

CHEM 312 Organic Chemistry 4 \_\_\_\_\_

CHEM 312L Organic Chemistry Lab 1 \_\_\_\_\_

CHEM 321 Physical Chemistry I 3 \_\_\_\_\_

CHEM 322 Physical Chemistry II 3 \_\_\_\_\_

CHEM 341 Advanced Laboratory I 2 \_\_\_\_\_

MATH 253 Calculus III 4 \_\_\_\_\_

PHYS 131 Fundamental Mechanics 4 \_\_\_\_\_

**OR**

PHYS 111 General Physics 4 \_\_\_\_\_

PHYS 132 Electromagnetism & Optics 4 \_\_\_\_\_

**OR**

PHYS 112 General Physics 4 \_\_\_\_\_

PHYS 132L Electromagnetism & Optics Laboratory 1 \_\_\_\_\_

**OR**

PHYS 112L General Physics Laboratory 4 \_\_\_\_\_

**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, or CHEM 496.

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\_\_\_\_\_

\_\_\_\_\_

| Course   | No    | Title       | Sem.hrs | Grade | Term/Trns |
|--|-------|-------------|---------|-------|-----------|
| <b>Electives</b> (All college level courses appearing on your final transcript, <b>not listed above</b> that will bring your total semester hours to 120 hours.) |       |             |         |       |           |
| (22 semester hours; 15 hours upper division may be needed.)  |       |             |         |       |           |
| *MATH 151  |       | Calculus I  | 2       |       |           |
| *MATH 152  |       | Calculus II | 2       |       |           |
| _____  | _____ | _____       | _____   | _____ | _____     |
| _____  | _____ | _____       | _____   | _____ | _____     |
| _____  | _____ | _____       | _____   | _____ | _____     |
| _____  | _____ | _____       | _____   | _____ | _____     |
| _____  | _____ | _____       | _____   | _____ | _____     |

| Course | No    | Title | Sem.hrs | Grade | Term/Trns |
|--------|-------|-------|---------|-------|-----------|
| _____  | _____ | _____ | _____   | _____ | _____     |
| _____  | _____ | _____ | _____   | _____ | _____     |
| _____  | _____ | _____ | _____   | _____ | _____     |
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| _____  | _____ | _____ | _____   | _____ | _____     |
| _____  | _____ | _____ | _____   | _____ | _____     |

## 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 the assigned 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 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 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 History                   | 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 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       |                                      |          |