



2005 – 06 PETITION/PROGRAM SHEET

Degree: Bachelor of Science

Major: Biological Sciences

Concentration: Biology (Leading to Secondary Teacher Licensure)

www.mesastate.edu/schools/snsn/biology/teaching.htm

About This Major . . .

The Biology Program offers coursework, in conjunction with the Center for Teacher Education, leading to licensure in Secondary Education Science. Graduates of the program may teach locally or elsewhere in the state of Colorado, or may use their teaching expertise in other careers.

The Biology Program provides a broad background in the biological sciences. Students choose biology courses from four areas: Cell, developmental, and molecular biology; anatomical and physiological biology; organismal biology; and ecology, evolution and systematics. Students wishing to obtain teacher certification complete a concentration in Teacher Licensure. The Biology Program also offers field courses on tropical ecosystems in Ecuador and on marine invertebrate communities in Oregon. The Department of Biology operates the only electron microscope facility in the area.

The secondary licensure track program is designed to provide teacher education candidates broad-field content knowledge and train them as future teachers for a grades 7-12 State of Colorado endorsement (teacher license) in this content area. A minimum of 75 credit hours of general education and content area coursework must be completed with a minimum GPA of 2.80 before a candidate may apply for admission to the Center for Teacher Education secondary licensure program. Please see the Teacher Education Admission Packet for further information on admissions criteria.

POLICIES:

- 1. It is your responsibility to determine whether you have met the requirements for your degree. Please see your MSC Catalog for a complete list of graduation requirements.
2. You must go to the Registrar's Office and fill out the "Intent to Graduate" form at the beginning of the semester prior to graduating.
3. This program sheet must be submitted with your graduation planning sheet to your advisor during the semester prior to graduating, no later than September 15 for Spring graduates, February 15 for Fall graduates.
4. Your advisor will sign and forward the Program Sheet, Intent to Graduate Form, 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 125 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 2.8 or higher must be maintained for all courses.
- When filling out this program sheet a course can only be used once, i.e., no double counting is allowed between categories.
- Excess 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. Courses related to teacher licensure must also be approved by the Teacher Education Dept.
- 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.
- Students must PASS the PLACE or PRAXIS II exam in the content area prior to commencing the internship. Also, ALL other coursework toward the degree must be successfully completed prior to the internship.

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.

| Course | No. | Credit | Grade | Term | Year | Trns/Subs | Course | No. | Credit | Grade | Term | Year | Trns/Subs |
|---|------------|--------|-------|-------|-------|-----------|---|-------------|--------|-------|-------|-------|-----------|
| English: ENGL 111 and 112 (6 semester hours, must receive a "B" or better, must be completed by the time the student has 60 semester hours) | | | | | | | Humanities or Social/Behavioral Science: (3 semester hours) | | | | | | |
| *ENGL | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| *ENGL | _____ | _____ | _____ | _____ | _____ | _____ | Fine Arts: (3 semester hours) | | | | | | |
| *ENGL 129, Honors English, may be substituted for ENGL 111 and ENGL 112. Must earn a grade of "B" or better. May need to take additional electives. | | | | | | | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Humanities: (6 semester hours) | | | | | | | Natural Sciences: (minimum 6 semester hours, at least one course must include a lab) | | | | | | |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | BIOL | <u>105</u> | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ | _____ | BIOL | <u>105L</u> | _____ | _____ | _____ | _____ | _____ |
| Social and Behavioral Sciences: (6 semester hours) | | | | | | | Choose two courses from ENV5 101, GEOL 103, GEOL 104, GEOL 105, GEOL 101, PHYS 101 | | | | | | |
| PSYC | <u>233</u> | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| (PSYC 233 required with a grade of "B" or better) | | | | | | | Applied Studies: (3 semester hours) | | | | | | |
| | | | | | | | SPCH | <u>102</u> | _____ | _____ | _____ | _____ | _____ |
| | | | | | | | (SPCH 102 Required with a grade of "B" or better) | | | | | | |

Other Requirements (10 semester hours)

| | | | | | | | | | | | | | |
|--|------------|----------|-------|-------|-------|-----------|---|------------|----------|-------|-------|-------|-----------|
| Human Performance and Wellness: (3 Semester Hours) | | | | | | | Bachelor of Science Degree Distinction: | | | | | | |
| Course | No. | Credit | Grade | Term | Year | Trns/Subs | (7 semester hours) Must earn a "C" or better in both courses. | | | | | | |
| HPWA | <u>100</u> | <u>1</u> | _____ | _____ | _____ | _____ | Course | No. | Credit | Grade | Term | Year | Trns/Subs |
| HPWE | _____ | <u>1</u> | _____ | _____ | _____ | _____ | MATH* | <u>113</u> | <u>4</u> | _____ | _____ | _____ | _____ |
| HPWE | _____ | <u>1</u> | _____ | _____ | _____ | _____ | STAT | <u>200</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| See the M.S.C. catalog for the list of approved HPWE Activity courses. | | | | | | | *Math 113 or higher level math as approved by advisor | | | | | | |

Biology – Lead to Secondary Teacher Licensure Major Requirements (80 Semester Hours)

| Course | No. | Credit | Grade | Term | Year | Trns/Subs | Course | No. | Credit | Grade | Term | Year | Trns/Subs |
|---|-------------|----------|-------|-------|-------|-----------|--|-------------|----------|-------|-------|-------|-----------|
| Required Courses (41 semester hours) | | | | | | | *Choose either GEOL 111/111L or GEOL 113/113L | | | | | | |
| BIOL | <u>106</u> | <u>3</u> | _____ | _____ | _____ | _____ | *GEOL | _____ | <u>3</u> | _____ | _____ | _____ | _____ |
| BIOL | <u>106L</u> | <u>2</u> | _____ | _____ | _____ | _____ | *GEOL | _____ | <u>1</u> | _____ | _____ | _____ | _____ |
| BIOL | <u>107</u> | <u>3</u> | _____ | _____ | _____ | _____ | GEOL | <u>112</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| BIOL | <u>107L</u> | <u>2</u> | _____ | _____ | _____ | _____ | GEOL | <u>112L</u> | <u>1</u> | _____ | _____ | _____ | _____ |
| BIOL | <u>486</u> | <u>3</u> | _____ | _____ | _____ | _____ | PHYS | <u>111</u> | <u>4</u> | _____ | _____ | _____ | _____ |
| CHEM | <u>121</u> | <u>4</u> | _____ | _____ | _____ | _____ | PHYS | <u>111L</u> | <u>1</u> | _____ | _____ | _____ | _____ |
| CHEM | <u>121L</u> | <u>1</u> | _____ | _____ | _____ | _____ | PHYS | <u>112</u> | <u>4</u> | _____ | _____ | _____ | _____ |
| CHEM | <u>122</u> | <u>4</u> | _____ | _____ | _____ | _____ | PHYS | <u>112L</u> | <u>1</u> | _____ | _____ | _____ | _____ |
| CHEM | <u>122L</u> | <u>1</u> | _____ | _____ | _____ | _____ | | | | | | | |

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| Course | No. | Credit | Grade | Term | Year | Trns/Subs | Course | No. | Credit | Grade | Term | Year | Trns/Subs |
|---|-------|--------|-------|-------|-------|-----------|--------|-------|--------|-------|-------|-------|-----------|
| Biology Electives (10 Upper Division Semester Hours) | | | | | | | | | | | | | |
| BIOL | _____ | _____ | _____ | _____ | _____ | _____ | BIOL | _____ | _____ | _____ | _____ | _____ | _____ |
| BIOL | _____ | _____ | _____ | _____ | _____ | _____ | BIOL | _____ | _____ | _____ | _____ | _____ | _____ |
| BIOL | _____ | _____ | _____ | _____ | _____ | _____ | BIOL | _____ | _____ | _____ | _____ | _____ | _____ |
| BIOL | _____ | _____ | _____ | _____ | _____ | _____ | BIOL | _____ | _____ | _____ | _____ | _____ | _____ |

Secondary Education Requirements (29 Semester Hours)

| Course | No. | Credit | Grade | Term | Year | Trns/Subs | Course | No. | Credit | Grade | Term | Year | Trns/Subs |
|---|-------------|----------|-------|-------|-------|-----------|--------|-------------|-----------|-------|-------|-------|-----------|
| *Prerequisites: ENGL 111, ENGL 112, SPCH 102, PSYC 233 (all with a grade of B or better), Declared major in Biology – Leading to Secondary Teacher Licensure | | | | | | | | | | | | | |
| EDUC | <u>211*</u> | <u>2</u> | _____ | _____ | _____ | _____ | EDUC | <u>497</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| EDUC | <u>342</u> | <u>3</u> | _____ | _____ | _____ | _____ | EDUC | <u>497D</u> | <u>1</u> | _____ | _____ | _____ | _____ |
| EDUC | <u>343</u> | <u>3</u> | _____ | _____ | _____ | _____ | EDUC | <u>499G</u> | <u>12</u> | _____ | _____ | _____ | _____ |
| EDUC | <u>442</u> | <u>5</u> | _____ | _____ | _____ | _____ | | | | | | | |

* Students must PASS the PLACE or PRAXIS II exam in the content area prior to commencing the internship. Also, ALL other coursework toward the degree must be successfully completed prior to the internship.

GRADUATION INFORMATION

See the “Undergraduate Graduation Requirements” in the Mesa State College catalog for additional graduation information.
A 2.8 Minimum Cumulative Grade Point Average is required.

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 “B” or above.)
 ENGL 111 **and** ENGL 112 or ENGL 129 (*by permission*)

Humanities – 6 semester hours

Social and Behavioral Sciences – 6 semester hours (PSYC 233 required with a “B” or better.)

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.)
 Choose two courses from PHYS 101, GEOL 103, GEOL 105, GEOL 111/111L, GEOL 112/112L, GEOL 203

Applied Studies – 3 semester hours (SPCH 102 required with a “B” or better.)

OTHER REQUIREMENTS (10 Semester Hours)

Human Performance and Wellness – 3 Semester Hours
 Each student must take HPWA 100 together with two HPWE Activity courses. See current catalog for listing.

Degree Distinction – 7 Semester Hours
 MATH 113 College Algebra (Or a higher level math as approved as approved by advisor) – 4 semester hours
 STAT 200 Probability and Statistics - 3 semester hours

Biology – Leading to Secondary Teacher Licensure (80 Semester Hours)

Required Courses (41 semester hours):

BIOL 106 Principles of Animal Biology
BIOL 106L Principles of Animal Biology Laboratory
BIOL 107 Principles of Plant Biology
BIOL 107L Principles of Plant Biology Laboratory
BIOL 386 Introduction to Science Education
CHEM 121 Principles of Chemistry
CHEM 121L Principles of Chemistry Laboratory
CHEM 122 Principles of Organic Chemistry
CHEM 122L Principles of Organic Chemistry Laboratory
PHYS 111 General Physics
PHYS 111L General Physics Laboratory
PHYS 112 General Physics
PHYS 112L General Physics Lab
GEOL 111/111L Principles of Physical Geology and Laboratory
or GEOL 113/113L Field-Based Introduction to Physical Geology and Laboratory
GEOL 112 Principles of Historical Geology
GEOL 112L Principles of Historical Geology Laboratory

Biology Electives (10 semester hours)

10 semester hours Upper Division Biology Courses

Secondary Education Requirements (29 semester hours)

*Prerequisites: ENGL 111, ENGL 112, SPCH 102, PSYC 233 (all with grade of B or better) and declared major in Biology – Leading to Secondary Teacher Licensure

| | | |
|---|-------------------|--|
| *EDUC 211 Foundations of Education | 2 semester hours | 20 Field Experience Hours |
| EDUC 342 Pedagogy & Assessment: Secondary/K-12 | 3 semester hours | 20 Field Experience Hours |
| EDUC 343 Teaching to Diversity | 3 semester hours | 20 Field Experience Hours |
| EDUC 442 Integrating Literacy Across the Curriculum | 5 semester hours | 60 Field Experience Hours |
| EDUC 497 Content Methodology Practicum | 3 semester hours | 80 Field Experience Hours with EDUC 497D |
| EDUC 497D Methods of Teaching Secondary Science | 1 semester hour | |
| EDUC 499G Teaching Internship and Colloquium | 12 semester hours | 600 Field Experience Hours |

Students must PASS the PLACE or PRAXIS II exam in the content area prior to commencing the internship. Also, ALL other coursework toward the degree must be successfully completed prior to internship.

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, approved by the Department Head. Courses related to teacher licensure must also be approved by the Teacher Education Department.

**SUGGESTED COURSE SEQUENCING FOR A MAJOR IN
BIOLOGY – LEADING TO SECONDARY TEACHER LICENSURE**

FRESHMAN YEAR

| Fall Semester | | Hours | Spring Semester | | Hours |
|----------------------|----------------------------------|--------------|------------------------|-------------------------------------|--------------|
| BIOL 105 | Attributes of Living Systems | 4 | BIOL 106 | Principles of Animal Biology | 3 |
| BIOL 105L | Attributes of Living Systems Lab | 1 | BIOL 106L | Principles of Animal Biology | 2 |
| ENGL 111 | English Composition | 3 | ENGL 112 | English Composition | 3 |
| CHEM 121 | Principles of Chemistry | 4 | CHEM 122 | Principles of Organic Chemistry | 4 |
| CHEM 121L | Principles of Chemistry Lab | 1 | CHEM 122L | Principles of Organic Chemistry Lab | 1 |
| MATH 113 | College Algebra | 4 | STAT 200 | Probability and Statistics | 3 |
| | | <u>17</u> | | | <u>16</u> |

SOPHOMORE YEAR

| Fall Semester | | Hours | Spring Semester | | Hours |
|------------------------------|---------------------------------|--------------|-----------------------------------|---|--------------|
| BIOL 107 | Principles of Plant Biology | 3 | GEOL 111 | Principles of Physical Geology AND | 3 |
| BIOL 107L | Principles of Plant Biology Lab | 2 | GEOL 111L | Principles of Physical Geology | 1 |
| PHYS 111 | General Physics | 4 | OR | | 3 |
| PHYS 111L | General Physics Lab | 1 | GEOL 113 | Field-Based Intro. To Physical Geol. AND | 3 |
| PSYC 233 | Human Growth and Development | 3 | GEOL 113L | Field-Based Intro. To Physical Geol Lab | 1 |
| HPWA 100 | Health and Wellness | 1 | PHYS 112 | General Physics | 4 |
| General Education Humanities | | <u>3</u> | PHYS 112L | General Physics Lab | 1 |
| | | <u>17</u> | General Education Natural Science | | |

JUNIOR YEAR

| Fall Semester | | Hours | Spring Semester | | Hours |
|--|--------------------------------------|--------------|---|---------------------------------------|--------------|
| EDUC 211 | Foundations of Education | 2 | EDUC 342 | Pedagogy & Assessment: Secondary/K-12 | 3 |
| GEOL 112 | Principles of Historical Geology | 3 | EDUC 343 | Teaching to Diversity | 3 |
| GEOL 112L | Principles of Historical Geology Lab | 1 | BIOL 386 | Intro to Science Education | 3 |
| SPCH 102 | Speechmaking | 3 | Electives | Upper Division Biology courses | 3 |
| Electives | Upper Division Biology courses | 4 | General Education Social and Behavioral Science | | <u>3</u> |
| General Education Humanities/Soc. & Behav. Sci | | <u>3</u> | | | |
| | | <u>16</u> | | | |

SENIOR YEAR

| Fall Semester | | Hours | Spring Semester | | Hours |
|-----------------------------|--|--------------|------------------------|--|--------------|
| EDUC 442 | Integrating Literacy Across the Curriculum | 5 | EDUC 499G | Teaching Internship/Colloquium:Secondary | <u>12</u> |
| EDUC 497 | Content Methodology Practicum | 3 | | | |
| EDUC 497D | Methods of Teaching Secondary Science | 1 | | | |
| General Education Fine Arts | | 3 | | | 3 |
| Electives | Upper Division Biology courses | <u>3</u> | | | <u>3</u> |
| | | <u>15</u> | | | |

Praxis Exam (Science) completion