



## 2008 – 09 PETITION/PROGRAM SHEET

Degree: Bachelor of Science

Major: Mathematics

[www.mesastate.edu/schools/snsn/csms](http://www.mesastate.edu/schools/snsn/csms)

### About This Major . . .

The mathematics major will help you to develop problem-solving, logical and critical thinking skills. With this degree you will gain an understanding of the nature of proof, a broad general understanding of mathematics, and a deep understanding of at least one area of mathematics.

Mathematics majors get jobs in a wide variety of areas. Our graduates have worked for local businesses, have run their own businesses, and have worked for scientific companies; others have attended graduate schools such as CU and CSU, and even law school, medical school, and veterinary school. Potential employers believe that if a student is successful in our program, then the student has general problem solving skills that can be altered and adapted to changing situations.

Our students receive individual attention that they might lack at a large research institution. We have high expectations for the quality of their work and support them in their endeavors by providing an ongoing program of careful mentoring. As our society becomes more technologically dependent, it is critical for individual students and for society as a whole to be mathematically competent.

### 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
- 2.50 cumulative GPA or higher in coursework toward the major content area
- 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. Additional electives will be needed to meet the 120 total semester hours.)

**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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**History** (3 semester hours)

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|------|--|--|--|--|--|
| 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.

|          |                            |   |  |  |  |
|----------|----------------------------|---|--|--|--|
| STAT 200 | Probability and Statistics | 3 |  |  |  |
|----------|----------------------------|---|--|--|--|

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

#### MATHEMATICS MAJOR REQUIREMENTS

(45-47 semester hours) A 2.5 GPA is required in the major courses. At most one "D" may be used in completing major requirements.

##### Core Classes

|          |                  |   |  |  |  |
|----------|------------------|---|--|--|--|
| CSCI 111 | Computer Science | 4 |  |  |  |
|----------|------------------|---|--|--|--|

|          |             |   |  |  |  |
|----------|-------------|---|--|--|--|
| MATH 152 | Calculus II | 5 |  |  |  |
|----------|-------------|---|--|--|--|

|          |                               |   |  |  |  |
|----------|-------------------------------|---|--|--|--|
| MATH 240 | Intro to Advanced Mathematics | 4 |  |  |  |
|----------|-------------------------------|---|--|--|--|

|          |              |   |  |  |  |
|----------|--------------|---|--|--|--|
| MATH 253 | Calculus III | 4 |  |  |  |
|----------|--------------|---|--|--|--|

|          |                |   |  |  |  |
|----------|----------------|---|--|--|--|
| MATH 325 | Linear Algebra | 3 |  |  |  |
|----------|----------------|---|--|--|--|

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|----------|---------------------------------|---|--|--|--|
| MATH 452 | Introduction to Real Analysis I | 3 |  |  |  |
|----------|---------------------------------|---|--|--|--|

|          |                    |   |  |  |  |
|----------|--------------------|---|--|--|--|
| MATH 490 | Abstract Algebra I | 3 |  |  |  |
|----------|--------------------|---|--|--|--|

|          |                                  |  |  |  |  |
|----------|----------------------------------|--|--|--|--|
| MATH 453 | Introduction to Real Analysis II |  |  |  |  |
|----------|----------------------------------|--|--|--|--|

##### OR

|          |                     |   |  |  |  |
|----------|---------------------|---|--|--|--|
| MATH 491 | Abstract Algebra II | 3 |  |  |  |
|----------|---------------------|---|--|--|--|

|          |                  |   |  |  |  |
|----------|------------------|---|--|--|--|
| MATH 484 | Senior Seminar I | 2 |  |  |  |
|----------|------------------|---|--|--|--|

|          |                   |   |  |  |  |
|----------|-------------------|---|--|--|--|
| MATH 494 | Senior Seminar II | 2 |  |  |  |
|----------|-------------------|---|--|--|--|

**Four courses from (12-14 semester hours):** MATH 260, MATH 310, MATH 360, MATH 361, MATH 365, MATH 369, MATH 370, MATH 386, MATH 420, MATH 430, MATH 450, MATH 460, MATH 453 **or** MATH 491, MATH 396 **or** MATH 496, STAT 311 (At most one topics course, which must be 3 semester hours, can be used as one of these four courses.)

|      |  |  |  |  |  |
|------|--|--|--|--|--|
| MATH |  |  |  |  |  |
|------|--|--|--|--|--|

|      |  |  |  |  |  |
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| MATH |  |  |  |  |  |
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|      |  |  |  |  |  |
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| MATH |  |  |  |  |  |
|------|--|--|--|--|--|

**Electives** (30-32 semester hours;) (All college level courses appearing on your final transcript, **not listed above** that will bring your total semester hours to 120 hours.) (10-15 upper division hours needed.)

|           |            |   |  |  |  |
|-----------|------------|---|--|--|--|
| *MATH 151 | Calculus I | 2 |  |  |  |
|-----------|------------|---|--|--|--|

Four Courses from the following:

MATH 260 Differential Equations (3)

MATH 310 Number Theory (3)

MATH 360 Methods of Applied Mathematics (3)

MATH 361 Numerical Analysis (4)

MATH 365 Mathematical Modeling (3)

MATH 369 Discrete Structures I (3)

MATH 370 Discrete Structures II (3)

MATH 386 Geometries (4)

(At most one topics class, which must be 3 semester hours, can be used as one of these four courses)

MATH 420 Introduction to Topology (3)

MATH 430 Mathematical Logic (3)

MATH 430 Mathematical Logic (3)

MATH 460 Linear Algebra II (3)

MATH 453 Introduction to Real Analysis II (3) or MATH 491

Abstract Algebra II (3)

MATH 396 Topics (1-3) or MATH 496 Topics (1-3)

STAT 311 Statistical Methods (3)

## SUGGESTED COURSE SEQUENCING FOR A MAJOR IN MATHEMATICS

This is one recommended sequence of course work. This sequence is not unique, there are other sequences that will fulfill the program requirements. 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    |
|---------------------------------------------|------------------------|----------|---------------------------------------------|---------------------|----------|
| MATH 151                                    | Calculus I             | 5        | MATH 152                                    | Calculus II         | 5        |
| ENGL 111                                    | English Composition    | 3        | ENGL 112                                    | English Composition | 3        |
| KINA                                        | Activities (2 courses) | 2        | CSCI 111                                    | Computer Science I  | 4        |
| General Education Natural Science           |                        | 3        | KINE 100                                    | Health and Wellness | 1        |
| General Education Social/Behavioral Science |                        | <u>3</u> | General Education Social/Behavioral Science |                     | <u>3</u> |
|                                             |                        | 16       |                                             |                     | 16       |

### SOPHOMORE YEAR

| Fall Semester                                              |                                      | Hours    | Spring Semester                            |                | Hours    |
|------------------------------------------------------------|--------------------------------------|----------|--------------------------------------------|----------------|----------|
| MATH 240                                                   | Introduction to Advanced Mathematics | 4        | MATH 325                                   | Linear Algebra | 3        |
| MATH 253                                                   | Calculus III                         | 4        | Upper Division Math Choice                 |                | 3        |
| General Education Fine Arts                                |                                      | 3        | General Education Natural Science with Lab |                | 4        |
| General Education History                                  |                                      | 3        | General Education Applied Studies          |                | 3        |
| Degree Distinction Social/Behavioral Science or Humanities |                                      | <u>3</u> | General Education Humanities               |                | <u>3</u> |
|                                                            |                                      | 17       |                                            |                | 16       |

### JUNIOR YEAR

| Fall Semester           |                              | Hours    | Spring Semester            |                               | Hours    |
|-------------------------|------------------------------|----------|----------------------------|-------------------------------|----------|
| MATH 490                | Abstract Algebra I <u>or</u> |          | MATH 491                   | Abstract Algebra II <u>or</u> |          |
| MATH 452                | Intro to Real Analysis I     | 3        | MATH 453                   | Intro to Real Analysis II     | 3        |
| STAT 200                | Probability and Statistics   | 3        | Upper Division Math Choice |                               | 3        |
| Upper Division Elective |                              | 3        | Upper Division Electives   |                               | 6        |
| Electives               |                              | <u>6</u> | Elective                   |                               | <u>3</u> |
|                         |                              | 15       |                            |                               | 15       |

### SENIOR YEAR

| Fall Semester              |                                    | Hours    | Spring Semester            |                   | Hours    |
|----------------------------|------------------------------------|----------|----------------------------|-------------------|----------|
| MATH 452                   | Intro to Real Analysis I <u>or</u> |          | MATH 494                   | Senior Seminar II | 2        |
| MATH 490                   | Abstract Algebra I                 | 3        | Upper Division Math Choice |                   | 3        |
| Upper Division Math Choice |                                    | 3        | Elective                   |                   | <u>6</u> |
| Elective                   |                                    | 3        |                            |                   | 11       |
| Upper Division Elective    |                                    | 3        |                            |                   |          |
| MATH 484                   |                                    | <u>2</u> |                            |                   |          |
|                            |                                    | 14       |                            |                   |          |