UCSC SECONDARY MATH CREDENTIALS (WITH MASTERS)

UCSC offers two secondary mathematics credentials within the MA program:
1. Single Subject Mathematics Credential (pages 1-2)
2. Foundational Level Mathematics Credential (pages 3-4)

1. Single Subject Mathematics Credential

Overview of Requirements

• Mathematics Subject Matter Competency
Subject matter competency in mathematics is a prerequisite to being fully admitted to the secondary single subject MA-credential program in mathematics. Subject matter competency can be demonstrated via coursework or exams. Both routes require, in addition, minimum GPA requirements, and field experience.

OPTION 1A: Subject Matter Competency via Courses
UCSC’s state-approved mathematics subject matter preparation program (SMP) consists of 16-17 undergraduate courses totaling about 78-81 quarter units, depending on course choices. Single subject credential candidates can complete either the UCSC coursework or equivalent coursework taken elsewhere.
Note: If you completed mathematics courses elsewhere, a mathematics department advisor will determine course equivalencies. You may be asked to supply course descriptions for courses taken at other colleges or universities.
Note: The required coursework is not necessarily equal to the requirements for a B.A. in mathematics at UCSC or anywhere else.

OPTION 1B: Subject Matter Competency via CSET exams
As an alternative to completing the coursework, you can demonstrate subject matter competency by passing the three CSET subtests in mathematics.
CSET Exams (Passing scores are valid for 5 years from date of test)
• CSET Subtest I – Algebra and Number Theory
• CSET Subtest II – Geometry and Probability & Statistics
• CSET Subtest III – Calculus and History of Mathematics
Information about the CSET exams is available online.

Single Subject applicants:
- Admitted applicants must submit verification of having passed the California Subject Examinations for Teachers (CSET), examination for mathematics or confirmation of 100 percent completion of an approved subject matter program.
- Deadline to complete this requirement: June 10th of each year (prior to official enrollment in the program). However, it is highly recommended that documentation of subject matter competence be submitted with the application.
- Exam registration confirmations and/or exam score reports must be submitted at the time of application via the online application.

• Field Experience (see page 5)
Please Note: In our many years of collective experience, we have found that secondary mathematics credential candidates benefit dramatically from having taken at least a small number of college level mathematics coursework prior to entering a credential program. Although there are no specific requirements, we recommend mathematics courses from the list below that will broaden and deepen your knowledge of mathematics as well as help you prepare for the CSET exams. In general, we recommend:

- Two quarters (or semesters) of calculus, plus
- Three (or more) upper division mathematics courses, plus
- Any course titled “Mathematics for Secondary Teachers,” at UCSC this course is EDUC 185B-Introduction to Mathematics Education.

**Recommended Mathematics Coursework at UCSC for Single Subject Credential**
A total of 6 courses (a total of 30 quarter credits, 5 units each or approximately 16 semester units) with at least a 2.75 GPA in those courses, including 3 (or more) upper divisions courses:

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>At UCSC: EDUC 185B-Introduction to Math Education (or a course titled Mathematics for Secondary Teachers)</td>
</tr>
<tr>
<td>Plus a selection of three (or more) upper division courses from this list.</td>
<td>Possible Course Choices (pick at least 3):</td>
</tr>
<tr>
<td></td>
<td>Mathematical Problem Solving</td>
</tr>
<tr>
<td></td>
<td>Intro to Proof and Problem Solving</td>
</tr>
<tr>
<td></td>
<td>Number Theory</td>
</tr>
<tr>
<td></td>
<td>Complex Analysis</td>
</tr>
<tr>
<td></td>
<td>Real Analysis</td>
</tr>
<tr>
<td></td>
<td>Abstract Algebra</td>
</tr>
<tr>
<td></td>
<td>Classical Geometry</td>
</tr>
<tr>
<td></td>
<td>History of Mathematics</td>
</tr>
<tr>
<td></td>
<td>Probability</td>
</tr>
<tr>
<td></td>
<td>Statistics</td>
</tr>
</tbody>
</table>

**Grade Point Average (GPA) Requirements**
- A minimum GPA of 3.00 overall for all college and university courses
- A minimum GPA of 2.75 for all mathematics courses
- A minimum GPA of 2.75 for all upper division mathematics courses

**Recommended Mathematics Coursework at SJSU**
Math 30 Calculus 1 (or an equivalent course at a local community college)
Math 31 Calculus 2 (or an equivalent course at a local community college)
Math 42 Discrete Math (or an equivalent course at a local community college)
Math 129A Linear Algebra (or an equivalent course at a local community college)
Math 126 Number Theory
Math 115 Modern Geometry and Transformations
Math 161A Applied Statistics
Math 104 History of Mathematics
Math 201A Mathematics for Secondary Teachers
2. **Foundational Level Mathematics Credential**

**DEFINITION**

The FOUNDATIONAL credential allows candidates to teach middle school mathematics and some high school mathematics including general mathematics, algebra, geometry, probability and statistics, and consumer mathematics.

The FLM authorizes the holder to teach the following content areas: general mathematics, all levels of algebra, geometry, probability and statistics, and consumer mathematics. Calculus and math analysis classes are outside the scope of the authorization. The authorization that appears on the Single Subject in Foundational-Level Mathematics appears below:

*This document authorizes the holder to teach the content areas in general mathematics, algebra, geometry, probability and statistics, and consumer mathematics in grades twelve and below, including preschool, and in classes organized primarily for adults.*

Trigonometry is not included in the authorization for FLM. If the content of a pre-calculus (or any other math) class has a significant focus in trigonometry, the FLM credential does not authorize such an assignment. It is important to note that it is likely that some introduction to trigonometry might occur at the end of an algebra or geometry class. This introduction of trigonometry in an algebra or geometry class is authorized by the FLM credential. An introduction to the next progression area of math does not require an authorization in the introduced area of math.

**Overview of Requirements**

- **Mathematics Subject Matter Competency**
  Subject matter competency in mathematics is a prerequisite to being fully admitted to the secondary Foundational Level MA-credential program in mathematics. Subject matter competency can be demonstrated via coursework or exams. Both routes require, in addition, minimum GPA requirements, and field experience.

**Subject Matter Preparation Required for Foundational Level Credential:**

**OPTION 2A:** Completion of an approved foundational-level mathematics subject matter program (SMP). This is a set of undergraduate courses approved by the state of California. UCSC does not currently have a foundational level SMP (one is in progress for the future).

**OPTION 2B:** Passing CSET Foundational Mathematics (2 Sections)

**OPTION 2B: Subject Matter Competency via CSET exams**

You can demonstrate subject matter competency for the Foundational Level Mathematics Credential by passing the TWO CSET subtests in mathematics (Passing scores are valid for 5 years from date of test)

- CSET Subtest I – Algebra and Number Theory
- CSET Subtest II – Geometry and Probability & Statistics

Information about the CSET exams is available online.

**Foundational Level applicants:**
- Admitted applicants must submit verification of having passed the California Subject Examinations for Teachers (CSET), examination for mathematics or confirmation of 100 percent completion of an approved subject matter program.
- **Deadline to complete this requirement:** June 10th of each year (prior to official enrollment in the program). However, it is highly recommended that documentation of subject matter competence be submitted with the application.
- Exam registration confirmations and/or exam score reports must be submitted at the time of application via the online application.

- **Field Experience (see page 5)**
Please Note: In our many years of collective experience, we have found that secondary mathematics credential candidates benefit dramatically from having taken at least a small number of college level mathematics coursework prior to entering a credential program. Although there are no specific requirements, we recommend mathematics courses from the list below that will broaden and deepen your knowledge of mathematics as well as help you prepare for the CSET exams. In general, we recommend:

- Two quarters (or semesters) of calculus, plus
- Three upper division mathematics courses, plus
- Any course titled “Mathematics for Secondary Teachers,” at UCSC this course is EDUC 185B-Introduction to Mathematics Education.

Recommended Mathematics Coursework at UCSC: A total of 5 courses (a total of 25 quarter credits, 5 units each or approximately 16 semester units) with at least a 2.75 GPA in those courses, including 2 upper divisions courses:

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>At UCSC: EDUC 185B-Introduction to Math Education (or a course titled Mathematics for Secondary Teachers)</td>
</tr>
<tr>
<td>Plus a selection of two upper division courses from this list.</td>
<td><strong>Possible Course Choices (pick at least 2):</strong></td>
</tr>
<tr>
<td></td>
<td>Mathematical Problem Solving</td>
</tr>
<tr>
<td></td>
<td>Intro to Proof and Problem Solving</td>
</tr>
<tr>
<td></td>
<td>Number Theory</td>
</tr>
<tr>
<td></td>
<td>Complex Analysis</td>
</tr>
<tr>
<td></td>
<td>Real Analysis</td>
</tr>
<tr>
<td></td>
<td>Abstract Algebra</td>
</tr>
<tr>
<td></td>
<td>Classical Geometry</td>
</tr>
<tr>
<td></td>
<td>History of Mathematics</td>
</tr>
<tr>
<td></td>
<td>Probability</td>
</tr>
<tr>
<td></td>
<td>Statistics</td>
</tr>
</tbody>
</table>

Grade Point Average (GPA) Requirements

- A minimum GPA of 3.00 overall for all college and university courses
- A minimum GPA of 2.75 for all mathematics courses
- A minimum GPA of 2.75 for all upper division mathematics courses

Recommended Mathematics Coursework at SJSU

Math 30 Calculus 1 (or an equivalent course at a local community college)
Math 31 Calculus 2 (or an equivalent course at a local community college)
Math 42 Discrete Math (or an equivalent course at a local community college)
Math 129A Linear Algebra (or an equivalent course at a local community college)
Math 126 Number Theory
Math 115 Modern Geometry and Transformations
Math 161A Applied Statistics
Math 104 History of Mathematics
Math 201A Mathematics for Secondary Teachers
Field Experience
Documented field experience in a formal or informal educational setting with youth at the same age level the candidate aspires to teach.

Experiences such as directed observation, substitute teaching, work in after-school programs, camp counseling, instructional aide, or the equivalent are acceptable experiences. When applying to the program, please describe your field experience in the designated area of the application titled Statement of Purpose. The primary purpose is to provide you with a recent extended experience with youth in a secondary school mathematics classroom to help you decide if you are truly interested in pursuing a career in teaching. This experience can be satisfied by coursework involving a field experience component (for example, in UCSC’s Cal Teach seminars or in SJSU’s Math 201A), or by arranging on your own to assist in a public school secondary mathematics classroom.