

## 1. What course content is required for your prospective teachers?

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### California State University, Bakersfield (Quarter System)

#### *Mathematics Courses Required for Single Subject Teaching Credential*

The proposed subject matter program in mathematics consists of eighteen courses for a total of 79 units.

First year Calculus	Math 211, 212
Second year Calculus	Math 213, 214
Laboratory Experience	Math 222, 223
Sets and Logic	Math 300
Linear Algebra	Math 330
Algebraic Structures	Math 331
Probability	Math 340
Real Analysis I	Math 363
Statistics	Math 341
Modern Geometry	Math 420
Modern Math for Teachers	Math 425
Number Theory	Math 430
History of Mathematics	Math 450
Senior Seminar for Teachers	Math 491
Early Field Experience in the Secondary School	EDSE 241

The required mathematics courses listed above provide both breadth and depth in important areas in mathematics. In addition, one computer science cognate course, Pascal (CS 212), and two science cognate courses are required for the major.

### California State University, Chico (Semester System)

#### *Mathematics Courses Required for Single Subject Teaching Credential*

<b>Course Number</b>	<b>Course Title</b>	<b>UNITS</b>
Math 007A	Analytical Geometry & Calculus	4
Math 007B	Analytical Geometry & Calculus	4
Math 007C	Analytical Geometry & Calculus	4
Math 100	Methods of Proof	3
Math 102	History of Math	3
Math 103	Conceptual and Practical Statistics	3
Math 114A	Math Topics for Credential	3
Math 135	Elementary Linear Algebra	3
Math 201*	College Geometry	3
Math 228A*	Advanced Calculus	3
Math 237*	Modern Algebra 3	3
Math 250*	Introduction to Number Theory	3
Math 266*	Combinatorial Mathematics & Graph Theory	3
<b>TOTAL</b>		<b>42</b>

\* Math 100 must be taken prior to the 200 level math courses listed here.

<u>Additional Courses:</u>	<u>Units</u>
Computer Requirement, ONE of the following:	
CSCI 15A, 50, 54 or 65;	3
OR	
Math 65 or 95	3
<b>Elective:</b>	
Math 7D or any additional upper division course	3 - 4
(except Math 112, 113, 151, 152, 153, 154, 155, 215 or 315)	
<b>TOTAL</b>	<b>48—49</b>

**California State University, Dominguez Hills** (Semester System)

*Mathematics Courses Required for Mathematics Education Option in the Mathematics Major (66 units)*

Single field major—no minor required. This option will satisfy the subject matter preparation necessary for a secondary teaching credential in mathematics. All courses used to satisfy this option must be passed with a grade of “C” or better.

Students not seeking a degree in mathematics, but wishing to satisfy the requirements for the teaching credential in mathematics must take at least nine (9) units of upper division mathematics at CSUDH, including MAT 490.

<b><i>Common Core Requirements</i></b>			<b><i>34 units</i></b>
<b>Lower Division Required Courses</b>			<b>(25 units)</b>
MAT	191	Calculus I	4
MAT	193	Calculus II	4
MAT	211	Calculus III	4
MAT	271	Foundations of Higher Mathematics	3
PHY	130	General Physics I	5
PHY	132	General Physics II	5
<b>Upper Division Required Courses</b>			<b>(9 units)</b>
MAT	331	Linear Algebra	3
MAT	333	Abstract Algebra	3
MAT	411	Mathematical Modeling	3
<b><i>Courses for the Mathematics Education Option</i></b>			<b><i>32 units</i></b>
<b>Lower Division Required Courses</b>			<b>(14 units)</b>
CSC	101	Computer Applications for Scientists	2
MAT	141	Computers for Mathematics Teaching	3
MAT	143	Problem Solving in Mathematics	3
MAT	281	Discrete Mathematics	3
<b>Upper Division Required Courses</b>			<b>(18 units)</b>
MAT	321	Probability and Statistics	3
MAT	347	Modern Geometry	3
MAT	443	History of Mathematics	3
MAT	447	Number Theory	3
MAT	490	Seminar in Mathematics Education	3
TED	305	Introduction to Urban/ Multicultural Classroom	1
TED	415	Multicultural Perspectives for Teachers	2

**California State University, Fresno** (Semester System)

*Mathematics Courses Required for Single Subject Teaching Credential*

COURSES		UNITS
Math 75	Mathematical Analysis I	4
Math 76	Mathematical Analysis II	4
Math 77	Mathematical Analysis III	4
Math 101	Statistical Methods	4
Math 114	Discrete Structures	3
Math 116	Theory of Numbers	4
Math 143	History of Mathematics	4
Math 145	Problem Solving	3
Math 151	Principles of Algebra	4
Math 152	Linear Algebra	4
Math 161	Principles of Geometry	3
Math 171	Intermediate Mathematical Analysis I	4
Math 128	Applied Complex Analysis or	
Math 165	Differential Geometry or	
Math 172	Intermediate Mathematical Analysis II	3—4

**BREADTH REQUIREMENT IN SUBJECT MATTER PREPARATION**

CSCI 40	INTRO TO PROGRAMMING & PROBLEM SOLVING	4
PHYSICS 4A	ELEMENTARY PHYSICS	3
<b>TOTAL</b>		<b>55—56</b>

**CREDENTIAL PROGRAM ADMISSION EDUCATION COURSE REQUIREMENT**

EHD	50	Introduction to Teaching	2
<b>Professional Education Course Requirements</b>			
ERF	151	Social Foundations of Education	3
ERF	152	Psychological Foundations of Education	3
CTET	159	Curriculum and Instruction	3
CTET	161	Methods and Materials in Secondary Teaching	3
LEE	156S	Content Area Reading in the Secondary Schools	3
EHD	155A	Student Teaching in Secondary School	5
EHD	155B	Student Teaching in Secondary School	10

**Additional Course Requirements for the Clear Credential**

H S	121	Secondary School Health Science Education	2
SPED	160	Mainstreaming Exceptional Students	3
CTET	101	Educational Applications of Microcomputers	?

**California State University, Fullerton** (Semester System)

*Mathematics Courses Required for Single Subject Teaching Credential*

<b><u>Programming Requirement (3 units)</u></b>		
One of the following:		
CPSCI 121	Programming Concepts	3
ECCN 205	Digital Computation	
Math 320	Introduction to Mathematical Computation	
<b><u>Core Requirements (27 units):</u></b>		
Math 150A, B	Analytic Geometry & Calculus	4, 4
Math 250A	Intermediate Calculus	4
Math 250B	Intro to Linear Algebra & Differential Equations	4
Math 280	Strategies of Proof	2
Math 307	Linear Algebra	3
Math 335	Mathematical Probability	3
Math 350A	Advanced Calculus	3
<b><u>Teaching Mathematics Concentration (18 units)</u></b>		
Math 302	Modern Algebra	3
Math 370	Mathematical Model Building	
Or		3
Math 375	Discrete Dynamical Systems and Chaos	
Math 401	Algebra & Probability for Secondary Teachers	3
Math 402	Logic & Geometry for Secondary Teachers	3
<b><u>Two courses from the following two groups:</u></b>		
Math 414	Topology	
Or		3
Math 417	Foundations of Geometry	
Math 435	Mathematical Statistics	
Or		3
Math 438	Introduction to Stochastic Processes	
Or		
Math 470	Advanced Mathematics Model Building	
<b><u>Writing Requirement (3 Units)</u></b>		
Math 380	History of Mathematics	3

**California State University, Hayward (Quarter System)**

*Mathematics Courses Required for Single Subject Teaching Credential*

COURSE		UNITS
Math 1300	Trigonometry & Analytic Geometry	4
Math 1304	Calculus I	4
Math 1305	Calculus II	4
Math 2101	Elements of Linear Algebra	4
Math 2150	Discrete Structures	4

Math 2304	Calculus III	4
Math 3121	Abstract Algebra I	4
Math 3215	Geometry I	4
Math 3600	Number Theory	4
Math 4040	History of Mathematics	4
Math 4901	Senior Seminar	2
Stat 2010	Elements of Statistics for Business & Economics	5
Stat 3401	Introduction to Probability Theory	4
<b>TOTAL</b>		<b>51</b>

<b>Coursework Providing Breadth and Perspective</b>		
a) Additional advanced courses that require calculus as a prerequisite		
Math 3300	Analysis I	4
Math 3331	Differential Equations	4
b) One course in computer science course		
CS 1160	Introduction to Computer Science and Programming Methods	4
c) Field experiences related to mathematics: One course chosen from the following, or other field experience approved by the Mathematics Subject Matter Preparation Adviser:		
Math 3898	Cooperative Education (requires a minimum of 100 hours of Co-op work)	2
Math 4900	Independent Study (in tutoring) (requires a minimum of 60 hours of tutoring in the Departmental Math Lab)	2

***Hayward continued***

d) Additional courses to bring the total Breadth and Perspective units to 22, chosen from the following list or from other related courses approved by the Mathematics Subject Matter Preparation Adviser:		
Chem 1101	General Chemistry	5
Chem 1102	General Chemistry	5
Chem 1103	General Chemistry	5
CS 1020	Introduction to Computers	4
CS 2360	Programming Methodology and Introduction to Software Engineering	4
CS 2430	Computer Organization and Assembly Language Programming	4
Econ 2301	Principles of Microeconomics	4

Econ 2302	Principles of Macroeconomics	4
Math 3100	Linear Algebra	4
Math 3122	Abstract Algebra II	4
Math 3301	Analysis II	4
Math 4215	Topics in Geometry	4
Mgmt. 3100	Intro to Quantitative Methods in Business	5
Phil 1001	Introduction to Logic	4
Phil 3002	Modern Logic	4
Phys 1001	General Physics	5
Phys 1002	General Physics	5
Phys 1003	General Physics	5
Stat 3502	Statistical Inference I	4
Total units of courses providing breadth and perspective		22
<b>TOTAL</b>		<b>73</b>

**Humboldt State University** (Semester System)

*Mathematics Courses Required for Single Subject Teaching Credential*

Course		Units
Math 109	Calculus I	4
Math 110	Calculus II	4
Math 210	Calculus III	4
Math 240	Introduction to Mathematical Thought	3
Math 241	Elements of Linear Algebra	2
Math 301*	Mathematics and Culture: A Historical Approach (meets Diversity and Common Ground requirement)	3
Or Math 401*		3
Stat 323*	Probability and Mathematical Statistics	4
Math 340*	Number Theory	3
Math 343*	Introduction to Algebraic Structures	4
Math 344*	Linear Algebra	3
Math 317*	Geometry	3
Math 407*	Senior Seminar: School Mathematics from an Advanced View-Point	3
Or, Course in computer programming (E.g.: Basic, C++, Fortran, Java, Pascal)		

Additional approved courses must be taken to bring the total number of upper division units to a minimum of 26. Recommended electives include: Math 415\* (Introduction to Real Analysis), Math 474\* (Graph Theory), Math 361\* (Modeling).

An advisor-approved coherent program of not less than 8 units in a field of study to which mathematics is applicable is also required. Physics 109 and 110 are recommended for this purpose

An advisor-approved coherent program	8
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The following courses are not required but are strongly recommended:

Math 481*	Workshop in Tutoring Math	1
Philosophy 100	Logic (Meets Area A General Education)	3
Art 105B	Beginning Representational Drawing (Meets Area C General Education)	3
Journalism 232	Technical Writing	3

\*Courses so marked are upper division courses.

**California State University, Long Beach** (Semester System)

*Mathematics Courses Required for Single Subject Teaching Credential*

<b>Lower Division (21 units)</b>		
Math 122	Calculus I	4
Math 123	Calculus II	4
Math 224	Calculus III	4
Math 233	Fundamental Concepts for Advanced Math	3
Math 247	Introduction to Linear Algebra	3
<b>One of the following: (3 units)</b>		
CECS 174	Programming & Problem Solving I	3
CECS 242	Computer Methods I	3
Math 278*	Computer Applications in Math for Teachers	3
<b>Upper Division (30 units)</b>		
Math 310	History of Mathematics	3
Math 341	Number Theory	3
Math 355	College Geometry	3
Math 361A*	Introduction to Mathematics Analysis I	3
Or		
Math 364A	Ordinary Differential Equations	3
Math 380	Probability and Statistics	3
Math 381	Mathematics Statistics	3
Math 410	History of Modern Mathematics	3
Math 411	Topics in Secondary Math	3
Math 444	Introduction to Higher Algebra	3
Upper division mathematics elective		3

\* denotes preferred courses

**California State University, Los Angeles (Quarter System)**

Students seeking a Single Subject Credential in Mathematics for secondary teaching from the State of California may complete the following program of course work (or its equivalent taken at another institution). Students should also consult advisors in the School of Education regarding required work in education, examinations, practice teaching, credentialing procedures, etc.

<b>Required Courses in Mathematics, Computer Science, and Physics</b>		<b>Units</b>
MATH 102	College Algebra	4
MATH 103	Algebra & Trigonometry	4
MATH 206-209	Calculus I - IV	4-4-4-4
MATH 255	Introduction to Matrix Theory	4
MATH 320	History of Mathematics	4
MATH 325	Mathematical Notation & Proof	4
MATH 248	Discrete Mathematics	4
MATH 398	Observation and Tutoring	1-1-1
MATH 430	Modern Geometry	4
MATH 446	Number Theory	4
MATH 455	Modern Algebra I	4
MATH 465	Advanced Calculus I	4
MATH 474	Theory of Probability	4
MATH 490	Senior Seminar	4
CS 290 CS 201	Intro to FORTRAN Programming Or Intro to Programming	2 4
PHYSICS 201, 202	General Physics	4, 4

Electives: Choose at least 12 units from the following related areas:

- BIOLOGY                           302, 315, 408
- COMPUTER INFORMATION SYSTEMS   228, 283, 294
- CHEMISTRY                       101, 122, 123, 401, 402, 403, 414
- COMPUTER SCIENCE   240, 340 *Either of 201 or 290 not selected above*
- ECONOMICS                       209, 309, 310, 391, 403, 409, 410, 413, 414
- ENGINEERING                    201, 202, 204, 209, 306, 326A, 344, 345
- MATHEMATICS                    215, 420, 456, 457, 466, 470, 472, 475
- PHILOSOPHY                      250, 404, 405, 406
- PHYSICS                          203-206, 410AB, 427, 428, 432, 488

(Mathematics 466 is strongly recommended for those who may be teaching advanced placement calculus classes.)

**California State University, Northridge (Semester System)**

**ACADEMIC PROGRAM MATHEMATICS**

<b>COURSE TITLE</b>		<b>UNITS</b>
<u>Lower Division</u>		
Math 150A	Mathematical Analysis I	5
Math 150AL	Calculus Laboratory I	1
Math 150B	Mathematical Analysis II	5
Math 150BL	Calculus Laboratory II	1
Math 250	Mathematical Analysis III	3
Math 262	Introduction to Linear Algebra	3
Phys 220A & AL	Mechanics & Mechanics Lab	4
Phil 230	Symbolic Logic I	4
Comp 110/106L	Computing in Engineering and Sciences	3
Or		
Comp 110/110L	Introduction to Algorithms & Programming	
<b>Lower Division Units</b>		<b>29</b>
<u>Upper Division</u>		
Math 320	Foundations of Higher Math	3
Math 364	Elementary Modern Algebra	3
Math 373	Modern Geometry	3
Math 391	Field Experience in the Public Schools	2
Math 411	Foundations of Geometry	3
Math 412	Foundations of Algebra	3
Math 441	Introduction to Statistical Inference	3
Math 490	Seminar in History of Mathematics	3
Electives	Choices from Mathematics, Physics, Health Science, Management Science	3-4
<b>Upper Division Units</b>		<b>26–27</b>
<b>Total Units</b>		<b>55–56</b>

The **BA Option II: Teaching** major in mathematics also includes Physics 220B & BL (Electricity and Magnetism) and SEd 525MA (Methods in Teaching Mathematics).

**California State Polytechnic University, Pomona** (Quarter System)

**MATHEMATICS SUBJECT MATTER  
PREPARATION PROGRAM  
RECOMMENDED PROGRAM**

Mat 114	Analytic Geometry and Calculus I
Mat 115	Analytic Geometry and Calculus II
Mat 116	Analytic Geometry and Calculus II
Mat 201	Introduction to Numerical Methods
Mat 208	Introduction to Linear Algebra
Mat 214	Calculus of Several Variables

Mat 215	Calculus of Several Variables
Mat 306	History of Math
Mat 310	Introduction to Logic and Set Theory
Mat 314	Intermediate Analysis I
Mat 325	Introduction to Number Theory
Mat 330	Modern Euclidean Geometry
Mat 415 Or Mat 416	Foundations of Geometry Projective Geometry
Mat 417	Modern Algebra I
Mat 418	Modern Algebra II
Mat 495	Topics & Issues in Contemporary Secondary School Math
Mat 496	Topics & Issues in Contemporary Secondary School Math
Mat 497	Topics & Issues in Contemporary Secondary School Math
STA 330	Applied Probability Theory
STA 331	Applied Statistics
CS 128	C++

**California State University, Sacramento** (Semester System)

*Mathematics Courses Required for Single Subject Teaching Credential*

<b>Course</b>		<b>Units</b>
Math 30	Calculus I	4
Math 31	Calculus II	4
Math 32	Calculus III	4
Math 35	Introduction to Linear Algebra	3
Math 45	Differential Equations	4
Math 102	Number Theory	3
Math 108	Intro to Formal Mathematics	3
Math 110A	Modern Algebra	3
Math 110B	Modern Algebra	3
Math 121	Euclidean Geometry	3
Math 130A	Advanced Calculus	3

Math 130B	Advanced Calculus	3
Math 190	History of Mathematics	3
Math 193	Capstone Course	3
<b>TOTAL</b>		<b>46</b>
<u>Additional Courses:</u>		
CSci 10, 22, or 25		2–3
Stat 1	Introduction to Statistics	3
	<b>Total</b>	<b>5–6</b>

*The Mathematics Blended Program (for achieving a California Credential in 5 years) has the following additional courses:*

Math 198	Tutoring Seminar Or
EDTE 100	Observation and Participation in Schools
EDBM 105	Multicultural Education
EDTE 106	Educational Psychology
EDTE 384	Reading
EDTE 380	Secondary Teaching (A Common Field Experience for Math 193, EDTE 384, EDTE 380)
EDTE 386	Math Methods
Student Teaching (2 Semesters)	

**California State University, San Bernardino (Quarter System)**

*Mathematics Courses Required for Single Subject Teaching*

<b>Course</b>		<b>Units</b>
Math 211	Basic Concepts in Calculus	4
Math 212	Calculus II	4
Math 213	Calculus III	4
Math 241	Problem Solving in Calculus	2
Math 251	Multivariable Calculus I	4
Math 252	Multivariable Calculus II	4
Math 331	Linear Algebra	4
Math 345	Number Theory and Proof	4
Math 355	Analysis and Proof	4
Math 372	Combinatorics	4
Math 465	Probability Theory	4
Math 545	Abstract Algebra I	4
Math 553	Analysis I	4

<b>Total</b>	<b>50</b>
Math Electives – 5 additional courses	20
(*Math 480      Topics in History of Mathematics)	4)
(*Math 529      Advanced Geometry)	4)
Additional course in computing	4
<b>TOTAL</b>	<b>24</b>

\*These are to be taken as Math electives in order to satisfy the requirements for the California Single Subject Credential in Math

### San Diego State University (Semester System)

#### *Mathematics Courses Required for Single Subject Teaching Credential*

<b>Courses</b>	<b>Units</b>
Math 150      Single Variable Calculus	5
Math 151      Calculus & Analytical Geometry	4
Math 252      Multivariate Calculus	4
Math 245      Discrete Mathematics	3
Math 254      Introduction to Linear Algebra	3
Math 302      Basic Mathematical Concepts	3
Math 357      Probability and Statistics	3
Math 414      Mathematics Curriculum and Instruction	3
Math 510      Intro to the Foundations of Geometry	3
Or	
Math 511      Projective Geometry	
Or	
Math 512      Non-Euclidean Geometry	
Math 521A      Abstract Algebra	3
Math 534A      Advanced Calculus I	3

CS 107	Introduction to Computer Programming	3
Or		
CS 205	Introduction to Computational Analysis	
Two additional upper division electives in math		6
<b>Total</b>		<b>46</b>

**San Francisco State University** (Semester System)

*SUBJECT MATTER PREPARATION PROGRAM IN  
MATHEMATICS*

A minimum grade point average of 2.75 is required in the following courses (or their equivalents).

<b>CORE</b>		<b>UNITS</b>
Math 226-228	Calculus I-III	4-4-4
Math 300	History of Mathematics	3
Math 310	Elementary Number Theory	3
Math 335	Modern Algebra	3
Math 325	Linear Algebra	3
Math 350	Geometry	3
ONE of the following:		
Math 324	Probability and Statistics with Computing	3
Math 441	Mathematical Statistics*	3
<b>Total</b>		<b>33</b>

<b>BREADTH and PERSPECTIVE</b>		
Math 301	Exploration and Proof	3
Math 376	Ordinary Differential Equations I	3
Math 460	Mathematical Modeling	3
Math 490	Mathematics Seminar	3
Math 699	Special Study in Mathematics**	1

ONE of the following:		
Math 309	Computation in Mathematics	3
CSc 201*	Introduction to Computer Programming For Non-majors	3
<b>Total</b>		<b>16</b>

\* Math 340 Introduction to Probability is a prerequisite.

\*\* Early field experience in mathematics; may be waived with approval of the Mathematics Department's Credential Advisor.

### San Jose State University (Semester System)

#### *Mathematics Courses Required for Single Subject Teaching Credential*

Course		Units
Math 42	Discrete Math	3
Math 30	Calculus I	3
Math 31	Calculus II	3
Math 32	Calculus III	3
Or		
Math 131A	Real Analysis	(3)
Or		
Math 133A	Differential Equations	(3)
Math 104	History of Mathematics	3
Math 115	Modern Geometry and Transformations	3
Math 126	Theory of Numbers	3
Or		
Math 201B	Mathematics for Secondary Teachers	(3)
Math 128A	Abstract Algebra I	3
Math 129A	Linear Algebra I	3
Math 201A	Math for Secondary Teachers	3
Math 161	Applied Statistics	3
Or		
Math 164	Mathematical Statistics	(3)
Math 163	Probability Theory	3
<b>Core Total</b>		<b>36</b>

<b>Three from the following:</b>	<b>9</b>
Physics 60, 61, 62,	2-4-4
Math 196N (Integrated Math & Science),	3
Math 143M (Numerical Analysis),	3
Math 177 (Linear and Nonlinear Programming),	3
Math 178 (Modeling)	3

<b>One of the following:</b>	<b>3</b> ___	
Math 128B Abstract Algebra II		3
Math 129B Linear Algebra II		3
Math 131B Real Analysis II		3
Math 175 Topology		3

**California State Polytechnic University, San Luis Obispo** (Quarter System)

*Mathematics Courses Required for Single Subject Teaching Credential*

<b>A. The Core</b>		<b>Units</b>
Math 141, 142, 143, 241	Calculus I, II, III, IV	4, 4, 4, 4
Math 206	Linear Algebra	4
Math 242	Differential Equations	4
Math 335	Graph Theory	4
Or		
Math 336	Combinatorial Mathematics	
Math 341	Number Theory	4
Math 419	History of Mathematics	4
Math 442	Euclidean Geometry	4
Math 443	Modern Geometries	4
Math 481	Abstract Algebra I	4
Stat 321, 322	Statistical Analysis	4, 4
<b><i>Core Total</i></b>		<b><i>56</i></b>
<b>B. BREADTH AND PERSPECTIVE</b>		
Math 248	Methods of Proof in Mathematics	4
Math 300	Technology in Mathematics Education	3
Math 424	Organizing and Teaching Mathematics	4
Math 459	Undergraduate Seminar	4
Math 461, 462	Senior Project	2,2
CSC 101	Fundamentals of Computer Science I	4
<b><i>Breadth and Perspective Total</i></b>		<b><i>23</i></b>
<b>TOTAL UNITS REQUIRED</b>		<b>79</b>

**California State University, San Marcos** (Semester System)

Students interested in teaching mathematics at the secondary level may wish to complete the Single Subject Preparation Program (SSPP) in mathematics. A prospective teacher qualifies for the Single Subject Teaching Credential in mathematics by completing the SSPP and earning a Bachelor's degree

<b>COURSE NUMBER</b>	<b>Course Title</b>	<b>Units</b>
MATH 160	Calculus with Applications, I	5
MATH 162	Calculus with Applications, II	4
MATH 260	Calculus with Applications, III	4
MATH 330	Introduction to the History of Mathematics	3
MATH 350	Foundations of Theoretical Mathematics	3
MATH 360	Foundations of Analysis	3
MATH 374	Linear Algebra	3
MATH 410	Modern Geometry	3
MATH 440	Intro to Mathematical Probability & Statistics	4
MATH 470	Introduction to Abstract Algebra	3
<b>Choose one of the following courses:</b>		
MATH 262	Introduction to Differential Equations	3
MATH 362	Differential Equations	
<b>Choose one of the following courses:</b>		
MATH 372	Introduction to Number Theory	3
MATH 522	Number Theory	
<b>Choose one of the following courses:</b>		
MATH/CS 464	Numerical Analysis and Computing	3
MATH 480	Introduction to Optimization	
<b>Choose one of the following courses:</b>		
MATH 472	Introduction to Graph Theory	3
MATH 474	Introduction to Combinatorics	
Any 400 or 500 level mathematics course approved for the Mathematical science majors, and not already used to satisfy a requirement above.		
EDUC 350	Foundations of Teaching as a Profession	3
<b>TOTAL UNITS</b>		<b>53</b>

**Sonoma State University (Semester System)**

<b>Mathematics B.A. -Secondary Teaching Option</b>		<b>Units</b>
Math 161	Calculus I (3 units in G.E., I unit in major)	1
Math 180	Mathematical Computing	2
Math 211	Calculus II	4
Math 220	Higher Mathematics: An Introduction	3
Math 241	Differential Equations and Linear Algebra	4
Math 250	Probability and Statistics	3
Math 261	Calculus III	4
Math 306	Number Theory	3
Math 308	College Geometry	3
Math 310	History of Mathematics	3
Math 316	Combinatorics and Graph Theory	3
Math 320	Modern Algebra I	4
Math 340	Real Analysis I	4
Math 345	Probability Theory	3
Or		
Math 470	Mathematical Models	3
Math 395	Community Involvement Program	2
Phys 114	Intro to Physics (3 units in G.E., 1 in major)	1
<b>TOTAL</b>		<b>47 (53 counting GE)</b>