BS MATHEMATICS

- 60 units upper division
- 2.0 GPA
- 0
- = Required in Major; also satisfies GE

Course sequencing: See flowcharts at www.csmadvising.calpoly.edu

Note: No major, support or concentration courses may be taken as credit/no credit.

MAJOR COURSES

MATH 141 Calculus I (B1)* ....................... 4
MATH 142 Calculus II (B1)* ....................... 4
MATH 143 Calculus III ......................... 4
MATH 202 Orientation to the Mathematics Major 1
MATH 206 Linear Algebra I ....................... 4
MATH 241 Calculus IV ......................... 4
MATH 242 Differential Equations I ................. 4
MATH 248 Methods of Proof in Mathematics .... 4
MATH 306 Linear Algebra II ...................... 4
MATH 412 Introduction to Analysis I ............. 4
MATH 459 Senior Seminar or MATH 460
Applied Math Senior Seminar .................. 4
MATH 461 Senior Project I ....................... 2
MATH 462 Senior Project II ...................... 2
MATH 481 Abstract Algebra I ................ 4

PHYS 132 General Physics II
PHYS 141 General Physics IA ................. 4
PHYS 133 General Physics II or PHYS 133
General Physics III (B3 & B4)* ............... 4

General curriculum or concentration .................. 48/56/52/52

GEneral Education (GE)
72 units required, 12 of which are specified in Major.

A1 Expository Writing ............................ 4
A2 Oral Communication .......................... 4
A3 Reasoning, Argumentation, and Writing..... 4

B1 Mathematics/Stat * 8 units in Major/ Support
B2 Life Science ..................................... 4
B3 Physical Science * 4 units in Support ....... 0
B4 One lab taken with either a B2 or B3 course
*in Major

C1 Literature ........................................ 4
C2 Philosophy ....................................... 4
C3 Fine/Performing Arts .......................... 4
C4 Upper-division elective ..................... 4

Area C elective (Choose one course from C1-C4) 4

D1 The American Experience (40404) ........... 4
D2 Political Economy ......................... 4

D3 Comparative Social Institutions ............. 4
D4 Self Development (CSU Area E) ............. 4
D5 Upper-division elective ..................... 4

Area F Technology Elective (upper division) (4 units) 4

FREE ELECTIVES .......................... 15/7/11/11

General Curriculum in Mathematics or Concentrations (select one)

General Curriculum in Mathematics
This is the pathway for students who do not wish to select a concentration.

CSC/CPE 101 Fund. of Computer Science I or
CSC/CPE 235 Fundamentals of Computer Science for Scientists and Engineers I ........... 4

STAT 301 Statistics I or STAT 325 Introduction to
Probability Models ................................ 4
MATH 336 Combinatorial Mathematics .......... 4

Choose three tracks from the following list, with at least one track chosen from the first two tracks listed. A track consists of two paired courses representing depth of study with a particular focus.

MATH 413 and MATH 414
MATH 406 and MATH 482
MATH 304 and MATH 404
MATH 335 and MATH 435
MATH 344, and MATH 416 or MATH 418
MATH 350, and MATH 341 or MATH 344
MATH 408 and MATH 409
MATH 437 and MATH 453
MATH 440 and MATH 441
MATH 442 and MATH 443
MATH 451 and MATH 452

Approved Electives .................................. 12

Select 12 units from the following:

MATH 304, 335, 341, 344, 350, 404, 406, 408,
409, 413, 414, 416, 418, 419, 435, 436, 437, 440,
441, 442, 443, 451, 452, 453, 470, 482;
CSC/CPE 102, 103, 236, 349;
PHYS 132, 133, 211, 301, 302, 322, 323, 405, 408;
STAT 301, 302, 325, 425, 426, 427

Applied Mathematics Concentration
CSC/CPE 101 Fund. of Computer Science I or
CSC/CPE 235 Fundamentals of Computer Science for Scientists and Engineers I ........... 4
MATH 304 Vector Analysis ....................... 4
MATH 344 Linear Analysis II .................... 4
MATH 350 or CSC/CPE 102 or CSC/CPE 236 ..... 4

1 General Curriculum/Applied Concentration/Pure Concentration/
Mathematics Teaching Concentration.

2 Free electives will vary, depending on concentration chosen.
MATH 413 Introduction to Analysis II ....................  4  
MATH 451 Numerical Analysis I ............................  4  
STAT 301 Statistics I  
or STAT 325 Introduction to Probability Models ...........  4

Tracks  Corrected effective Summer 2009 ........ 16
Choose two tracks from the following list. A track consists of two paired courses representing depth of study with a particular focus.
MATH 408  and MATH 409  
MATH 416  and MATH 418  
MATH 452  and MATH 453  

1 Approved electives  ................................................. 12
Select 12 units from one of the following categories, with at least one course at the 300 level or above. Other choices are also possible, and should be pre-approved in consultation with academic advisor.
1. ASTR 301, 302, 326  
   PHYS 132, 133, 301, 302, 303, 317, 322, 323, 405, 408, 412, 417  
2. STAT 302, 323, 324, 325, 330, 416, 417, 418, 419, 421, 423, 425, 426, 430  
3. CSC/CPE 102 or 236, 103, 225, 349, 357, 448  
4. ME 211, 212, 341  
5. ECON 311, 313, 408  

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>MATH 336 Combinatorial Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>MATH 408 Complex Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 413 Introduction to Analysis II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 440 Topology I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 482 Abstract Algebra II</td>
<td>4</td>
</tr>
<tr>
<td>Select 12 units from the following:</td>
<td>12</td>
</tr>
<tr>
<td>MATH 406, 409, 414, 435, 441</td>
<td></td>
</tr>
<tr>
<td>Select 8 units from the following:</td>
<td>8</td>
</tr>
</tbody>
</table>
| CSC/CPE 101  
or CSC/CPE 235                                         | 4     |
| MATH 350 (4)                                                          |       |
| STAT 301  
or STAT 325                                              | 4     |
| Select 12 units from the following:                                   | 12    |

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CSC/CPE 101 Fundamentals of Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>or CSC/CPE 235 Fundamentals of Computer Science for Scientists and Engineers I</td>
<td></td>
</tr>
<tr>
<td>SCM 300 Early Field Experience, Science/Math</td>
<td>4</td>
</tr>
<tr>
<td>MATH 300 Technology in Mathematics Education</td>
<td>4</td>
</tr>
<tr>
<td>STAT 301 Statistics I</td>
<td>4</td>
</tr>
</tbody>
</table>
| STAT 302  
or STAT 325                                             | 4     |
| MATH 336 Combinatorial Mathematics                                    | 4     |
| MATH 341 Theory of Numbers                                           | 4     |
| MATH 419 Intro to the History of Mathematics                         | 4     |

<table>
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<th>Course</th>
<th>Units</th>
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<tr>
<td>MATH 423 Advanced Mathematics for Teaching</td>
<td>4</td>
</tr>
<tr>
<td>MATH 442 Euclidean Geometry</td>
<td>4</td>
</tr>
<tr>
<td>MATH 443 Modern Geometries</td>
<td>4</td>
</tr>
<tr>
<td>MATH 482 Abstract Algebra II</td>
<td>4</td>
</tr>
<tr>
<td>Select 4 units from the following:</td>
<td>4</td>
</tr>
<tr>
<td>CSC/CPE 102, 236; MATH 304, 335, 344, 406, 408, 413, 416, 435, 437, 440, 451, 470; PHYS 132, 133, 302</td>
<td></td>
</tr>
</tbody>
</table>

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1 Consultation with advisor is recommended prior to selecting approved electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.