

2009-11 Cal Poly Catalog

Mathematics Department

Flowchart

BS MATHEMATICS

- ☐ 60 units upper division ☐ GWR
☐ 2.0 GPA ☐ USCP

* = 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 <i>or</i> 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 141 General Physics IA.....	4
PHYS 132 General Physics II <i>or</i> PHYS 133 General Physics III (B3 & B4)*	4
General curriculum or concentration	48/56/52/52 ¹
	105/113/109/109¹

GENERAL EDUCATION (GE)

72 units required, 12 of which are specified in Major.

→See page 50 for complete GE course listing.

→Minimum of 12 units required at the 300 level.

Area A Communication (12 units)

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

Area B Science and Mathematics (4 units)

B1 Mathematics/Stat * 8 units in Major/ Support	0
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	

Area C Arts and Humanities (20 units)

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

Area D/E Society and the Individual (20 units)

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
	60
FREE ELECTIVES	15/7/11/11²
	180

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 <i>or</i> CSC/CPE 235 Fundamentals of Computer Science for Scientists and Engineers I	4
STAT 301 Statistics I <i>or</i> STAT 325 Introduction to Probability Models	4
MATH 336 Combinatorial Mathematics	4
Tracks.....	24

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

Approved Electives.....	12
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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

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Applied Mathematics Concentration

CSC/CPE 101 Fund. of Computer Science I <i>or</i> 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 <i>or</i> CSC/CPE 102 <i>or</i> 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 423 Advanced Mathematics for Teaching	4
MATH 451 Numerical Analysis I.....	4	MATH 442 Euclidean Geometry	4
STAT 301 Statistics I <i>or</i> STAT 325 Introduction to Probability Models	4	MATH 443 Modern Geometries.....	4
Tracks <i>Corrected effective Summer 2009</i>	12 16	MATH 482 Abstract Algebra II.....	4
Choose two tracks from the following list. A track consists of two paired courses representing depth of study with a particular focus.		Select 4 units from the following:.....	4
MATH 408 <i>and</i> MATH 409		CSC/CPE 102, 236;	
MATH 416 <i>and</i> MATH 418		MATH 304, 335, 344, 406, 408, 413, 416, 435, 437, 440, 451, 470;	
MATH 452 <i>and</i> MATH 453		PHYS 132, 133, 302	
¹ Approved electives	12		52
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, 211, 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 <i>or</i> 236, 103, 225, 349, 357, 448			
4. ME 211, 212, 341			
5. ECON 311, 313, 408			
	56		
Pure Mathematics Concentration			
MATH 336 Combinatorial Mathematics.....	4		
MATH 408 Complex Analysis I	4		
MATH 413 Introduction to Analysis II.....	4		
MATH 440 Topology I.....	4		
MATH 482 Abstract Algebra II.....	4		
Select 12 units from the following:	12		
MATH 406, 409, 414, 435, 441			
Select 8 units from the following	8		
CSC/CPE 101 <i>or</i> CSC/CPE 235 (4)			
MATH 350 (4)			
STAT 301 <i>or</i> STAT 325 (4)			
Select 12 units from the following	12		
MATH 304, 335, 341, 344, 350, 404, 406, 409, 414, 416, 418, 435, 436, 437, 441, 451, 452, 453, 470			
	52		
Mathematics Teaching Concentration			
CSC/CPE 101 Fundamentals of Computer Science I <i>or</i> CSC/CPE 235 Fundamentals of Computer Science for Scientists and Engineers I.....	4		
SCM 300 Early Field Experience, Science/Math.....	4		
MATH 300 Technology in Mathematics Education	4		
STAT 301 Statistics I.....	4		
STAT 302 <i>or</i> STAT 325 <i>or</i> STAT 425.....	4		
MATH 336 Combinatorial Mathematics.....	4		
MATH 341 Theory of Numbers.....	4		
MATH 419 Intro to the History of Mathematics.....	4		

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.