



Bachelor of Science MATHEMATICS

Advisement Form 2009-2010

Name _____ ID _____

Lower Division Requirements (34-35 units)	Un.	Instit.	Course	Units	Grade	Term	Prerequisites, GE and Comments
MATH 150 Calculus I	4						Prereq: Passing scores on the Calculus Placement Exam or MATH 105; GE: B3
MATH 151 Calculus II	4						Prereq: MATH 150
MATH 230 Logic and Mathematical Reasoning	3						GE: A3, B3
MATH 240 Linear Algebra	3						Prereq: MATH 151
MATH 250 Calculus III	3						Prereq: MATH 151 with a C or better
PHYS 200 General Physics I	4						Prereq: MATH 150; GE: B1
<i>Select PHYS 201 and an additional science course OR a two semester science sequence (7-8 units)</i>							
PHYS 201 General Physics II	4						Prereq: PHYS 200; GE: B1
Science Course	3-4						
OR							
Science Sequence Course 1	4						
Science Sequence Course 2	3-4						
<i>Select one of the following:</i>							
COMP 105 Computer Programming Introduction (or) COMP 150 Object-Oriented Programming	3 4						GE: B4 Prereq: Programming experience; GE: B4
<i>Select an additional computer science course:</i>							
COMP 150 or above (or) COMP 102	3-4						
Upper Division Requirements (20 units)							
MATH 300 Discrete Mathematics	3						Prereq: MATH 230
MATH 331 History of Mathematics	3						GE: B3, D, INTD
MATH 350 Differential Equations and Dynamical Systems	3						Prereq: MATH 250 (may be taken concurrently)
MATH 351 Real Analysis	3						Prereq: MATH 240 & 250
MATH 352 Probability and Statistics	3						Prereq: MATH 151
MATH 451 Complex Analysis	3						Prereq: MATH 240 & 250
MATH 499 Senior Colloquium	1						Prereq: Senior standing; Repeatable.
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Elective Requirements (9-13 units) <i>Courses selected below must be outside of your emphasis area. Students planning on teaching math have to choose MATH 492 (3 units) for field experience requirement. Other courses recommended for teaching careers are marked with *.</i>							
MATH 318 Mathematics for Secondary School Teachers *	3						Prereq: MATH 150
MATH 330 Mathematics and Fine Arts *	3						Prereq: A passing score on the ELM exam or MATH 95, GE: B3, INTD; Offered fall semester only
MATH/COMP/PHYS 345 Digital Imaging Processing	3						Prereq: Consent of instructor; GE: B1, B4, INTD
MATH 354 Analysis of Algorithms	3						Prereq: MATH 300 and some computer programming experience
MATH 393 Abstract Algebra I *	3						Prereq: MATH 240 or consent of instructor
MATH 429 Operations Research	3						Prereq: MATH 329 or 352 or equivalent
MATH 430 Research Design and Data Analysis	3						Prereq: MATH/PSY 202 with a C or better or MATH 352; GE: A3, B3, INTD
MATH 437 Mathematics for Game Development	3						Prereq: MATH 137 or 300; GE: B3, INTD
MATH/COMP/PHYS 445 Image Analysis and Pattern Recognition	3						Prereq: PHYS/COMP/MATH 345 or consent of instructor; GE: B1, B4, INTD
MATH 448 Scientific Computing	3						Prereq: MATH 151 & MATH 350 or COMP 151; GE: B3, B4, INTD
MATH 450 Partial Differential Equations and Mathematical Physics	3						Prereq: MATH 350 or consent of instructor
MATH/COMP 452 Computational Bioinformatics	4						Prereq: Programming experience and statistics, or consent of instructor
MATH 480 Differential and Riemannian Geometry	3						Prereq: MATH 351
MATH 482 Number Theory & Cryptography *	3						Prereq: MATH 300
MATH 484 Algebraic Geometry and Coding Theory	3						Prereq: MATH 393
MATH 490 Topics in Modern Mathematics	3						Prereq: Upper division standing Repeatable by topic
MATH 492 Internship *	1-3						Prereq: Upper division standing & program approval of written proposal; Repeatable
MATH 494 Independent Research	1-3						Prereq: Senior standing and program approval of written proposal; Repeatable
MATH 497 Directed Studies	3						Prereq: Program approval of written proposal; Repeatable
MATH 499 Senior Colloquium	1						Prereq: Senior standing; Repeatable
Emphasis Requirements (6-10 units) <i>Select one emphasis from the following 10 emphasis areas listed:</i> <i>Note: Courses used in the emphases cannot be counted to also fulfill an elective requirement</i>							
1) Actuarial Sciences/Economics (9 units) <i>*See faculty advisor for course substitutions in this area.</i>							
ECON 300 Fundamentals of Economics	3						GE: D; Not open to students with credit in ECON 110 or 111
ECON 486 Introduction to Econometrics	3						Prereq: ECON 310 or 329, ECON 311 & MATH 340
MATH 429 Operations Research	3						Prereq: MATH 329 or 352 or equivalent
2) Applied Mathematics (9 units)							
MATH 429 Operations Research	3						Prereq: MATH 329 or 352 or equivalent
MATH 448 Scientific Computing	3						Prereq: MATH 151; COMP 350 or COMP 151; GE: B3, B4, INTD
MATH 450 Partial Differential Equations and Mathematical Physics	3						Prereq: MATH 350 or consent of instructor

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3) Applied Physics (6 units) <i>Students selecting this emphasis should take PHYS 201.</i>							
MATH/COMP/PHYS 345 Digital Image Processing	3						Prereq: Consent of instructor GE: B1, B4, INTD
MATH/COMP/PHYS 445 Image Analysis and Pattern Recognition	3						Prereq: PHYS/COMP/MATH 345 or consent of instructor; GE: B1, B4, INTD
4) Biomathematics (10 units) <i>*Students selecting this Emphasis should take BIOL 201 in the science sequence</i>							
MATH/PSY 202 Biostatistics <i>Must receive a C or better</i>	3						Prereq: A passing score on the ELM exam or MATH 105 or equivalent; GE: B3
MATH 430 Research Design & Data Analysis	3						Prereq: MATH 202 with a C or better or MATH 352; GE: A3, B3, INTD
MATH/COMP 452 Computational Bioinformatics	4						Prereq: Programming experience and statistics or consent of instructor
5) Business Management (9 units)							
MATH 329 Statistics for Business & Economics	3						GE: B3
MATH 429 Operations Research	3						Prereq: MATH 329 or 352 or equivalent
Economics <u>or</u> upper division Management course	3						
6) Computer Science (9 units) <i>*Students selecting this emphasis should take COMP 150 and COMP 151 for the computer science requirements.</i>							
COMP 350 Introduction to Software Engineering	3						Prereq: COMP 232 & 262
MATH 354 Analysis of Algorithms	3						Prereq: MATH 300 and some computer programming experience
MATH 448 Scientific Computing	3						Prereq: MATH 151 & MATH 350 or COMP 151; GE: B3, B4, & INTD
7) Cognitive Science (9 units) <i>*See faculty advisor for course substitutions in this area.</i>							
MATH 430 Research Design & Data Analysis	3						Prereq: MATH 202 with a C or better or MATH 352; GE: A3, B3 & INTD
PSY 210 Learning, Cognition & Development	3						GE: E
Upper division cognitive psychology course	3						
8) Digital Design (9 units)							
ART 108 Visual Technologies	3						
MATH 393 Abstract Algebra I	3						Prereq: MATH 240 or consent of instructor
ART 312 Digital Media Art: Time-Based Imaging and Compositing <i>(or)</i> ART 314 Digital Media Art: Digital Photography	3						Prereq: ART 108 & 205 Prereq: ART 108
9) Education (9 units) <i>*This emphasis required to meet the Single Subject Matter Preparation requirement for future teachers.</i>							
EDUC 512 Equity, Diversity and Foundations of Schooling	3						GE: C3b; <i>EDUC 512 is a required class for the teaching credential program at CSUCI</i>
MATH 318 Mathematics for Secondary School Teachers	3						Prereq: MATH 150
MATH 393 Abstract Algebra I	3						Prereq: MATH 240 or consent of instructor
10) Physics (6 units) <i>*Students selecting this emphasis should take PHYS 201.</i>							
MATH 450 Partial Differential Equations and Mathematical Physics	3						Prereq: MATH 350 or consent of instructor
PHYS (upper division)	3						

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NOTE: Choice of another emphasis or individualized emphasis is possible upon approval of the mathematics advisor							

Additional University Graduation Requirements

9 Units Upper Division Interdisciplinary GE at CSUCI (courses numbered 330-349 or 430-449)	
Course 1 (in major) <u> MATH 331 </u>	Course 2 _____ (May choose MATH 330, 345, 430, 437, 445, 448)
	Course 3 (outside of major) _____ (Choose from GE A-E; Recommend COMP 447, 449 or PHYS 434)
American Institutions Requirements: US History _____	State and Local Gov't _____ (Choose HIST 270, 271, 272, 275 or 350) (Choose POLS 150)
<i>Students must receive a grade of C or better in the Language and Multicultural Requirements</i>	
Language Requirement: GE C3a _____	(one semester of college level language)
Multicultural Requirement: GE C3b _____	
<i>Minimum total units to graduate: 120 of which 40 must be upper division. Please see catalog for a complete list of graduation requirements.</i>	
Advisor _____	Date Completed: _____
Advisor Comments: _____	

PREREQUISITES FOR THE MATHEMATICS SINGLE SUBJECT TEACHING CREDENTIAL AT CSUCI ONLY:

CSUCI credential program requires prerequisite courses that may be taken as part of the undergraduate degree. Please contact the Credential Office (805-437-8953, credential.assistant@csuci.edu) for a list of the required prerequisites and any question you may have regarding the credential program. It is recommended that you contact the credential office during your junior year.