



SACRAMENTO STATE

# Program Proposal Form B



Academic Group (College): <b>Natural Sciences &amp; Mathematics</b>	Date of Submission to College Dean: 9-5-07
Academic Organization (Department): <b>Mathematics &amp; Statistics</b>	Requested Effective: Fall __, Spring <u>X</u> , 2008.
Department Chair: Roger Leezer	Contact if not Department Chair:

Title of the Program: BA in Mathematics & Applied Computing

Type of Program Proposal:

**Modification in Existing Program:**

Substantive Change

Non-Substantive Change

Deletion of Existing Program

**New Programs**

Initiation (Projection) of New Program on to Master Plan

New Degree Programs

Regular Process

Fast Track Process

Pilot Process

New Minor, Concentration, Option, Specialization, Emphasis

New Certificate Program

**PLEASE NOTE:** Form B is to be used only as a Cover Form. Additional information is requested for each of the above as noted in the corresponding procedure in the Policies and Procedures for Initiation, Modification, Review and Approval of Courses and Academic Programs found at <http://www.csus.edu/acaf/univmanual/index.htm>

**Briefly describe the program proposal (new or change) and provide a justification.**

The Mathematics Department is changing the name of its current Double Major- Mathematics and Computer Science (BA) degree program and making some changes in the degree requirements. We are making these changes in consultation with the Computer Science Department because they are no longer offering some of the courses in the current major. They also wanted to eliminate the senior project because they felt that most of the projects they got were not appropriate for the students in this program. The mathematics requirements are changing only slightly. This modified program has been approved by the Computer Science Department as well as the Mathematics Department.

Approvals:

Department Chair: *Roger Leezer* Date: 9/20/07

College Dean: *Laurel Chiffereau* Date: 9/20/07

University Committee: \_\_\_\_\_ Date: \_\_\_\_\_

Associate Vice President and Dean  
for Academic Affairs: \_\_\_\_\_ Date: \_\_\_\_\_

## **Program Change for the BA in Mathematics & Applied Computing**

The Mathematics Department has consulted extensively with the Computer Science Department in proposing this change. Their curriculum committee has already approved the new program. We don't expect this change to have a significant impact on any other units' programs.

We don't expect this change to require significant additional resources. The mathematics part of the program is changing very little. Math 150 is now required instead of being part of a choice. All of the required math courses are already being offered by the department. The number of students in this program is fairly small so any enrollment increases should be able to be handled within the department's existing budget allotment.

## Mathematics & Applied Computing

## Double Major - Math & Computer Science

New Program					Old Program				
Dept.	No.	Title	Course Units	Section Units	Dept.	No.	Title	Course Units	Section Units
<b>Required Lower Division Courses</b>				<b>38</b>	<b>Required Lower Division Courses</b>				<b>34</b>
Math	30	Calculus I	4		Math	30	Calculus I	4	
Math	31	Calculus II	4		Math	31	Calculus II	4	
Math	32	Calculus III	4		Math	32	Calculus III	4	
Math	35	Linear Algebra	3		Math	35	Linear Algebra	3	
Math	45	Differential Equations	3		Math	45	Differential Equations	3	
Stat	50	Intro. to Probability & Statistics	4		Stat	50	Intro. to Probability & Statistics*	4	
CSc	15	Prog. Concepts & Methodology I	3		CSc	15	Prog. Concepts & Methodology I	3	
CSc	20	Prog. Concepts & Methodology II	3		CSc	20	Prog. Concepts & Methodology II	3	
CSc	35	Intro. to Computer Architecture	3		CSc	35	Intro. to Computer Architecture	3	
CSc	60	Intro. to Systems Programming	3		CSc	60	Intro. to Systems Programming*	3	
Phys	11A	General Physics (Mechanics)	4						
<b>Required Upper Division Courses</b>				<b>45</b>	<b>Required Upper Division Courses</b>				<b>50</b>
Math	108	Intro. to Formal Mathematics	3		Math	108	Intro. to Formal Mathematics	3	
Math	110A	Modern Algebra	3		Math	110A	Modern Algebra	3	
Math	150	Intro. to Numerical Analysis	3						
Stat	115A	Intro. to Probability Theory	3		Stat	115A	Intro. to Probability Theory	3	
Stat	115B	Intro to Math. Stat.	3		Stat	115B	Intro to Math. Stat.	3	
CSc	130	Data Structures & Algorithm Anal.	3		CSc	130	Data Structures & Algorithm Anal.	3	
					CSc	131	Computer Software Engineering	3	
CSc	132	Computing Theory	3						
CSc	133	Obj. Or. Computer Graphics Prog.	3						
CSc	134	DB Management & File Org.	3		CSc	134	DB Management & File Org.	3	
					CSc	136	Programming Languages	3	
					CSc	137	Computer Organization	4	
					CSc	139	Operating System Principles	3	
CSc	148	Modeling & Experimental Design	3		CSc	148	Modeling & Experimental Design	3	
					CSc	190	Senior Project I	2	
					CSc	191	Senior Project II	2	
	One of the Following			3		One of the Following			3
Math	130A	Functions of a Real Variable	3		Math	130A	Functions of a Real Variable	3	
Math	134	Functions of a Complex Variable	3		Math	134	Functions of a Complex Variable	3	
	One of the Following			3		Two of the Following			6
Math	170	Linear Programming	3		Math	150	Numerical Analysis	3	
Stat	155	Intro. to Operations Research	3		Math	170	Linear Programming	3	
					Stat	155	Intro. to Operations Research	3	
	Three of the Following			9		One of the Following			3
CSc	140	Advanced Algorithms	3		CSc	132	Computing Theory*	3	
CSc	155	Advanced Computer Graphics	3		CSc	133	Obj. Or. Computer Graphics Prog.	3	
CSc	165	Game Design	3		CSc	138	Computer Organization	3	
CSc	174	Database Management Systems	3						
CSc	176	Adv. DB Management Systems	3						
CSc	177	Data Mining	3						
CSc	180	Artificial Intelligence	3						

\*Stat 50, CSc 60, & CSc 132 are not formally required in the old program but are effectively required because of prerequisites.