SACRAMENTO STATE

Program Proposal
Form B

Academic Group *(College)*: **Natural Sciences and Mathematics**	**Date of Submission to College Dean:** **August 30, 2007**
Academic Organization *(Department)*: **Physics and Astronomy**	**Requested Effective: Fall X , Spring ___, 2008 .**
Department Chair: **Gary Shoemaker**	**Contact if not Department Chair:** **Hossein Partovi**
Title of the Program: **Physics BS degree**	

Type of Program Proposal:

__X__ Modification in Existing Program:
- **___ Substantive Change**
- **_X_ 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.

Deleting of an elective course from the current BS degree requirements and replacing it with an additional upper division required course, a reformulated Physics 156 course (see current Course Change Proposal). The course change proposed provides more in-depth treatment of Hamiltonian/Lagrangian dynamics and Statistical Mechanics. There will be no fiscal impact on other departments and a negligible impact on the Physics department. The total number of units for the program remains the same, but 3 upper division elective units are shifted to section B – Required Upper Division Requirements which will increase to 35 units.

Approvals:

Department Chair: Gary H Shoemaker **Date:** 9/18/07

College Dean: Lawrence Hoffer **Date:** 9/20/07

University Committee: _____ **Date:** _____

Associate Vice President and Dean for Academic Affairs: _____ **Date:** _____

FYI

Proposed Changes:
Itemize Each Change:

1. Delete PHYS 156 from the list of elective upper division courses required (Section C).
2. Add PHYS 156 to the list of required upper division courses (Section B).
3. Increase units of Required Upper Division Courses (Section B) from 32 to 35 units.
4. Decrease units of Elective Upper Division Courses (Section C) from 6 to 3 units.
5. No changes in overall program unit totals.

NEW PROGRAM (66 units)	OLD PROGRAM (66 units)
A. Required Lower Division Courses (37 units):	**A. Required Lower Division Courses (37 units):**
PHYS 011A General Physics: Mechanics (4 units)	PHYS 011A General Physics: Mechanics (4 units)
PHYS 011B General Physics: Heat, Light, Sound (4 units)	PHYS 011B General Physics: Heat, Light, Sound (4 units)
PHYS 011C General Physics: Electricity and Magnetism, Modern Physics (4 units)	PHYS 011C General Physics: Electricity and Magnetism, Modern Physics (4 units)
MATH 030 Calculus I (4 units)	MATH 030 Calculus I (4 units)
MATH 031 Calculus II (4 units)	MATH 031 Calculus II (4 units)
MATH 032 Calculus III (4 units)	MATH 032 Calculus III (4 units)
MATH 045 Differential Equations for Science and Engineering (3 units)	MATH 045 Differential Equations for Science and Engineering (3 units)
CHEM 001A General Chemistry I (5 units)	CHEM 001A General Chemistry I (5 units)
CHEM 001B General Chemistry II (5 units)	CHEM 001B General Chemistry II (5 units)
B. Required Upper Division Courses (35 units)	**B. Required Upper Division Courses (32 units)**
PHYS 105 Mathematical Methods in Physics (3 units)	PHYS 105 Mathematical Methods in Physics (3 units)
PHYS 106 Introduction to Modern Physics	PHYS 106 Introduction to Modern Physics

(3 units) PHYS 110 Classical Mechanics (3 units) PHYS 115 Electronics and Instrumentation (4 units) **OR** PHYS 145 Optics (3 units) PHYS 124 Thermodynamics and Statistical Mechanics (3 units) PHYS 135 Electricity and Magnetism (3 units) PHYS 136 Electrodynamics of Waves, Radiation, and Materials (3 units) PHYS 150 Quantum Mechanics (3 units) PHYS 151 Advanced Modern Physics (3 units) PHYS 156 Classical and Statistical Mechanics PHYS 175 Advanced Physics Laboratory (2 units) PHYS 191 Senior Project (2 units) **C. Elective Upper Division Requirements (3 units)** PHYS 116 Advanced Electronics and Instrumentation (3 units) PHYS 130 Acoustics (3 units) PHYS 142 Applied Solid State Physics (3 units) PHYS 196 Experimental Offerings in Physics (1-3 units per semester; 4 unit maximum) PHYS 198 Co-curricular Activities (1-3 units per semester; 4 unit maximum)	(3 units) PHYS 110 Classical Mechanics (3 units) PHYS 115 Electronics and Instrumentation (4 units) **OR** PHYS 145 Optics (3 units) PHYS 124 Thermodynamics and Statistical Mechanics (3 units) PHYS 135 Electricity and Magnetism (3 units) PHYS 136 Electrodynamics of Waves, Radiation, and Materials (3 units) PHYS 150 Quantum Mechanics (3 units) PHYS 151 Advanced Modern Physics (3 units) ++++++++++++++++++++++++++ PHYS 175 Advanced Physics Laboratory (2 units) PHYS 191 Senior Project (2 units) **C. Elective Upper Division Requirements (6 units)** PHYS 116 Advanced Electronics and Instrumentation (3 units) PHYS 130 Acoustics (3 units) PHYS 142 Applied Solid State Physics (3 units) PHYS 196 Experimental Offerings in Physics (1-3 units per semester; 4 unit maximum) PHYS 198 Co-curricular Activities (1-3 units per semester; 4 unit maximum)

PHYS 199 Special Problems (1-3 units per semester; 4 unit maximum) And whichever of the courses below not previously used to fulfill the upper division requirement: PHYS 115 Electronics and Instrumentation (4 units) **OR** PHYS 145 Optics (3 units)	PHYS 199 Special Problems (1-3 units per semester; 4 unit maximum) And whichever of the courses below not previously used to fulfill the upper division requirement: PHYS 115 Electronics and Instrumentation (4 units) **OR** PHYS 145 Optics (3 units)