



UNIVERSITY OF WASHINGTON

OFFICE OF THE PRESIDENT

November 8, 2005

Mark A. Emmert, President

Dean David C. Hodge
College of Arts and Sciences
Box 353765

Dear David:

Based on the recommendation of its Subcommittee on Admissions and Programs, the Faculty Council on Academic Standards has recommended approval of the revised requirements for a Bachelor of Science degree in Physics. A copy of the change is attached.

I am writing to inform you that the Department of Physics is authorized to specify these requirements beginning spring quarter 2006.

The new requirements should be incorporated in printed statements and in individual department websites as soon as possible. The *General Catalog* website will be updated accordingly by the Registrar's Office.

Sincerely yours,

Mark A. Emmert
President

Enclosure

cc: Professor David G. Boulware (with enclosure)
Enrollment Services c/o Diane Hanks (with enclosure)
Mr. Robert Corbett (with enclosure)
Dr. Deborah H. Wiegand (with enclosure)
Todd Mildon, J. D. (with enclosure PHYSIC 081005)



Creating & Changing Undergraduate Academic Programs*

After college/school review, send signed original and 8 copies to: FCAS, Box 351271

PHYSIC - 081005

College: Arts and Sciences Department or Unit: Physics Date: 08/10/05

New Programs

- Leading to a Bachelor of _____ in _____ degree
- Leading to a Bachelor of _____ degree with a major in _____
- Leading to a _____ Option within the existing major in _____
- Leading to a Minor in _____

Changes to existing programs

- New Admission Requirements for the Major in _____ within the Bachelor of _____
- Revised Admission Requirements for the Major in _____ within the Bachelor of _____
- Revised Program Requirements for the Major in Physics within the Bachelor of Science
- Revised Requirements for the Option in _____ within the major in _____
- Revised Requirements for the Minor in _____

Other Changes

- Change name of program from _____ to _____
- New or Revised Continuation Policy for _____
- Eliminate program in _____

Proposed Effective Date: (quarter/year) Spring or Autumn, 2006 _____

Contact Person	Phone Number	Email
Oscar Vilches, UGrad. Faculty Advisor	206 543 2393	vilches@phys.washington.edu

1. Explanation of and Rationale for Proposed Change: (Please use additional pages if necessary. For new programs, please include any relevant supporting documentation such as student learning outcomes, projected enrollments, letters of support, and departmental handouts.)

We propose a relatively minor change in our requirements of Physics Electives for the major following recent changes in the number of credits awarded for several junior level classes. Three years ago we modified two series of courses, PHYS 321, 322, and 323 (Electricity and Magnetism), and PHYS 324, 325 (Quantum Mechanics) by introducing an additional class day devoted to a tutorial/problem solving session (requested heavily by majors for several years prior to change). Concurrently, we increased the number of credits for these classes from 3 to 4. We kept the relevant overall minimum requirements the same:

Core courses: PHYS 321 and 322.

Modern Physics: either PHYS 324 or 315 (Applications of Quantum Mechanics, 3 credits).

Physics Electives: five credits of upper division courses in Physics or cognate subjects from the approved list.

The intention of the original "five credits" of upper division courses was that students take at least two additional courses beyond the minimum to receive a BS. With PHYS 323, 324, and 325 now being 4 credits "technically" students still have to take two additional courses (we have several upper division 3-credit courses and labs), but students that take one of the 4-credit classes as elective ask for the 5th credit to be waived or covered by independent study, PHYS 401, 402, 403, which we don't allow. The "two courses of upper division Physics or cognate subjects from the approved list" reinstates the original purpose of the minimum BS in Physics. The change adds one credit to the minimum requirement for a BS in Physics, from 85 to 86 credits of Physics and Math courses (for those who take Phys 315 as requirement), or from 86 to 87 (for those who take Phys 324 as requirement). Requested change has been approved by Physics faculty.

Physics Major Requirements

85 Minimum of 86 credits as follows:

1. *Core courses (36 ~~36~~ 38 credits)*: PHYS 121, PHYS 122, PHYS 123, PHYS 224, PHYS 225, PHYS 227, PHYS 228, PHYS 321, PHYS 322, PHYS 334.
2. *Upper-division lecture courses in modern physics (3-4 credits)*: Either PHYS 315 or PHYS 324.
3. *Upper-division physics laboratory courses (6 credits)*: Two courses from PHYS 331, PHYS 335, PHYS 431, PHYS 432, PHYS 433, or PHYS 434.
4. *Research and seminars (3 credits)*: Possible choices include PHYS 401, PHYS 402, PHYS 403; or PHYS 485, PHYS 486, PHYS 487; or PHYS 491, PHYS 492, PHYS 493; or PHYS 494, PHYS 495, PHYS 496; or ASTR 480. 1-3 credits of independent research that has significant physics content in a cognate subject (astronomy, chemistry, etc.) may be substituted for 1-3 credits of the above choices with approval of the adviser.
5. ~~5 credits selected from approved upper-division physics lecture courses or approved lecture courses in cognate subjects.~~ Upper-division lecture courses: Two courses from an approved list of upper-division courses in Physics or cognate subjects.
6. *Mathematics (21 credits)*: MATH 124, MATH 125, MATH 126, MATH 324, and one from MATH 308, MATH 318, or AMATH 352. ^{lecture}
7. *Related sciences (9 credits)*: Courses to be selected from physical or biological sciences other than physics, mathematics, or computer science, or from the history or philosophy of science, in addition to any courses in these fields taken to satisfy requirement 5, above.
8. At least 12 credits of the physics courses presented to satisfy requirements 1 through 5, above, shall be in physics courses numbered 300 or above taken at the UW.
9. A minimum grade of 2.0 is required in all courses presented in fulfillment of requirements 1 through 5, above.
10. Students who plan graduate study in physics are strongly advised to complete PHYS 323, PHYS 324, PHYS 325, PHYS 328, as well as several of the following: PHYS 231, PHYS 232, PHYS 331, PHYS 421, PHYS 422, PHYS 423, PHYS 424, PHYS 425, PHYS 426, PHYS 431, PHYS 432, PHYS 433, and AMATH 401, AMATH 402, AMATH 403.

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2. Catalog Copy

A. Catalog Copy as Currently Written *(Include only sections/paragraphs that would be changed if your request is approved. Please cross out or otherwise highlight any deletions.)*

Please see below requirement 5 for the BS in Physics, as stated in the current UW Catalogue.
Proposed modification in **BOLD CAPITAL LETTERS**.

5. **5 CREDITS** selected from approved upper-division physics lecture courses or approved lecture courses in cognate subjects.

B. Proposed Catalog Copy, Reflecting Requested Changes *(Include exact wording as you wish it to be shown in the printed catalog. Please underline or otherwise highlight any additions. If needed, attach a separate, expanded version of the changes that might appear in department publications.)*

5. **TWO COURSES** selected from approved upper-division physics lecture courses or approved lecture courses in cognate subjects.

3. Signatures (required)

Chair/Program Director <i>David G. Boufornos</i>	Date 8/15/05	Dean <i>Judith A. Howard</i>	Date SEP 2, 2005
College Committee <i>Paul C. Lefore</i>	Date SEP 2, 2005	Faculty Council on Academic Standards <i>[Signature]</i>	Date 10-21-05