

Office of the Provost and Vice Chancellor
for Academic Affairs

Swanlund Administration Building
601 East John Street
Champaign, IL 61820



November 10, 2009

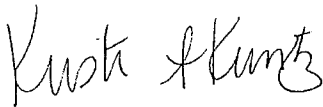
Abbas Aminmansour, Chair
Senate Committee on Educational Policy
Office of the Senate
228 English Building, MC-461

Dear Professor Aminmansour:

Enclosed is a copy of a proposal from the College of Engineering to revise the undergraduate minor in Physics.

This proposal has been approved by the College of Engineering Executive Committee. It now requires Senate review.

Sincerely,



Kristi A. Kuntz
Assistant Provost

KAK/dkk

Enclosures

c: I. Adesida
R. Dennis
G. Gladding
S. Kamin
D. Johnson
C. Livingstone
M. Pleck
M. Rood
C. Tucker

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

College of Engineering
Executive Committee
306 Engineering Hall, MC-266
1308 West Green Street
Urbana, IL 61801



RECEIVED
NOV - 3 2009
OFFICE of the PROVOST

October 28, 2009

Kristi Kuntz
Assistant Provost
217 Swanlund Administration Building
MC-304

Via: Ilesanmi Adesida, Engineering College

Dear Ms. Kuntz:

The College of Engineering Executive Committee has reviewed and approved the following:

Revision to: **Undergraduate Physics Minor**

This proposal is contingent upon approval the new course PHYS 225 and the revision to PHYS 325, for which documents were forwarded to you, along with the proposal for the revision to the B.S. degree in Engineering Physics on October 26th.

Attached is a copy of the request.

Sincerely yours,

Samuel N. Kamin, Secretary
Executive Committee

Approval Recommended:

Ilesanmi Adesida, Dean
College of Engineering

11/2/09
Date

Enclosure

c: Dale Van Harlingen
Duane Johnson (MatSE)
Michael Pleck
Mark Rood



**Senate Educational Policy Committee
Proposal Check Sheet**

PROPOSAL TITLE (Same as on proposal): Revision Of The Undergraduate Minor In Physics.

PROPOSAL TYPE (Please select all that apply below):

A. Program and degree proposals

1. This proposal is for a graduate program or degree

Yes No

2. **Degree** proposal (e.g. B.S.A.E., M.S.C.E.)

New degree - - please name new degree name: _____

Revision of an existing degree - - please name of the existing degree to be revised:

3. **Major** proposal (disciplinary focus e.g. Mathematics, Mechanical Engineering)

New major - - please name new major: _____

Revision of an existing major - - please indicate the name of the existing major to be revised: _____

4. **Concentration** proposal (e.g. Financial Planning)

New concentration - - please name new concentration: _____

Revision of an existing concentration - - please name the existing concentration to be revised: _____

5. **Minor proposal (e.g. Cinema Studies)** New minor - - please name new concentration: _____ Revision of an existing minor - - please name the existing concentration to be revised:
Undergraduate Minor in Physics6. Proposal for terminating an existing degree, major, concentration or minor

Please name and nature of the existing degree, major, concentration or minor: _____

7. Proposal for a multi-institutional degree between Illinois (UIUC) and a foreign institution

Please name the existing Illinois degree or program: _____

Please name the partnering institution: _____

B. **Proposal for renaming existing academic units** (college, school, department, or program)

Please provide the unit's current name: _____

Please provide the unit's proposed new name: _____

C. **Proposal for re-organizing existing units** (colleges, schools, departments, or programs) Change in status of an existing and approved unit (e.g. change from a program to department). Please indicate current unit name including status: _____ Transfer an existing unit

Please provide the current unit's name and home: _____

Please provide the new home for the unit: _____

 Merge two or more existing units (e.g. merge department A with department B)

Name and college of unit one to be merged: _____

Name and college of unit two to be merged: _____

 Terminate an existing unit. Please provide the current unit's name and status: _____D. **Other educational policy proposals** (e.g. academic calendar, grading policies, etc.)

Please indicate the nature of the proposal: _____

Proposal to the Senate Educational Policy Committee to Establish or Modify an Undergraduate Minor

PROPOSAL TITLE: Revision of the Undergraduate Minor in Physics

SPONSORING UNITS: Department of Physics and the, College of Engineering.

DEPARTMENTAL AND COLLEGE CONTACTS:

Gary Gladding, Professor and Associate Head, Physics, 333-0864, geg@illinois.edu

Charles Tucker III, Associate Dean for Undergraduate Programs, College of Engineering, 244-3822, ctucker@illinois.edu

BRIEF DESCRIPTION OF THE MINOR AND ITS REVISION: The Minor will continue to meet the criterion of depth of study in the subject area while not being as extensive as in the B.S. in Engineering Physics or LAS Specialized Curriculum in Physics.

The primary revision of the Minor is the addition of PHYS 225 as a required course. This addition increases the credit hours required to fulfill the minor by two, from 19-23 to 21-25 hours.

The other revision to the Minor is embedded in a logical adjustment to the content and title of PHYS 325, which is integral to the introduction of PHYS 225.

JUSTIFICATION: A proposed new course (PHYS 225) has been designed as a bridge between the introductory courses (PHYS 211-214) and the advanced courses (PHYS 3XX, PHYS 4XX). It provides additional preparation in relativity and a more mathematically sophisticated approach to introductory physics topics. In particular, Special Relativity and some of the more mathematical aspects of intermediate-level physics are moved from PHYS 325 to PHYS 225; Lagrangian and Hamiltonian mechanics are moved from PHYS 326 to PHYS 325; PHYS 225 replaces PHYS 212 as one of the prerequisites to PHYS 325. PHYS 225 replaces optional honors special topic sections (PHYS 199 section HM and PHYS 199 section HO) in which much of this material was presented with beneficial results.

The increase in credit hours above the suggested range of 16-21 to fulfill the minor is reasonable. The last requirement of the minor, of two additional Physics courses, lists its hours as 6-10, and this is the source of the variability in total hours. If students chose two 3-hour courses then they would earn the minor with 21 hours of coursework. The increase above that is simply to allow students who would rather take a 4-hour or 5-hour physics course for this portion of the minor to do so. There are many good 3-hour courses to choose from, so a student could very easily earn this minor with 21 hours of credit. Moreover, if a student goes above 21 hours due to choice, the total credit retains the spirit of a minor, being far less than the Physics course hours required for the Physics “majors” – the B.S. in Engineering Physics (43-64) and the LAS Specialized Curriculum in Physics (39-41).

BUDGETARY AND STAFF IMPLICATIONS:

- a. Additional staff and dollars needed: None. See (b).
- b. Internal reallocations (e.g., change in class size, teaching loads, student-faculty ratio, etc.): Resources previously devoted to PHYS 199 sections HM and HO will be reallocated to PHYS 225.
- c. Effect on course enrollment in other units and explanations of discussions with representatives of those departments: Not applicable.
- d. Impact on library, computer use, laboratory use, equipment, etc.: None.

DESIRED EFFECTIVE DATE: Fall 2010

REQUIREMENTS: See Appendix

PREREQUISITES FOR THE MINOR: MATH 220 or 221; MATH 231; MATH 241; MATH 285

EXPECTED ENROLLMENT IN THE MINOR: We expect no significant change to the current number. Our estimate is about 50 students per year.

ADMISSION TO THE MINOR: As currently done – All students interested in pursuing a physics minor are interviewed by the Associate Head for Undergraduate Programs. The purpose is to make sure the student is aware of the requirements and to answer questions the student may have.

MINOR ADVISING: As currently done – The adviser for physics minors is the Associate Head for Undergraduate Programs in the department. Any meetings scheduled after the initial meeting are usually instigated by the student.

CERTIFICATION OF SUCCESSFUL COMPLETION: As currently done – Certification is done by the College of Engineering.

SPECIAL NOTE: Proposals for the new course PHYS 225 and revised course PHYS 325 are integral to a proposal for minor revision of the Engineering Physics B.S. degree program which has a desired effective date matching this proposal's. Both the curriculum revision proposal and these course proposals have been approved by the College of Engineering and forwarded for campus review.


STATEMENT FOR PROGRAMS OF STUDY CATALOG: See Appendix

CLEARANCES:

Signatures:


Sponsoring Unit Representative:

10/27/09
Date:


Dean of the College of the Sponsoring Unit:

11/2/09
Date:

N/A

Council of Teacher Education Representative:

Date:

Provost Representative:

Date:

Educational Policy Committee Representative:

Date:

APPENDIX: STATEMENT FOR PROGRAMS OF STUDY CATALOG

Shown as mark-up to the currently posted POS statement.

Physics Minor

Physics and technology go hand in hand, with physics providing the foundation for a broad range of technical fields. This minor is intended to encourage you to expand your understanding of physics beyond the introductory level, to deepen your understanding of fundamental principles, and to enhance your ability to keep abreast of an ever-changing technological world. Depending on your choice of 300- and 400-level physics courses, a total of 21-25 hours is required.

Hours	Required Courses
4	PHYS 211—University Physics: Mechanics
4	PHYS 212—University Physics: Elec & Mag
2	PHYS 213—Univ Physics: Thermal Physics or PHYS 214—Univ Physics: Quantum Physics
<u>2</u>	<u>PHYS 225—Relativity & Math Applications</u>
3	PHYS 325—Mechanics I
6-10	Any two courses at the 300 or 400 level except PHYS 419 and PHYS 420
<u>21-25</u> 19-23	Total

For more information regarding the Physics minor, visit the [Physics minor Web site](#), contact the Physics Undergraduate Programs Office (233 Loomis Laboratory of Physics, 217-333-4361, undergrad@physics.illinois.edu), or visit the Office of the Associate Dean for Undergraduate Programs, 206 Engineering Hall.

Draft Minutes
College of Engineering Executive Committee (EC) Meeting
Tuesday, 1:00 p.m., October 27, 2009
301 Engineering Hall

Present:

R. Bhargava (BioE)*	B. Heuser (NPRE)	M. Rood (CEE)
N. Cheng (MNTL)	P. Kalita (ABE)	C. Tucker (Admin)
B. Conway (AE)	S. Kamin (CS)	John Unger** (undergrad, CS)
G. Dullerud (MechSE)	D. Jones (ECE)	
P. Goldbart (Phys)	H. Reis (IESE)*	

Absent:

I. Adesida (Admin)	R.S. Sreenivas (IESE)	H. Zhao (ChBE)
V. Coverstone (Admin)	J. Weaver (MatSE)	
B. Cunningham (BioE)	M. Wong (CSL)	

* = alternate

** = guest

1. The meeting was called to order at 1:05.

2. Approval of the Draft Minutes from Oct. 20, 2009.

The minutes were approved unanimously (save two abstentions), with minor revisions.

3. New/Old Business

a. Undergrad Physics Minor Proposal

Chuck Tucker explained the issue that caused us to table this proposal in the last meeting, which was the number of hours in this minor; at 21-25 hours, the minor arguably exceeds the campus guidelines. Chuck discussed this with Kristi Kuntz in the provost's office, and she allowed that this was not a "show-stopper." In fact, it is quite possible to get this minor with 21 hours, which is at the high end of the campus guidelines, but does not exceed them. *The ad hoc committee report endorsing the new minor was approved unanimously.*

b. Feedback to Faculty about their work as advisors (Charles Tucker & John Unger, junger3)

Chuck introduced student John Unger (CS), who works with student group called Engineering Initiatives. This group proposes to give an online survey on advising, with the cooperation of the college academic affairs office. A draft of the proposed survey was provided. This is proposed as an online survey, with anonymity of respondents guaranteed, probably to be given just after early registration. There was a vigorous discussion about the survey and its uses, and about advising in general. Concerning who will see the data, the current plan is that advisors will see the data applicable to themselves; department heads will see summaries for each advisor; and the college will see summaries of departments. The problem of potential fraud in filling out online surveys was brought up by Henrique Reis. Paul Goldbart pointed out that private schools do a much better job of advising than we do. Geir Dullerud said it was important that the survey not be voluntary, since the results might otherwise be highly skewed. There was some discussion that demographic information about respondents would be useful, but that care should be taken to avoid compromising anonymity. General approbation was expressed for the idea of offering training/mentoring on advising for new faculty; Reis suggested that the quality of advising in each department is substantially a function of the department's leadership. Prasanta Kalita noted that he did interviews last year with award-winning advisors, and that the information he obtained could be useful for improving advising in the college. Sam Kamin said that the CS department had done surveys of advising

in past years, and offered to make those available. The plan is for the survey to be given in one or two departments in the spring, after which a decision will be made about expanding its use.

4. Subcommittee Report -

a. Revision to Undergrad Curriculum in Mechanical Engineering

In addition to the usual responsibilities, the *ad hoc* committee had been given the special charge to consider the advisability of the change in science requirements, which reduces the set of required courses. This they did with great care, and with the cooperation of the MechSE department. The report puts great stress on the role of advising in ensuring that students understand the role of the specific science classes in areas of mechanical engineering, so that they may make an informed choice of courses. *The favorable ad hoc committee report was endorsed unanimously (save one abstention).*

5. The meeting adjourned at 1:45.

The minutes have not yet been approved.
Respectfully submitted,

A handwritten signature in black ink, appearing to read "S N Kamin". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Sam Kamin, Secretary

cc: Robin Dennis
Michael Pleck