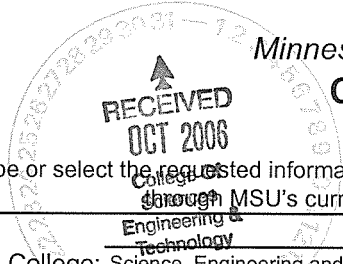


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Curriculum Proposal

Please type or select the requested information. Print completed forms, add appropriate paper attachments, and route through MSU's curricular process for recommendations and decisions.

College: <u>Science, Engineering and Technology</u> <input checked="" type="checkbox"/> Undergraduate Department: <u>Physics and Astronomy</u> <input type="checkbox"/> Graduate Program: <u>Physics B.S.</u> CIP # _____		(Check all that apply): Proposal # <u>305</u> Effective Date of Change: Academic Year <u>06-07</u> (For Office Use Only)						
Type of Change: <u>Bulletin modification</u> Proposed: _____ Title Current: _____ Title Proposed: _____ 24-Char. Abbrev: _____	<table border="1"> <thead> <tr> <th>Course Designator and Number</th> <th>Number of Credits</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table> <p>(if applicable)</p>		Course Designator and Number	Number of Credits				
Course Designator and Number	Number of Credits							

Include a course or program description for the Bulletin (30-40 words maximum for courses, 100 for programs):

Modify the bulletin.

Rationale or Justification for change:

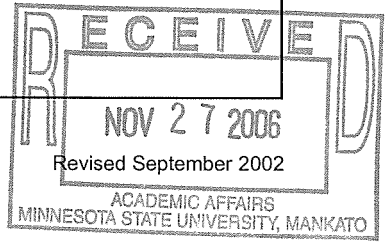
The Physics Department proposes a change in the course number of Modern Physics I and II from Phys. 435 and 436 to Phys 335 and 336 in order to better reflect the content of the courses. These are required courses for physics majors and minors. Thus the requirements for physics majors and minors in the bulletin should reflect this change.

*****For General Education or Cultural Diversity Courses Only*****

General Education Course: GE Category # GE Category Name (Maximum of 3 Categories) <u>N/A</u> <u>N/A</u> <u>N/A</u>		Cultural Diversity Course: (Please check one.) <input type="checkbox"/> Core (At least 75% devoted to topics of race, gender, sexual orientation, age, class, and disabilities as they occur in United States Society.) <input type="checkbox"/> Related (At least 25% devoted to the above topics or to a global perspective on topics related to African American, Asian, Hispanic, and Native American inhabitants of the United States.)
? For Writing Intensive Courses, attach a description of the kind and quantity of writing. ? For Upper Division Courses, include a description of the respects in which it is broad and general rather than narrow and specific, and so suitable as GE.		
Attach paper copies of the following: a. Syllabus or course outline. b. Course's student learning outcomes associated with each GE competency or CD designation. c. List of strategies to be used to assess students' achievement of each GE competency or CD designation.		

*****For New Courses*****

(Check all that apply): <input type="checkbox"/> Course is an elective. <input type="checkbox"/> Course is required for program <input type="checkbox"/> Pre- or Co-requisites: <input type="checkbox"/> Other courses are being changed or eliminated. (Explain.) _____	Instructional Type: <u>Lecture</u> Grading Format: <input type="checkbox"/> Grade <input type="checkbox"/> P/N _____ _____	Course will be offered: <input type="checkbox"/> Fall Semester <input type="checkbox"/> Spring Semester <input type="checkbox"/> Summer Session
<input type="checkbox"/> Course content or title is similar to courses in other departments. (Attach copy of letter of agreement with other program(s) contacted. Indicate the nature of the discussions and/or resolution of differences or potential conflicts.) Attach paper copies of the following: a. Syllabus or course outline. b. Course's student learning outcomes. c. A list of resources required to offer and support this course. d. A description of how teaching this course will affect department staffing. e. If 400/500 level course, an explanation of added expectations of graduate students.		





Minnesota State University, Mankato
Curriculum Proposal

Signature Page

Department

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature] 10/30/2006
 Department Chair Date

Comments:

College Curriculum Committee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature] 11/27/06
 Committee Chair Date

Comments:

College Dean

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

[Signature] 11/29/06
 Dean Date

Comments:

General Education Subcommittee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

 General Education Subcommittee Chair Date

Comments:

Undergraduate Curriculum and Academic Policy Committee

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

 UCAP Faculty Chair Date

Comments:

Faculty Association Graduate Committee

Recommended
 Not Recommended

 Faculty Association Graduate Chair Date

Comments:

Graduate Dean

Recommended
 Not Recommended

 Graduate Dean Date

Comments:

Academic Affairs Council

Recommended (Category/ies _____)
 Not Recommended (Category/ies _____)

 Assistant Vice President Date

Comments:

Senior Vice President and Vice President for Academic Affairs

Approved (Category/ies _____)
 Not Approved (Category/ies _____)

 Sr. Vice President / Vice Pres. Academic Affairs Date

Comments:

Program Requirements: the current program requirements and the modified program requirements are attached in a form suitable for direct comparison. There is no change in total credit hour requirement.

Resources required for the redesigned program: No new or additional resources will be needed to offer and support this modification.

Staffing: This modification will have no effect on staffing.

Library holdings: No additional library holdings will be required for this modification.

Rationale:

The Physics Department proposed a change in the course number of Modern Physics I and II from Phys. 435 and 436 to Phys 335 and 336 in order to better reflect the content of the courses. These are required courses for physics majors and minors. Thus the requirements for physics majors and minors in the bulletin should reflect this change.

Change in course requirements for the Physics B.S. Program

Current Requirements PHYSICS BS

Students interested in physics preparation leading to professional opportunities or graduate study are encourage to select this major.

Required General Education (9 credits)

MATH 121 Calculus I (4)
PHYS 221 General Physics I (5)

Recommended support courses (22 Credits):

CHEM 201 General Chemistry I (5)
CHEM 202 General Chemistry II (5)
COMS 272 FORTRAN Programming (4)
ENG 271 Technical Communications (4)
MATH 422 Partial Diff. Equation (4)

Required for Major (53 credits)

EE 230 Circuit analysis I (3)
EE 240 evaluation of circuits (1)
MATH 122 Calculus II (4)
MATH 223 Calculus III (4)
MATH 321 Ordinary Diff. Equation (4)
PHYS 222 General Physics II (5)
PHYS 435 Modern Physics I (3)
PHYS 436 Modern Physics II (3)
PHYS 441 Mechanics (4)
PHYS 447 Electricity and magnetism I (3)
PHYS 448 Electricity and magnetism II (3)
PHYS 457 Optics (3)
PHYS 461 Quantum Mechanics (4)
PHYS 465 Computer Appl. in Physics (3)
PHYS 473 Statistical Physics (3)
PHYS 475 Advanced Laboratory (2)
PHYS 492 Seminar (1)

Required Minor: None.

Proposed Requirements PHYSICS BS

There is be no change in this part.

Required General Education (9 credits)

There is be no change in this part.

Recommended support courses (22 Credits):

There is be no change in this part.

Required for Major (53 credits)

EE 230 Circuit analysis I (3)
EE 240 evaluation of circuits (1)
MATH 122 Calculus II (4)
MATH 223 Calculus III (4)
MATH 321 Ordinary Diff. Equation (4)
PHYS 222 General Physics II (5)
PHYS 335 Modern Physics I (3)
PHYS 336 Modern Physics II (3)
PHYS 441 Mechanics (4)
PHYS 447 Electricity and magnetism I (3)
PHYS 448 Electricity and magnetism II (3)
PHYS 457 Optics (3)
PHYS 461 Quantum Mechanics (4)
PHYS 465 Computer Appl. in Physics (3)
PHYS 473 Statistical Physics (3)
PHYS 475 Advanced Laboratory (2)
PHYS 492 Seminar (1)

Required Minor: None.

Change in course requirements for the Physics Minor

Current Requirement

Required Support courses (8 Credits)

MATH 121 Calculus I (4)

MATH 122 Calculus II (4)

Required for minor (14-16 credits)

PHYS 221 General Physics I (5) **AND**

PHYS 222 General Physics II (5) **OR**

PHYS 211 Principles of Physics I (4) **AND**

PHYS 212 Principles of Physics II (4)

ALSO required:

PHYS 435 Modern Physics I (3)

PHYS 436 Modern Physics II (3)

Required Electives

Choose a minimum of one course from the following courses:

PHYS 441 PHYS 447 PHYS 461

PHYS 465 PHYS 453 PHYS 457

PHYS 467 PHYS 473 PHYS 475

Proposed requirement

Required Support courses (8 Credits)

There is be no change in this part.

Required for minor (14-16 credits)

There is be no change in this part.

ALSO required:

PHYS 335 Modern Physics I (3)

PHYS 336 Modern Physics II (3)

Required Electives

There is be no change in this part.

Changes in Requirements for Physics science teaching BS.

Current requirement:

PHYSICS SCIENCE TEACHING BS

General requirements for programs in teaching the sciences can be found in the SCIENCE TEACHING section of this bulletin.

Proposed requirement:

PHYSICS SCIENCE TEACHING BS

no change

**Required General Education (3 Credits)
Recommended General Education (22-23 Credits)**

Including MATH 121

**Required General Education (3 Credits)
Recommended General Education (22-23 Credits)**

no change

Required Science Core (31-33 Credits)

Required Science Core (31-33 Credits)

Required Professional Education (30 Credits)

Required Professional Education (30 Credits)

Required for major (Core, 21 Credits)

MATH 122 Calculus II (4)
PHYS 381 Tutoring Physics (2)
PHYS 435 Modern Physics I (3)
PHYS 436 Modern Physics II (3)
PHYS 465 Computer Appl. in Physics (3)
PHYS 482 Teaching Methods and
Materials in physical Science
(4)
PHYS 492 Undergraduate Research (2)

Required for major (Core, 21 Credits)

MATH 122 Calculus II (4)
PHYS 381 Tutoring Physics (2)
PHYS 335 Modern Physics I (3)
PHYS 336 Modern Physics II (3)
PHYS 465 Computer Appl. in Physics (3)
PHYS 482 Teaching Methods and
Materials in physical Science
(4)
PHYS 492 Undergraduate Research (2)

Electives (Minimum of 8 Credits)*

There is no change in this part of the text.

Electives (Minimum of 8 Credits)*

There is no change in this part of the text.