0743

Minnesota State University, Mankato HOLD and CLEAR buttons only compatible with Acrobat V. 4 and 5

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: Science, Engineering and Technology
Department: Physics and Astronomy
Program: Physics B.S.
Type of Change Proposed: COURSE PROPOSALS — Course Withdrawal
Title Current: Semiconductor device physics laboratory
Title Proposed:
24-Char. Abbrev:

(Check all that apply):
☒ Undergraduate
☐ Graduate
CIP # _____

Proposal # 52
Effective Date of Change:
Academic Year 06-07
(For Office Use Only)

Course Designator and Number	Number of Credits
Phys 468	1

(if applicable)

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

Introduction to integrated circuit fabrication processes. Device layout, mask design, and experiment related to wafer cleaning, etching, thermal oxidation, thermal diffusion, photolithography, and metallization. Fabrication of basic integrated circuit elements: pn junctions, resistors, MOS capacitors, simulation and fabrication by SUPREM. Same as EE 480. Pre: PHYS 467

Rationale or Justification for change:

This course is never taught by the Physics Department, and will not be taught by Physics Department in the future.

For General Education or Cultural Diversity Courses Only

General Education Course:

GE Category # **GE Category Name (Maximum of 3 Categories)**

N/A
N/A
N/A

? 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.

Cultural Diversity Course:

(Please check one.)

☐ **Core** (At least 75% devoted to topics of race, gender, sexual orientation, age, class, and disabilities as they occur in United States Society.)

☐ **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.)

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:)
☐ Course is an elective.
☐ Course is required for program
☐ Pre- or Co-requisites:
☐ Other courses are being changed or eliminated. (Explain.)

Instructional Type: Lecture
Grading Format: ☐ Grade ☐ P/N

Course will be offered:
☐ Fall Semester
☐ Spring Semester
☐ Summer Session

☐ 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

X Recommended (Category/ies_____)
__Not Recommended (Category/ies_____)

Department Chair — Date: 10/6/2006

Comments:

College Curriculum Committee

X Recommended (Category/ies_____)
__Not Recommended (Category/ies_____)

Karen C. Chou — Committee Chair — Date: 10/20/06

Comments:

College Dean

__Recommended (Category/ies_____)
__Not Recommended (Category/ies_____)

Dean — Date: 10/23/06

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:

Department of Physics and Astronomy
Minutes of Meeting
Monday, October 2, 2006, 9:00 a.m., Trafton E-210

Present: T. Brown, P. Eskridge, R. Herickhoff, S. Kipp, I. Kogoutiouk, R. Palma, J. Pierce, A. Roberts, L. Schwartzkopf, H.-S. Wu, Y. Xu

1) The Minutes of the 9/11/06 department meeting were approved as written (Moved by L. Schwartzkopf and seconded by R. Palma, motion carried.)
2) Announcements/Good news by faculty
   a. University car rental policy – Faculty are now required to purchase buy liability and collision insurance when renting cars on official business if it is from a company other than Enterprise.
   b. Graduate Coordinator meeting –The College of Graduate Studies has some funding for recruitment. Our outreach efforts to the surrounding colleges and universities may benefit from this funding.
   c. Volunteers are needed for the Family Weekend, on Oct. 14 from 10:30 am – 12:00 pm. S. Kipp, L. Schwartzkopf and Y. Xu volunteered.
   d. R. Palma – There is a Physics colloquium at the University of Minnesota. The topic is "The origin of mass and feebleness of gravity." Russ Palma will try to get a 7-passenger van and take his students in Modern Physics class to attend the lecture.
   e. R. Palma -- There were responses from several universities for our outreach speakers. They also would like to send speakers here. We need to make our selections. A. Roberts will go to UW Eau Claire to give his talk next week.
3) Department equipment plan –
   After some discussion on the items listed in the equipment plan, L. Schwartzkopf moved to approve the Equipment Plan as corrected. P. Eskridge and S. Kipp seconded. The motion carried.
4) Report and proposals from Department Curriculum Committee:
   a. Y. Xu has distributed a proposal from the Department Curriculum Committee. Xu went through the items and their rationales. There were some discussions on the changes in the course numbers of Modern Physics I and II. It was pointed out that the third item (regarding graduate courses) was already done last year. L. Schwartzkopf moved to approve items 1 & 2 in the proposal as written. T. Brown seconded, and the motion carried.
   b. Y. Xu reported the responses to the proposal of 3-semester General Physics courses sequence from various departments. Some department (Biology, Chemistry, for example) have problems with credit hours, and there are ongoing discussion about this proposal. ECET is going to discuss this issue in their department this week.
5) Who's who nomination – Consensus was that the 3.5 GPA is a good cutoff. According to the list, Eric Raymer, Mridusha Shrestha, Jacob Simones, and Arbin Timilsina have GPA above 3.5. The department will nominate the students, and then the students must complete a form in order to be considered for Who's Who. Y. Xu will inform the students and given them the forms to be completed.
6) Fall party time and place
   L. Schwartzkopf – The party will be at 4 PM on Friday, Oct. 20 in TN- 164. There will be pizza, door prizes, a physics game, and prizes.
7) Seminar spending
   In the past few years, our department has taken the invited speaker out for dinner, and the meals of the speaker and the attending faculty were paid by the department. The department didn't pay an honorarium or the travel expenses of the speaker. The consensus is that we should pay the meals for the speaker and whoever invited the speaker, and also pay the speaker a $50 honorarium. Other faculty who would like to dine with the speaker should pay for their own meals.
   Y.Xu reported that the majority of the money in our foundation account is donated by Clint Crosby and Lockheed Martin Corporation. L. Schwartzkopf suggested that we should invite Mr. Crosby to MSU, M to show our appreciation for his continuous support to our physics program.
8) Computer science grant
   P. Eskridge and I. Kogoutiouk– There has been no meeting with the Computer Science Department yet.
9) Other:
   Please send library book requests to H-S. Wu and P. Esdridge by this Wednesday, Oct. 4.
   R. Palma announced the seminar speaker on Oct. 12th will be Mr. Bradley "Peanut" McCoy from the University of Minnesota.

Meeting adjourned at 10:0 AM.

Respectfully submitted: Hai-Sheng Wu

A proposal from Department Curriculum Committee
9/29/2006

The Department Curriculum Committee proposes to make the following changes in our catalog:

1. Modern Physics I and II:
Change the course numbers of from 435, 436 to 335 and 336. Eliminate 535 and 536.

Rational: The course contents are at 300-level, not 400-level. Graduate students are not supposed to take these courses.

2. Eliminate the following courses:
   Phys 467/567 (3) Semiconductor Device Physics
   Phys 468/568 (1) Semiconductor Device Physics Laboratory.
   These are double listed with
   EE 475/575 (3) Integrated Circuit Engineering,
   EE 480/575 (1) Integrated Circuit Fabrication Lab.

Rational: These courses are not required by our program, are not listed as physics electives either. These two courses have never been taught by our department, will never be taught by our department. These two EE courses are no longer being semiconductor device physics.

   We can recommend interested students to take the following two courses:
   EE 303, Introduction to Solid State Devices,
   EE 304, Lab: Introduction to Solid State Devices.

3. Withdraw the following two courses:
   Phys 641 and Phys 642, Mathematical Physics I and II
   Rational: We proposed a new math method course (Phys 640), and three other 600-level courses for our graduate program.