

Undergraduate Council
 New Course Course Change
 Core Category: Nat Sci Effective Fall 2008

or

Graduate/Professional Studies Council
 New Course Course Change
 Effective Fall __

1. Department: Phys College: NSM
2. Person Submitting Form: Donna W. Stokes Telephone: 3-3588
3. Course Information on New/Revised course:
 - Instructional Area / Course Number / Long Course Title:
PHYS / 1301 / Introductory General Physics I
 - Instructional Area / Course Number / Short Course Title (30 characters max.)
PHYS / 1301 / INTRODUCTORY GENERAL PHYSICS I
 - SCH: 3.00 Level: FR CIP Code: 48.0801.00 Lect Hrs: 3.0 Lab Hrs: 0
4. Justification for adding/changing course: To reflect change in prerequisite course
5. Was the proposed/revised course previously offered as a special topics course? Yes No

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WITHDRAWN BY
DEPARTMENT
12/5/07

If Yes, please complete:

- Instructional Area / Course Number / Long Course Title:
____ / ____ / ____
- Content ID: _____ Start Date (yyyy3): _____

6. Authorized Degree Program(s): B.A. PHYS
 - Does this course affect major/minor requirements in the College/Department? Yes No
 - Does this course affect major/minor requirements in other Colleges/Departments? Yes No
 - Are special fees attached to this course? Yes No
 - Can the course be repeated for credit? Yes No

7. Grade Option: Letter (A, B, C ...) Instruction Type: lecture ONLY (Note: Lect/Lab info. must match item 3, above.)

8. If this form involves a change to an existing course, please obtain the following information from the course inventory: Instructional Area / Course Number / Long Course Title
PHYS / 1301 / Introductory Physics I

- Start Date (yyyy3): 1993 Content I.D.: 281474

9. Proposed Catalog Description: (If there are no prerequisites, type in "none".)
Cr: 3. (3-0). Prerequisites: Grade of C- or better in Math 1330 or equivalent and pass diagnostic exam or Phys 1100 (C or above) Description (30 words max.): Primarily for majors other than physics and engineering. Credit may not be applied toward a degree for both Phys1301 and Phys1321. Elementary principles of mechanics and thermodynamics.

10. Dean's Signature: _____ Date: 10-02-07

Print/Type Name: Dean John Bear

U N I V E R S I T Y of H O U S T O N

CORE CURRICULUM COURSE REQUEST

Originating Department/College: Physics/NSM

Person making request: Donna W. Stokes Telephone: 713-743-3588

Dean's signature: _____ Date: _____

I. General Information:

Course number and title: Phys 1301 Introductory General Physics I

Complete catalog description (NOT required if attached to CBM 003 form):

CBM003 form attached

Category of Core for which course is being proposed (mark only one):

- Communication
- Communication: Writing Intensive Experiences in the Disciplines
- Mathematics
- Mathematics/Reasoning (IDO)
- Natural Sciences
- Humanities
- Visual/Performing Arts Critical
- Visual/Performing Arts Experiential
- Social/Behavioral Sciences
- U.S. History
- American Government

II. Objectives and Evaluation (respond on one or more separate sheets):

Call 3-0919 for a copy of "Guidelines for Requesting and Evaluating Core Courses" or visit the website at www.uh.edu/academics/corecurriculum

- A. How does the proposed course meet the appropriate Exemplary Educational Objectives (see **Guidelines**). Attach a syllabus and supporting materials for the objectives the syllabus does not make clear.
- B. Specify the processes and procedures for evaluating course effectiveness in regard to its goals.
- C. Delineate how these evaluation results will be used to improve the course?

**CORE CURRICULUM COURSE REQUEST
Supplementary Documentation
Phys 1301/Introductory General Physic I**

- A. See attached syllabus
- B. The outcome of this course is to provide knowledge of physical science, mathematics, and statistics required to support an understanding of Physics. Upon completion of this course, the student will have the ability to communicate orally and in writing in a clear concise manner, evidence of their scientific knowledge. To evaluate the courses contribution to the core curriculum, an evaluation of the students' achievements is attained through samples of students' work. Students' communication of solutions to both conceptual questions and word problems on final examinations must be logical and organized and must be understandable to a trained physicist. They must also demonstrate the ability to properly use mathematics to obtain solutions.

Also, to evaluate the courses contribution to the core curriculum, an end of the semester course evaluation form designed for lecture based classes is administered. The forms consist of 20 questions which cover quality of the information covered in the course, course organization, examination fairness and textbook quality. The questions also emphasize the quality of the instructor, including instructor-student interaction, instructor's overall knowledge of the material covered and the instructor's effectiveness for the course. The form also includes a comment section in which students can write in any additional comments regarding the course, which were not covered by the questions on the evaluation.

- C. Samples of student exams are evaluated by the faculty to determine if the expected outcomes of the course are met. In addition, statistics from the course evaluation forms are collected at the end of the semester. Statistics from all sections of the course are compared and inferences about the quality of the course, textbook and the instructors' teaching skills are determined. These results are disseminated to the undergraduate studies committee of the department, as well as to the all instructors in the department, so that the necessary course adjustments can be made.



COURSE TITLE/SECTION: Physics 1301 General Physics I/12380

TIME: 2:30-4 pm MW **LOCATION:** SEC- Rm. 105

FACULTY: Dr. Donna Stokes **OFFICE HOURS:** 2-3 pm TTH and by appointment
Science and Research #1, Rm. 531 C

E-mail: dstokes@uh.edu **Phone:** (713) 743-3588 **FAX:** (713) 743-3589

I. Course: Physics 1301 - General Physics I

A. Catalog Description: Primarily for majors other than physics and engineering, Credit may not be applied toward a degree for both Phys1301 and Phys1321. Elementary principles of mechanics and thermodynamics.

B. Prerequisites: Grade of C- or better in Math 1330 or equivalent and satisfactory score on diagnostic exam

II. Course Objectives: The objective of this course is to learn the principles of mechanics, sound and waves and develop the problem solving skills necessary to apply those principles to physical systems using algebra. Upon completion of this course, students will be able to:

1. clearly understand and apply Newton's Laws
2. proficiently solve problems
3. understand the formalisms of the theory and mathematical technique used to solve problems

III. Course Content: This course will include the following topical areas:

1. 1-D, 2-D and 3-D Motion
2. Newton's Laws
3. Work and Energy
4. Conservation of Energy
5. Momentum
6. Oscillatory Motion
7. Waves and Sound
8. Fluids
9. Thermal Physics

IV. Course Structure:

The web address for the class is www.uh.edu/~dwstokes/.

V. Textbook

Physics by James Walker (3rd ed., Pearson/Prentice Hall), available at the UH bookstore.

VI. Course Requirements

- A. Reading Assignments:** Reading quizzes covering the material from the reading assignment, consisting of 2-3 questions/problems, will be assigned over WebCt for each chapter. The quizzes will be available at least 24 hours before they are due and they will be due by the beginning of the lecture time. There will be a time limit for taking the quiz and you will be allowed 2 attempts for each quiz. Solutions for the quizzes will be discussed during the lecture and will be posted on the class website.
- B. Written Assignments:** 3-7 homework problems will be assigned at the beginning of each chapter and will be due approximately one week from that date. Three of the assigned problems will be chosen to be graded. They will be graded on a scale of 0 to 5, where 5 points are given for a completely correct solution and 0 points for a totally incorrect solution.
- C. Exams:** There will be one **diagnostic exam**, three **regular exams** and a **final exam** for a total of four exams for the class. The **diagnostic exam** can be taken from Tuesday, August 7th through Saturday, August 11th and Wednesday, August 22nd through Friday August 31st between 9 am and 7 pm in the CASA testing center located in room 222 of Garrison Gym. This exam will test your basic mathematical skills needed for the course. Grades on this exam will be used to predict your performance in the course. The diagnostic exam is worth 3% of your final grade. **You must score above 50% on the diagnostic exam to remain enrolled in the course.** The **regular exams** will be given during the scheduled examination period for this course which is on Fridays from 5:30 – 7:00 pm (see note on the course listing. The regular exams will cover 2-4 chapters and will consist of 2 to 3 problems each worth 10 – 20 points and 3-4 conceptual questions each worth 5 points. Partial credit will be given. Each regular exam will be worth 14 % of your final grade for a total of 42% for the three regular exams. The **final exam** will be comprehensive covering all chapters covered for the course. The format of the final exam will be similar to that of a regular exam. This exam will be given during the University scheduled time.
- a. Extra Credit:** Extra credit points will be given via questions answered during lecture using the classroom remote system. Each student will be responsible for purchasing a remote and registering the remote through einstruction.com (see website for more info: <http://www.uh.edu/clickers>). The remotes may be purchased at:

Cougar Byte
UC Arbor Level
9:00 am – 5:00 pm Monday-Friday
713-743-5310

To enroll your remote for the course, you will need the class key listed below.

Class Key: L29441G579

Notes: For all exams you may use any type of calculator. A formula sheet will be provided with all necessary formulas needed to solve the problems. A listing of homework assignments, with due dates and exam dates with the chapters to be covered on the exam can be found on my website at <http://www.uh.edu/~dwstokes>. Solution sets for all homework, quizzes and exams will also be posted on my website 2-3 days after they have been turned in to me.

VII. Evaluation and Grading

- 10% Reading Quizzes
- 20% Homework
- 3% Diagnostic Exam
- 14% Regular Exam I
- 14% Regular Exam II
- 14% Regular Exam III
- 25% Final Exam (Monday, December 10, 2007, 2-5 pm, SEC Room 105)

Policy on grades of I (Incomplete): Incompletes will be given only when documentation has been submitted to support the need to receive an incomplete, i.e., medical statements.

VIII. Consultation

My office is located in room 531-C of Science and Research #1. My mailbox is located in the Physic office, room 617 in Science and Research # 1. My office hours will be from 2 - 3 pm on Mondays and Wednesdays. If you can not see me during those times, you may schedule an appointment with me by calling me at (713) 743-3588 or e-mailing me at dstokes@uh.edu. The web address for the class is <http://www.uh.edu/~dwstokes/>.

Addendum: Whenever possible, and in accordance with 504/ADA guidelines, the University of Houston will attempt to provide reasonable academic accommodations to students who request and require them. Please call 713-743-5400 for more assistance.

Standard Disclaimer: This syllabus is subject to change at the discretion of the instructor.


UNIVERSITY of HOUSTON

Department of Physics
<http://www.uh.edu/~phys/>

Houston, TX 77204-5506

Fax: 713/743-3589
Phn: 713/743-3550

To: NSM College Curriculum Committee

From: Department of Physics Undergraduate Studies Committee 

Re: Justification for CBM003 forms0 for Phys 1301 and 1321

Date: October 2, 2007

This memo is to elaborate on the justifications for submission of CBM0003 forms for the change of the prerequisites for Phys 1301, General Physics I, and Phys 1321, University Physics I. The current drop rate for these courses is 25 – 40 % where a large majority of the students drop due to poor math and problem solving skills. To try to remedy this, the undergraduate studies committee of the Department of Physics has devised a plan to try to reduce the number of attempts a student will make in trying to complete the courses.

The Department of Physics has been administering a diagnostic exam for these courses for the past year in an attempt to identify students who are not prepared for the course. The diagnostic exam covers math and problem solving skills needed for the courses. The exam is administered through the Math testing center, CASA and is currently being made available to the students for a one week period approximately 2 weeks before the start of the semester and during the first week of classes. Students scoring 50% or below must show proof of completing the prerequisite for the course to their instructor or they will be dropped by the instructor. This information was communicated to the student through a note for the course which can be accessed when the student registers for the course in PeopleSoft as well as via e-mail from the instructors using the Faculty Center in PeopleSoft. On the first day of classes, the instructors advised all students that if they did not pass the exam, where not taking the exam is consider a score of zero; they

must show proof of completing the prerequisites. For those meeting the prerequisites and failing the exam, the instructor advised them that they should seek assistance to assure receipt of a passing grade for the course or drop the course and enroll in Phys 1100 to improve their math and problem solving skills before attempting the class.

Statistics from the exam from the past year exam shows that on average for the 3 semesters, for Phys 1301, approximately 35% , i.e., 184/530, of the students enrolled in the course failed the diagnostic exam and of those students failing the exam only 35%, i.e., 64/184, actually completed the course with a D- or better. We believe that by requiring students to have both a C- or above in MATH 1330 and pass the diagnostic exam that the students enrolled in the course will be prepared mathematically to complete the course. For Phys 1321, 17% (56/337) of the students enrolled in the course failed the diagnostic exam and of those failing the exam, only 23%, i.e., (13/56), actually completed the course with a D- or above. We believe that by including passing the diagnostic exam as a prerequisite, those students who are not mathematically prepared will be identified and can get assistance either by enrolling in Phys 1100 or seeking other assistance to improve their math skills before receiving a withdrawal or failing grade for the course. With these prerequisites in place for both courses, we believe that those students withdrawing from or failing the course will likely be due to the lack of understanding of the actual Physics concepts and how to use the math to analyze them rather than from not being prepared for the course.

In Fall 2008, the department plans to have the diagnostic exam available during the pre- and regular registration period as well as throughout the first week of classes. It will only be available to those students who have enrolled in the course; therefore, students can take the exam as soon as they have enrolled. If a student fails the exam, they will have ample time to drop the course and enroll in Phys 1100, or improve their math and problem solving skills and try to reenroll and pass the diagnostic exam at a later time.

For those choosing to take Phys 1100, if a grade of C or better is earned, the student does not have to pass the diagnostic exam to enroll in Phys 1321. The Phys 1100 course focuses on teaching word problem solving skills as well as basic mathematics, i.e., algebra, trigonometry and geometry needed to successfully complete the introductory physics courses. Both students from the Phys 1301 and 1321 course would be enrolled in Phys 1100. Currently, Phys 1100 has 7 students enrolled, 6 who are preparing for Phys

1301 and 1 preparing for Phys 1321. The course is currently a 3 hour/week laboratory course taught 1.5 hours for 2 days a week, i.e., 2:30 – 4 pm TTH. On one class day, the instructor has a lecture and a problem solving period and on the other, a lecture and a mini-laboratory period. Students preparing for both courses are learning the similar information through out the semester, however advance mathematics is introduce for the Phys 1321 students. The lecture period is split between lecture for 1301 and 1321. While lecture is continuing for the students in 1321, those in 1301 will begin the problem session or lab and the student for Phys 1321 will join in on the problem solving session or lab later during the class time. In the event that enrollment increases beyond 80 students for the Spring 2008 semester, the course will be scheduled to meet for 1.0 hours, three days a week, i.e. 2-3 pm MWF. The instruction schedule will then be changed so that on one day, the instructor lectures for Phys 1301 and the Phys 1321 student will have problem solving session. On day two, lecture for Phys 1321 and problem solving session Phys 1301 and on day three, all student will do laboratories.

The purpose of the diagnostic exam is to identify students who are not mathematically prepared for the course in advance so that students can either enroll in Phys 1100 or get assistance to ensure that they are prepared to take the course. The undergraduate committee in the Department of Physics strongly believes that by putting these prerequisites in place, that only students who are mathematically prepared will attempt the course, thereby increasing the chances of the student to pass in their first attempt. This is critical with the inception of the 6 withdrawal rule which has been put into place through Texas Legislation.