Course Syllabus

General Physics – Mechanics and Heat
PHYS 1301-02

Spring 2017

1. Location of Class Meeting: Farrington Building, Room 101

2. Class Meeting times: Tuesday and Thursday, 9:30 am – 10:50 am

3. Instructor: Dr. Binyang Hou

4. Office location: Farrington Building, Room 312

5. Instructor contact information: Phone: 936.294.1600; Email: bxh021@shsu.edu

6. Office hours: 8:00-9:15 and 2:30 pm – 3:45 pm TR or by appointments

As per University policy, other times are available by appointment only. These office hours are subject to change and revision without prior notification during the semester for a variety of university related functions or instructor illness.

7. Course description:

This course is described in the Catalog as:

PHYS 1301 General Physics — Mechanics and Heat. A modern treatment is made of the laws and principles of mechanics and heat. Derivations are carefully done using a non-calculus approach and considerable problem work is required. Prerequisite: Credit or registration for MATH 163 or equivalent. Credit 3.

It is assumed that the student has sufficient knowledge of algebra and trigonometry to easily use these tools to solve a wide range of problems. Additionally, the student is assumed to have substantial experience with operating their calculator to obtain numerical results. Finally, it is assumed that the student has completed high school and has a detailed knowledge of the material covered in the K-12 TEKS.

8. Course objectives:

The objectives of this course are set to meet the requirements imposed by the Texas Higher Education Coordinating Board's Lower Division Academic Course Guide Manual through the common course numbering system. The common course number for this class is PHYS 1301. To successfully complete this course, the student should be able to perform the following tasks:

1) State and understand the basic laws of classical mechanics including, but not limited to, Newton's laws of motion, conservation of energy and momentum. 2) Use the laws of physics to conceptually analyze common physical situations 3) Understand the basic procedures of vector analysis and apply them to forces; momenta, and angular momentum. 4) State and understand the basic concepts of thermodynamics. 5) Use the Laws of Thermodynamics to understand the energy flow through a complex system. 6) Be able to use physics concepts to obtain numerical answers to a wide range of problems.

9. Required textbooks:

The required book for this class is James S. Walker, "Physics", 5th ed. (Pearson, San Francisco CA, 2016 ISBN: 978-0-321-97644-4). Students are required to acquire a copy of the textbook prior to the third class meeting.

10. Required supplies:

The following supplies are required for this course:

1) Writing instrument such as a pen or pencil

2) Scientific calculator with the following functions: sine, cosine, square root, exponentiation, scientific notation. The calculator on your smart phone is generally not adequate for this course.

3) Notebook or ring binder with appropriate paper.

4) Textbook

5) Stapler

11. Optional texts, references, and supplies: None.

12. Attendance policy:

As per Federal regulations, attendance will be taken at every class by means of a sign-in sheet. The student will be required to sign the sheet. Failure to do so will result in the student being considered absent for the class. Federal regulations, and University policy, require that the instructor reports the last day of attendance any time that a student drops, withdraws from, or fails the course.

Attendance is not used to calculate the final course grade.

13. Assignments:

Three homework assignments will be given throughout the semester. Late assignments will not receive full credit.

14. Homework grades:

Homeworks are mandatory! Homeworks are due before the class starts on the due days as solutions will be given during the class and posted on blackboard. The full grade for each homework is 10 points and will be credited as bonus points to the final grade of the class.

Homework grades will be provided on "Blackboard" as a courtesy only - the official grades are maintained off-line.

15. Exams:

There will be three exams for this course. All exams will consist of five to ten problems that must be solved. Full grade for each exam is 100 points. Because of the nature of the subject, all exams are cumulative, although recent material will be emphasized. The final exam will be held on the final week of the semester. The scheduled dates for the exams are given in the tentative schedule at the end of the syllabus.

The following additional rules and conditions apply:

1) Attendance at exams is mandatory. Failure to attend will result in the grade of zero.

2) Exam dates will not be changed due to conflicts with other courses. Failure to attend will result in a grade of zero being given to the student.

3) Make-up exams will not be given without a valid medical excuse signed by a licensed physician or the student is in compliance with the Religious Holy Days policy given below.

16. Grading plan:

The official grades and calculations are maintained off-line. Only the official grades are used to calculate the final course grade. The average course grade is calculated as a simple unweighted average of the exam grades: Avg = 1/3(Exam1 + Exam2 + Exam3) + HW (as bonus 3x10).

After obtaining the average, letter grades will be assigned according to the following scale without a curve:

85 ≤ A

70 ≤ B < 85

55 ≤ C < 70

45 ≤ D < 55

F < 45

University mandated parts of syllabi:

Student Syllabus Guidelines: You may find on-line a more detailed description of the following policies. These guidelines will also provide you with a link to the specific university policy or procedure:

http://www.shsu.edu/syllabus/

Academic Dishonesty: Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. See Student Syllabus Guidelines.

Classroom Rules of Conduct: Students are expected to assist in maintaining a classroom environment that is conducive to learning. Students are to treat faculty and students with respect. Students are to turn off all cell phones while in the classroom. Under no circumstances are cell phones or any electronic devices to be used or seen during times of examination. Students may tape record lectures provided they do not disturb other students in the process.

Student Absences on Religious Holy Days: Students are allowed to miss class and other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Students remain responsible for all work. See Student Syllabus Guidelines.

Students with Disabilities Policy: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and email disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with

the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf

Visitors in the Classroom: Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.

17. Tentative Lecture Schedule

Week	Date	Material/Homeworks/Exams
1	January 19	Chapter 1 – Introduction to Physics
2	January 24	Chapter 2 – One-dimensional Kinematics
	January 26	Chapter 2 (continued)
3	January 31	Chapter 3 – Vectors in Physics
	February 2	Chapter 4 – Two-dimensional Kinematics
4	February 7	Review of Ch. 1-4
	February 9	Chapter 5 – Newton's Laws of Motion
5	February 14	1st homework due
	February 16	Exam #1 (Ch. 1-4)
6	February 21	Chapter 5 (continued)
	February 23	Chapter 6 – Applications of Newton's Laws
7	February 28	Chapter 6 (continued)
	March 2	Chapter 7 – Work and Kinetic energy
8	March 7	Chapter 7 (continued)
	March 9	Chapter 8 – Potential Energy and Conservation of Energy
9	**March 13-17**	**Spring Recess for Students and Faculty**
10	March 21	Chapter 8 (continued)
	March 23	Review of Ch. 5-8
11	March 28	Chapter 9 - Linear Momentum and Collisions
	March 30	2nd Homework due
12	April 4	Exam #2 (Ch. 5-8)
	April 6	Chapter 10 – Rotational Kinematics and Energy
13	April 11	Chapter 10 (continued)
	April 13	Chapter 11 – Rotational Dynamics and Static Equilibrium
14	April 18	Chapter 11 (continued)
	April 20	Chapter 16 – Temperature and Heat
15	April 25	Chapter 17 – Phases and Phase changes

	April 27	Chapter 18 – The Laws of Thermodynamics
16	May 2	Review of Ch. 9-11 & 16-18
	Mary 4	3rd Homework due
17	**May 8-11**	**Exam 3 (Final Exam:** Ch. 9-11 & 16-18**)**