

**SYLLABUS**  
**Trig-Based Physics I Fall 2004**  
**114-104 MTWF 11:15-12:05 ILB 240**

**Instructor: Dr. Kevin Lenton**

ILB 104

(251) 460 5484 (Ext. 6-5484)

[klenton@jaguar1.usouthal.edu](mailto:klenton@jaguar1.usouthal.edu)

I encourage you to see me if you have questions about the course material. Office hours will be posted on the door of the Physics Department, but other meeting times can be arranged.

**Course Objectives:**

This course is the first semester of a two-semester introductory sequence in trig./algebra-based physics with laboratory.

The student will be able to:

1. State the principle laws of Physics (mechanics, sound, and thermodynamics)
2. Explain these laws to friends and family
3. Apply them to problem solving using trigonometry
4. Make predictions about everyday phenomena involving Physics.

**Required Texts:** Physics, 2nd Ed., by James Walker

**Course Policies:**

A key to success in this class is the regular completion of homework problems. Total proficiency on homework problems is required. You should work as many of the odd numbered problems as required for a good understanding of the material. Because problems are worked and supplemental material is discussed in class, you are expected to attend all lectures.

**Laboratories:**

Laboratory attendance is mandatory. *You must have a passing average in lab to pass the course.* If you miss a lab for a *good* reason, the lab may be made up later in the same week (or earlier if anticipated) provided

1. Your laboratory instructor agrees, *and*
2. The lab that you will be going into has the explicit approval of that laboratory instructor. The departmental secretary will be glad to help you if you have trouble contacting your lab instructor.
3. If you are sick or there are no more labs that week then a written request so stating may be submitted to your laboratory instructor, who will accept or reject it. If the excuse is accepted, the number of labs is reduced to 11 in the averaging process. If the excuse is rejected, the missed lab is given a zero.

Students having previously completed the course with satisfactory laboratory grades may request to have the laboratory waived. Laboratory experiments which were not performed or for which a grade of C- or lower was earned must be repeated. Laboratory waiver request forms must be processed at the beginning of the semester. See the departmental secretary as soon as possible; it *must* be completed by 5:00 PM, Thursday, August 26.

**Make-up tests:**

If you miss an exam due to illness or other good reason a makeup exam will be given at the end of the semester. Only one make-up test is given and only one test may be made up. You may take the makeup exam only if you have presented the instructor with a valid written excuse within 48 hours of the missed test. The makeup test is comprehensive over the entire semester's material and is more difficult than the regularly scheduled tests. Dates of the examinations will be changed only in extreme circumstances; you will be given at least one week's notice if this rare occasion should arise.

**Academic Honor Code**

Dishonesty on any examination will result in a failing grade in the course. Only **non**-programmable calculators are allowed on the tests; their use will be tantamount to using a "cheat sheet". If you have any question concerning the legality of your calculator see me before the first test.

**Evaluation:**

Tests (51 % of final mark), a comprehensive final examination (24%), weekly quizzes (15%; this may include some assignments) and written laboratory reports (10%) will be used to assess how well you have achieved the course objective. Letter grades will then be awarded as given below:

$\geq 90$	A
80 - 89	B
70 - 79	C
60 - 69	D
$< 60$	F

**Americans with Disabilities Act**

In accordance with the Americans with Disabilities Act, students with bona fide disabilities will be afforded reasonable accommodation. The Office of Special Student Services will certify a disability and advise faculty members of reasonable accommodation.

Week Starting	Chapter; Topics	Recommended Problems
August 23	1,2; Measurement, 1D Motion	1:2,5,9,18,27,36 2:3,6,16,21,25,26,27,29,31,37,39,43,49,53,77,81
30	3; Vectors	3:8,11,19,20,21,25,28,34,37,43,47,52,59
September 6	4; 2D Motion Newton's Laws of Motion I	4:3,4,13,16,19,29,34,38,45,53,57,63
13	5; Newton's Laws of Motion II	5:7,15,17,23,24,27,33,35,36,39,42,43,44,55,66
20	6; Applications of Laws Test One, September 17	6:7,8,13,20,23,26,32,35,37,40,45,47,60,69,71
27	6,7 Work Energy	7:12,13,18,20,21,29,32,33,36,43,44,58,59
October 4	7,8, Potential Energy	8:5,11,12,18,19,22,33,35,38,39,41,57,65,75
11	8,9; Linear Momentum	9:5,15,17,20,25,27,31,34,35,38,41,61,73
18	9,10; Rotational kinematics	10:4,10,17,19,29,36,43,44,51,52,61,63,73,76
25	11; rotational dynamics Test Two, October 22	11:5,11,14,19,30,35,39,43,51,54,59,63,69,79
November 1	13; Oscillations	13:1,10,13,21,24,29,32,44,45,51,53,63,65,73,77
8	14,15, Waves I	14:5,11,12,15,16,23,29,32,40,45,53,55,61,71,77
15	15,16, Waves II, Heat Test Three, November 19	15:11,16,25,29,33,38,45,51,57,58,74,75,83,89
22	Thanksgiving Holidays: 24 – 26	16:10,15,23,35,37,40,45,46,58,65,67
29	17, Ideal Gasses	17:11,15,20,25,31,32,43,57,59,62,69,72,73
December 6	18, Thermodynamics	18:5,8,15,18,25,39,41,49,52,57,61,65,81,83,86
	Final Examination	

### Syllabus Change Policy:

Since all classes do not progress at the same rate, the instructor may wish to modify the above requirements or their timing as circumstances dictate. For example, the instructor may wish to change the number and frequency of exams, or the number and sequence of assignments. However, the students must be given adequate notification. Moreover, there may be non-typical classes for which these requirements are not strictly applicable in each instance and may need modification. If such modification is needed, it must be in writing and conform to the spirit of this policy statement.

# PH 114L: Alg-Trig Based Physics I Laboratory

## Fall 2004

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**Instructor:** Marija Novovic-Zec, M.S.  
**Office:** ILB, Room 225  
**Office Hours:** Tuesday 2:00-3:00  
Thursday 11:00-12:00  
**Office Phone:** 460-6224 ext. 1374  
**E-mail:** mnovovic@jaguar1.usouthal.edu  
**Manual:** Physics Experiments for PH 114 & 115, 2<sup>nd</sup> edition, 2000.  
**Lab Meetings:** ILB 120

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**Goals:** Each lab is designed to demonstrate a particular principle or law, and give the student the concrete example of its function in the physical world. Students are expected to gather a deeper understanding of the physical phenomena, its underlying mathematics and principal experience reporting their observations.

**Attendance Policy:** The lab is an integral part of the course, and attendance to labs is mandatory. You are expected to arrive on time, and to complete assignments as scheduled. With a valid excuse and instructor's permission you will be allowed to make up the lab during the week of the missed lab. Make up work must be turned in to the instructor of the make up class attended.

**Students with Disabilities:** In accordance with the Americas with disabilities Act, students with disabilities who are registered with the Office of Special Student Services will be afforded reasonable accommodations in completing lab assignments.

**Lab Reports:** Each lab must include and will be graded for the following:

*Preliminary Assignment (10%)*  
*Introduction & Equipment (5%)*  
*Theory (20%)*  
*Data (20%)*  
*Calculations & Data Analysis (25%)*  
*Conclusion (20%)*

Preliminary assignment must be turned at the beginning of the class. The lab reports will be typed or handwritten individually. It is expected that group members will share the same data collected during the experiment, but the content of the report itself should be unique for each individual. Material copied from the lab manual, textbook any printed/electronic source etc. without proper citations or material copied from another student will be assigned a grade of zero.

At the end of class you must turn your current as well as the graded lab report from the previous week. Your graded reports will be kept on file and will not be returned.

Late work will not be accepted.

The average of all lab reports will determine your final lab grade for the semester

**It is the policy of the Physics Department that you must pass the laboratory in order to pass the course.**

**Lab Schedule:**

<b>Week of</b>	<b>Experiment Number</b>	<b>Topic</b>
Aug 23-27		Introduction
Aug 30-Sep 3	1	Uncertainties
Sep 6-10	Labor day - No Lab	
Sep 13-17	2	Density
Sep 20-24	3	Freely Falling Bodies
Sep27-Oct 1	4	Dynamics
Oct 4-8	5	Work-Energy Theorem
Oct 11-15	6	Conservation of Momentum
Oct 18-22	7	Centripetal Acceleration
Oct 25-29	8	Moment of Inertia
Nov 1-5	9	Ballistic Pendulum
Nov 8-12	10	Simple Harmonic Motion
Nov 15-19	11	Mechanical Waves
Nov 22-26	Thanksgiving - No Lab	
Nov 29-Dec 3	12	Mechanical Equivalent of heat