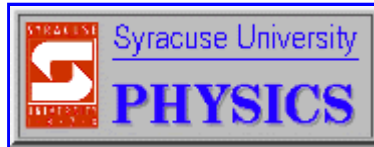


These pages supplemented the Fall 1995 course offer
Physics. These web pages have been revised to fix-u
personal data.

ing of PHY209: Space and Time in Elementary
p some broken links and to update some

NEW Recently, I have scanned in the lecture notes that
from the Syllabus page.

I handed out in class. They are available



PHY209

Space and Time in Elementary Physics

Fall 1995

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-
- [General Information](#)
 - [Fall 95 Syllabus/Assignments](#) **NEW**
 - [The most recent PHY209 class](#) (not taught by me)
-

- [Rob's Bookmarks](#)
- [Education bookmarks](#)

Rob Salgado (salgado@physics.syr.edu)

- [Kinematics applet](#)
- [The VRML Gallery of Electromagnetism](#)
- [notes from my course in electromagnetism](#)
- [The Light Cone - an illuminating introduction to Relativity](#)
- [The Twin Paradox Applet](#)

Recently, I have scanned in the lecture notes that was not able to cover a few topics on this syllabus

I handed out in class. In order to spend more time . I have included the notes that I would have distributed.

onsome topics, I distributed.

Warning: these scans are 850x1100.gif files varying in size. Each scan is a single HTML file with several images or as separate the [PHY209 notes](#) directory.

in file size from 10 kb to 100 kb. Each handout can be retrieved as a single image. You may also retrieve the images manually

by browsing in



PHY209

REVISED

Space and Time in Elementary Physics

Fall 1995 Syllabus

Course Syllabus - [Course Homepage](#) - [Course Information](#)

Since February 23, you are visitor number



"Physical questions" are denoted by a ■

SEPTEMBER: GEOMETRY AND ALGEBRA

Tu Aug 29

The Getting to Know You Quiz/Questionnaire

Preview to the Internet. Get to know your calculator.

Th Aug 31

[Introduction to the Internet and the World Wide Web](#)

Tu Sep 5

[Euclidean and non-Euclidean geometry](#) ([page 1](#) [page 2](#) [page 3](#))

What is π ?

■ *How do we know the earth is not flat?*

Th Sep 7

[Euclidean geometry: Angles, Lengths, Areas, Volumes](#) ([page 1](#) [page 2](#) [page 3](#) [page 4](#) [page 5](#) [page 6](#))

Basic measurements. Basic units of the metric system.

Tu Sep 12 QUIZ

[Cartesiangeometryandgraphingfunctions.](#) ([page1](#) [page2](#) [page3](#) [page4](#) [page5](#) [page6](#))

Basicgraphingofsimplefunctionsandtakingdata fromphysicallsituations.

■ *Introductiontokinematics:linearmotionwiththe SonicRanger.Galileangravity.*

ThSep14

[EquationSolving](#) ([page1](#) [page2](#) [page3](#) [page4](#) [page5](#) [page6](#) [page7](#) [page8](#))

Algebraicandgeometricinterpretations.Mathematic allyformulatingthephysicalproblem.

■ *Kinematicsofthefallingbody.*

TuSep19  **QUIZ**

MoreEquationSolving

ThSep21

[WelcometotheCarrierDome](#) ([page1](#))

■ *Ameasurementofthespeedofsound.*

TuSep26  **QUIZ**

[TheTriangleandTrigonometry\(triangles\)](#) ([page1](#) [page2](#) [page3](#))

Exploitingscalingsymmetry(proportions).ThePythagoreanTheorem.

■ *Howtallisthatbuilding?Introductiontogeometricoptics(thelawofreflection).*

ThSep28

[TheTriangleandTrigonometry\(trigonometry\)](#) ([page1](#) [page2](#) [page3](#))

Whatdoessine,cosine,andtangentmean?

■ *Moregeometricoptics(thelawofrefraction).*

OCTOBER: TRIGONOMETRYANDVECTORS

TuOct3  **QUIZ**

[PolarCoordinatesandPeriodicFunctions](#) ([page1](#) [page2](#) [page3](#) [page4](#) [page5](#) [page6](#))

ThOct5

[TheVectorI\(algebra\)](#) ([page1](#) [page2](#) [page3](#) [page4](#))

Whatisavector?Basicalgebraicoperationsandgeometricalinterpretations.

TuOct10  **QUIZ**

[TheVectorII\(dot -products\)](#) ([page1](#) [page2](#) [page3](#) [page4](#))

ThOct12

[TheVectorIII](#) (components)([page1](#) [page2](#) [page3](#) [page4](#) [page5](#) [page6](#))

TuOct17  **QUIZ**

[TheVectorIV](#) (application:force)([page1](#) [page2](#) [page3](#))

■ *Theinclinedplane*

ThOct19

[TheVectorV](#) (application:Newton'sLawofMotion)([page1](#) [page2](#) [page3](#) [page4](#))

■ *Dynamicsofthefallingbody*

TuOct24

[TheVectorVI](#) (cross-products,Application:torque)

■ *StaticsandStableConfigurations.CenterofMass. Thehangingsign.*

ThOct26

[LargeNumbers,FundamentalConstantsofPhysics](#) ([page1](#) [page2](#) [page3](#))

ThePowersofTen(video).

■ *Someconstantsofnature(e.g.thespeedoflight, theAvogadronumber,theGravitationconstant).*

NOVEMBER: CALCULUS

TuOct31

The Exponential function

What is it? Growth and decay.

- How far does a basketball bounce back up? The capacitor.

ThNov2

[Linear Approximations](#) ([page1](#) [page2](#) [page3](#))

Intuitive introduction to limits and series expansions

TuNov7

[Differential Calculus I](#) ([page1](#) [page2](#) [page3](#) [page4](#))

What is differential calculus about?

- Average speed vs. Instantaneous speed.

ThNov9

[Differential Calculus II](#) ([page1](#) [page2](#) [page3](#) [page4](#) [page5](#) [page6](#))

First and Second Derivatives.

- Linear motion revisited.
-

TuNov14

[Differential Calculus III](#) Optimization. ([page1](#) [page2](#) [page3](#) [page4](#) [page5](#))

- Projectile motion revisited. Fermat's Principle of Least Time.

ThNov16

[Energy and The Harmonic Oscillator and a Glimpse of Integral Calculus](#) ([page1](#) [page2](#) [page3](#) [page4](#) [page5](#) [page6](#))

TuNov21

[Energy and The Harmonic Oscillator and a Glimpse of Integral Calculus](#) (continued)

What is integral calculus about?

- Linear and projectile motion re-revisited.

ThNov23

Thanksgiving

TuNov28

[Momentum and Energy](#) ([page1](#) [page2](#) [page3](#))

ThNov30

[Newtonian Gravitation](#) ([page1](#) [page2](#))

- The Moon is Falling!
-

DECEMBER: FUNSTUFF

TuDec5

Funstuff

- Why is there no air on the Moon?

ThDec7

Exam



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