

Phy.201-201 (4575) 2018 Spring Syllabus (College Physics, MWF 8am)

Instructor: Dr. Curt Foltz ; foltzc@marshall.edu ; Science 159 ; (304) 696-2519

office hours: MWF 9:30-11:30 , TR 11:30-12:30 & 1:30-2:30pm (in Sci.Bldg. till 7-ish daily)

other times by appointment or chance; see www.science.marshall.edu/foltzc

Class meets MWF 8:00am – 8:50am, from Jan.08 – Apr.27 (Final Exam Apr.30) in Science 276

You are expected to enroll in Phy.202 Laboratory during the same semester as Phy.201 .

Lectures include class discussion and exercises – the class is customized for participants.

Phy.201 is : a 3-credit undergrad course, intended for Natural (not Physical) Science majors.

Chem and Math majors should consider Phy.211+213+320 instead of Phy.201+203 .

Prerequisites: Math (130+122) or (127+122) or 132 ... or 140, or 229

We will represent the result of a measurement *procedure* as a Real number of *Units*.

We'll routinely abbreviate each physical quantity as a letter (with adjectives as subscripts);

we will practice translating statements about Nature to, and from, their symbolic form; we'll algebraically manipulate these symbols (Mth.127 or 130) to reword relationships;

we will factor physical quantities into formulae so their functional dependence is explicit;

we'll substitute numerical values for quantities to compute others, or calculate predictions.

We'll develop and apply Geometry and Functions of Trigonometry (Mth.122) more gently.

If your math skills are rusty or shaky, plan on 2 hours extra per week for the first 4 weeks.

Required: *College Physics 1st ed.* by Etkina, Gentile, & VanHeuvelen's (Pearson, 2014)

and *Mastering Physics* Access code into MPFOLTZ20118SP (Phy201Sp18w/Foltz) (Pearson)

calculator : non-programmable, with buttons (not menu) for EE or EXP , x^2 , \sqrt{x} , cos , \sin^{-1}

web browser ... to link to our Phy.201 web site content and to links beyond (MUonline)

attendance: (with pen or pencil, calculator, textbook) at each class meeting, ready to learn

time & effort: outside of class, about 6 effective hours/week to undertake assignments

Recommended: notebook with blank pages ... extremely useful ! (out-of-class and in-class)

courage ... to ask for help before you're hopelessly lost (in class) ... email between classes

study partner ... it's more fun than by yourself; if you miss class, find out what we did !

MU email access ... I will use it as an official communication channel (if schedule slips)

a workbook (e.g, Shaum's Outline, or Boone's MCAT Physics Guide) ... might help some

a different author's treatment of idea might be right up your alley (Drinko, or Sci.159).

Overview: Phy.201 is the first half of a two-semester sequence to introduce the concepts and principles which describe and explain the physical world's behavior. Theories based on fields (gravity) and other non-material quantities (Energy, momentum, Action) will be applied to simplified scenarios in diverse situations (involving biology, geology, space, and technology, as well as the typical classroom) to arrive at quantitative descriptions of the processes which would ensue. Changes that occur during a process will be dealt with using algebra (ratios) rather than calculus (functions). A few indispensable calculus results will be quoted as such, and then used freely. Phy.203 (next semester) is permeated with invisible field quantities, microscopic topics, and abstract non-intuitive concepts; be ready.

Schedule Plan: We will split the course into 3 Units, with each Unit composed of 3 or 4 topics. A typical topic will include 1 textbook chapter in plus a few additional aspects (sections).

Class web site: www.science.marshall.edu/foltzc/p20118sp.htm has schedule detail plan

Homework assignments will be posted to www.masteringphysics.com for rapid score feedback.

textbook “suggested questions” will not be graded, but should guide classroom activities.

textbook “suggested problems” (not graded) should inform your study-group activities.

links to additional practice opportunities, and help, are available via our class web-site.

A topic Quiz will be a closed-book, closed-notes solo event that will focus on that new topic.

Matching/mult.choice/completion/drawing/ranking/T-fixF *questions* will probe deeply for causes,direction,units,facts,relationships,vocabulary. Indirect *problem* scenarios (essay) might

want 2-4 equations (“4-7 sentences”) to complete.... a Quiz should take 1 kilosecond.

A Unit Exam will be a 1 hour, closed-book, closed-notes solo event, to relate topics in that Unit to each other and to any previous topics (all Exams are essentially “comprehensive”).

Exam page 1 will include key formulas (not equations). No phones. No tablets.

1st Exam will be in mid-Feb; 2nd Exam at the end-of-Mar; 3rd Exam April 30, in Finals week.

Point Plan: 3 Unit Exams x 60 points/exam = 180 points (50% of course grade; 17% each)

1 Final Exam (Units 1 & 2) = 30 points (8% of course grade ... $\approx \frac{3}{4}$ letter)

11 topic Quizzes x 10 points/Quiz = 110 points (30% of course ... $2\frac{3}{4}\% \approx \frac{1}{4}$ letter)

11 topic homeworks x 5 points/hw = 55 points (15% $\approx 1\frac{1}{2}$ letters ... $1\frac{1}{4}\%$ each)

The count of home-works and Quizzes is approximate ... if the count changes, then the “points each” will remain constant, so the total points (and % of course grade) will change.

Letter Plan: 100% > A > 85% > B > 75% > C > 65% > D > 55% > F

I may adjust any letter boundary(ies) downward at any time without advance notice.

Absences: if you miss a quiz or an exam, you must schedule with me to make it up before the next class meeting – otherwise the make-up will probably not be of similar difficulty.

Statements that are valid for ALL Classes at Marshall: see these policies in the undergrad catalog!

Academic Dishonesty Policy: honesty is the foundation of science; dishonesty $\rightarrow 0$ for that effort.

Students with Disability Policy : the student must initiate procedures ... first, see info at

www.marshall.edu/disabled/ ... then, contact the Office of Disabled Student Services in Prichard Hall 117 (696-2271) , which will communicate with me.

Affirmative Action Policy: Marshall University intends to provide equal opportunity for all.

Computing Services’ Acceptable Use Policy: don’t “lend” your account, or spam, or solicit

see www.marshall.edu/ucs/CS/acptuse.asp

Inclement Weather Policy : don’t overly-risk your safety trying to get to or from class in a blizzard.

Incomplete Grade Policy: to receive a grade “I”, you must have already done $\frac{3}{4}$ of the course work, at an acceptable (passing) proficiency (percentage) ; that means after Exam 2.