

Syllabus for PHY 102, *Atoms to Galaxies*, Section 7-8, FA2018

Course Details

Atoms to Galaxies, PHY 102, Sections 7 & 8, Fall 2018

- Lectures: TuTh 12:35 – 1:50 PM in MLT 210
- Laboratory: TUE-FRI 9:00am – 4:00pm in MLT 202 & 204

Instructor

Dr. Uttam Manna

Office: MTL 313C

Office Hours: Tu & Th 2:00 - 3:30 pm or by appointment

Email: umanna@ilstu.edu (Preferred method of contact)

Phone: 309-438-2037

Textbook (Recommended but NOT Required)

- Conceptual Physical Science, 5th Edition, Hewitt, Suchocki & Hewitt, ©2012, Pearson, ISBN13: 9780321753342

Lab Manual (Required)

- Hands on Activities for Physics 102 by Ansher & Goderya, ISBN 9781609045265

ReggieNet

- ReggieNet is an online course management tool licensed by ISU.
- ReggieNet will be used to upload syllabus and other course materials, set-up emails, create assignments, grading, announcements, etc. – hence ReggieNet is going to be an essential component of the course. To get started with ReggieNet, please visit <http://ctlit.illinoisstate.edu/technology/reggienet/students/>

Clicker (Required)

- Publisher: TURNING TECHNOLOGIES,
- Clickers are based on TurningPoint Cloud technology used as audience response device.
- Clickers will allow to poll face-to-face class in real time, display the results, engage you in your learning, and get a sense of level of understanding of the course materials.
- Clicker responses will be recorded and incorporated into grades. **100% credit for correct answers and 50% credit for incorrect answers.**
- To make your classroom click response count, please register your unique clicker ID with ReggieNet and bring it to *every* class with you.

Instructions for registering your Clicker

- If you created a working TurningPoint account last semester, you should NOT have to re-register this semester if you are using the same clicker. (Once successfully registered, the account works for any ReggieNet course for as long as the subscription lasts.)
- For details on how to register your new clicker for the classroom, please visit <https://ctlt.illinoisstate.edu/technology/clickers/materials/>
- Each of you should have your own unique “**clicker ID and license**”, which can be purchased in either TurningPoint online store or in the bookstore.
- To order online, log on to <https://reggienet.illinoisstate.edu> and visit “PHY 102 007 FA2018 - Atoms To Galaxies” course website, and click “Clicker” menu located at the bottom left menu (above Help menu).
- Clicking the “Clicker” option would direct you to TurningPoint Technology website to create an account and purchase a bundle of clicker and license online.
- Alternately, you can purchase the Clickers and license in the Alamo Book Store.
- Note that you need to purchase both the clicker and the subscription. Just purchasing the clicker would only allow to participate in the classroom polling, but your response won’t be recorded for it to contribute towards your grade.

Details of the Course Components

Lectures

- The lecture will be focused on learning physics concepts that can be used to solve daily life problems.
- Almost every class will start with a couple of daily life examples which requires understanding of some physical principles; subsequently the physical principles will be discussed in greater detail.
- I will use combinations of white-board, power point, movies, pictures, demonstrations, online simulation tools, *etc.* to explain the physical principles that will help you to develop a qualitative understanding of the topic under discussion.
- I highly encourage you to participate in the class-room during lectures.
- Raise your hand if you have any questions and concerns without any hesitation at any time during the lecture.

Homework

- Typically, homework will be assigned on weekly basis on ReggieNet.
- There will be approximately **10 homework assigned** during the semester; **the lowest two homework scores will be dropped** to account for any unforeseen absence.
- You will have a week to complete your homework. For example, homework assigned on Tuesday will be due on Tuesday the following week.
- **You are allowed 3 attempts on each homework**; No late assignments will be accepted.
- Your homework will be graded automatically on ReggieNet and you will know your score and the answer keys immediately after submission.
- Make sure the grades are consistent with your performance by checking the gradebook periodically in ReggieNet.

Attendance/Participation

- Regular attendance and active participation are expected during every class.
- Raise your hand if you have any questions and concerns without any hesitation at any time during the lecture.
- Clickers will help you stay more focused on the lecture material and participate in the class room activities.
- Note that correct answers to clicker questions will receive full credit for the question and incorrect answers will receive half- credit.
- **The use of cell phones (talking, texting, etc.) during class is not permitted.** Cell phones must remain in your pocket or bag, and must be on silent during class.

Examinations

- There will be **three class exams, and the final exam; total four exams.**
- The **lowest score out of the three class exams** will be dropped to account for any unforeseen absences.
- The **final exam** will be **comprehensive, and the final exam score will not be dropped even if it is your lowest score.**
- **All the exams including the final** will be given using OPSCAN forms, and are *open-notes and open-book*.
- You may use a calculator on the exams, but no other devices (phones, laptops, ipods, etc.) will be allowed during the exams.

Laboratory

- There will be **10 lab activities** throughout the semester in computer lab rooms MLT 202 and 204 (see page-5 for schedule).
- The **lowest two lab scores will be dropped** to account for any unforeseen absences.
- You must bring your lab manual with you in order to complete the lab, and **get it stamped as a proof that you have indeed completed the lab.**
- You may do the activity at any time during the week when the lab is open (Tuesday through Friday 9am-4pm).
- **Make sure you place your Lab worksheet under section 7-8 (not under section 9-10). I am teaching two sections of PHY 102 in Fall 2018.**
- Due to high volume of students, I strongly encourage you to complete your lab work early in the week so that you don't run out of time.

Grading

The final grade will be weighted as follows:

- Homework 25%
- Clicker Response 5%
- Lab 20%
- Class Exams 30%
- Final Exam 20%

Final letter grades will be based on the following (subject to change):

- **90 – 100% A**
- **80 – 89.99% B**
- **70 – 79.99% C**
- **60 – 69.99% D**
- **< 60% F**

Free Tutoring

Free Tutoring is Available for this Course!

The **Julia N. Visor Academic Center** provides *free* weekly tutoring sessions for this course!

To sign up, stop by the Julia N. Visor Academic Center at **Vrooman 012** or call **(309) 438-7100**.
For more information, visit our website at <http://universitycollege.illinoisstate.edu/tutoring/>

We are here to help!

Academic Integrity and Code of Conduct

- Collaboration, exchanging ideas, open discussion on course materials are allowed; in fact, encouraged.
- However, each student must do their own homework, labs, and exam solutions independently.
- Copying from others, and any other form of cheating, are against academic honesty and integrity, and violates ISU code of conduct. For details see <http://deanofstudents.illinoisstate.edu/conflict/conduct/code/academic.php> or see the full ISU Code of Student Conduct document <http://deanofstudents.illinoisstate.edu/downloads/CodeOfStudentConduct-Revised5.12.pdf> for the ISU policy on academic dishonesty
- Students are expected to behave in a manner consistent with being in a professional environment.
- Open discussion and disagreement are encouraged in a respectful manner.
- Open hostility, rudeness, and incivility are discouraged and will result in appropriate action.
- Students acting in a disruptive or uncivil manner may be dismissed from the class for the remainder of the class period. If necessary, referrals may also be made to Community Rights & Responsibilities for violations of the Code of Student Conduct.

Students with Disabilities

- Any student needing to arrange a reasonable accommodation for a documented disability should contact Student Access and Accommodation Services at 350 Fell Hall, 309-438-5853, <http://studentaccess.illinoisstate.edu/>

Tentative Course Schedule (Subject to Change)

The course content can be divided into four sub-sections

I. Mechanics (Week 1 to Week 6): Motion, Newton's laws, Energy and Momentum, Gravity & Projectile motion

II. Atoms (Week 6 to Week 7): Structures of Atoms; From Rutherford to Bohr's models

III. Electricity & Magnetism (Week 8 to Week 13) Static Current, Electricity, Electric Circuits, Magnetism, Electromagnetic Induction

IV. Waves & Light (Week 14 to Week 16): Waves, Sound, Electromagnetic Waves, Light

A tentative schedule for the course and exams are as follows:

	Tuesday 12:35 to 1:50 pm	Thursday 12:35 to 1:50 pm	Laboratory Tu - Fri 9:00am – 4:00pm
Week 1 8/21, 8/23	Introduction, Why we do science?	Math Skills	No Lab
Week 2 8/28, 8/30	Birth of Mechanics, Force, Mass, Inertia	Speed, Velocity, Acceleration	No Lab
Week 3 9/4, 9/6	Newton's laws -I	Newton's laws-II	A2-GA - Graphical Analysis
Week 4 9/11, 9/13	Momentum	Work and Energy	A5-CI - Computer Interface
Week 5 9/18, 9/20	Projectile Motion	REVIEW	A3-FF - Free Fall
Week 6 9/25, 9/27	EXAM-I	Atoms-I	No Lab
Week 7 10/2, 10/4	Atoms-II	Static Current	A4-PM - Projectile Motion
Week 8 10/9, 10/11	Electricity	Electric Circuits-I	A6-NSL - Newton's Second Law
Week 9 10/16, 10/18	Electric Circuits-II	REVIEW	A7-CE - Conservation of Energy
Week 10 10/23, 10/25	EXAM-II	Magnetism-I	No Lab
Week 11 10/30, 11/1	Magnetism-II	Electromagnetic Induction- Ampere's law	B3-CLE - Coulomb's Law of Electrostatics
Week 12 11/6, 11/8	Electromagnetic Induction-Faraday's law	REVIEW	B4-EOL - Electricity and Ohm's Law
Week 13 11/13, 11/15	EXAM-III	Waves	B2-WNL - Wave Nature of Light
Week 14 11/20, 11/22	No Class, Thanksgiving break!	No Class, Thanksgiving break!	No Lab
Week 15 11/27, 11/29	Sound	Light	D1-LFA - Light From Atoms
Week 16 12/4, 12/6	Electromagnetic Waves	REVIEW	No Lab
Week 17 12/10-12/14	EXAM-IV, TBA		No Lab – Final Exam