

INSTRUCTOR	Name TBA and E-mail: TBA
OFFICE HOURS	Hours and Location: TBA
TEXTBOOK	Astronomy Laboratory Manual (Physics 202A), sold by NJIT bookstore. The manual is also used as a lab report.
DESCRIPTION	PHYS 202A is a laboratory course associated with Introductory Astronomy and Cosmology course (PHYS 202).
HELP	<ul style="list-style-type: none"> <li>- Visit or email your instructor if you are having trouble with the lab course.</li> <li>- If you need an accommodation due to a disability, please contact the Office of Accessibility Resources and Services at <a href="mailto:OARS@NJIT.EDU">OARS@NJIT.EDU</a>, or visit the office in Kupfrian Hall 201 to discuss your specific needs.</li> </ul>
GENERAL INFORMATION	<ul style="list-style-type: none"> <li>- There is no exam in the lab course.</li> <li>- No make-up for missing labs is allowed.</li> <li>- No eating or drinking in the laboratory room.</li> <li>- Experiments are a group effort.</li> <li>- Laboratory reports should be individual ones submitted by each student.</li> <li>- Lab computer login method: Username: your UCID and Password: your UCID password</li> <li>- NJIT physics lab website: <a href="https://research.njit.edu/introphysics/">https://research.njit.edu/introphysics/</a></li> </ul>
DELIVERY MODE	<ul style="list-style-type: none"> <li>- Face-to-Face: Delivery of instruction is structured around in-person classroom meeting times. Instruction is delivered in person and students are expected to attend class.</li> </ul>
LEARNING OBJECTIVES	<ul style="list-style-type: none"> <li>- Students will master basic physics concepts by performing an experiment relevant to corresponding course work.</li> <li>- Students will gain hands-on experiences with experimental processes.</li> <li>- Students should develop collaborative learning skills by working in a group.</li> </ul>
LEARNING OUTCOMES	<ul style="list-style-type: none"> <li>- Students will demonstrate basic experimental skills by practicing setting up and conducting an experiment.</li> <li>- Students will demonstrate an understanding of the analytical methods required to interpret and analyze results and draw conclusions as supported by their data.</li> <li>- Students will demonstrate basic communication skills by working in groups on laboratory experiments and the thoughtful discussion and interpretation of data.</li> </ul>
ATTENDANCE	<ul style="list-style-type: none"> <li>- Attendance policy is very strict. It is a student's responsibility to confirm his/her attendance with the Lab instructor.</li> <li>- It is required for students to attend all lab experiments since grading is based on attendance, participation, and lab report.</li> <li>- It is required for a student to sign the attendance sheet in every lab class. If a student fails to sign it, it is treated as being absent.</li> <li>- Attendance will be checked in the beginning and middle of each class by your instructor.</li> <li>- If a student does not appeal and resolve his/her attendance within 7 days, no further complaint will be accepted.</li> <li>- If a student makes more than 3 unexcused absences, the student is very likely to fail the lab course.</li> <li>- If a student has excusable absences, the student should contact the Office of the Dean of Students to email an official excuse to his/her lab instructor.</li> <li>- Students can check their Attendance and Participation grade by appointment with the TA</li> <li>- There might be a camera recording by a lab instructor for attendance and participation (It is required for <b>the students to sign a waiver acknowledging that they are being recorded</b>).</li> </ul>
GENERAL GRADING POLICY	<ol style="list-style-type: none"> <li>1. The grading guidelines are as follows: Attendance (20%); Participation (20%); Laboratory Report (60%)</li> <li>2. Attendance Points: Attendance for each lab session is 1 point</li> </ol>

	3. Lateness penalties: Late by 10-20 minutes (-0.2 points); Late by 20-30 minutes (-0.5 points); Late by more than 30 minutes (marked as absence). 4. Participation Points: Active (2 points), Average (1 point), Not participate (0). 5. A grade of zero (0) will be given for any missed experiment with no excuse. 6. Submission of the lab report is due the following week class begins – penalty for lateness is 10 % per day.
GRADING SCALE	90 - 100 % = A, 85 – 89 % = B+, 80 – 84 % = B, 75 – 79 % = C+, 65 – 74 % = C, 50 – 64 % = D, 0 – 49 % = F

## LAB COURSE SCHEDULE

Week	Period	Experiment
<b>1*</b>	9/2(T) - 9/8(M)	Introduction
<b>2</b>	9/9(T) - 9/15(M)	The Celestial Sphere: Horizon Coordinate System
<b>3</b>	9/16(T) - 9/22(M)	The Celestial Sphere: The Ecliptic
<b>4</b>	9/23(T) - 9/29(M)	The Celestial Sphere: Equatorial Coordinate System & Sidereal Time
<b>5**</b>	9/30(T) - 10/6(M)	Motion of Mercury: Drawing the Orbit
<b>6</b>	10/7(T) - 10/13(M)	Orbit of Mercury: Kepler's Laws
<b>7</b>	10/14(T) - 10/20(M)	The Moon
<b>8</b>	10/21(T) - 10/27(M)	Planetary Configuration
<b>9</b>	10/28(T) - 11/3(M)	The Synodic Period of the Sun
<b>10***</b>	11/4(T) - 11/10(M)	Spectroscopy
<b>11</b>	11/11(T) - 11/17(M)	Reflection and Refraction
<b>12</b>	11/18(T) - 11/24(M)	Thin Lenses and Astronomical Telescope
<b>13****</b>	11/25(T) - 12/3(W)	The Hertzsprung-Russell Diagram
<b>14</b>	12/4(R) - 12/10(W)	The Hubble Classification of Galaxies and Cosmology

\* **9/8 (Mon.) Last Day to add/drop a class**

\*\* **10/2 (Thurs.) Wellness Day**

\*\*\* **11/10 (Mon) Last Day to Withdraw from Classes**

\*\*\*\* **11/25 (Tue) Thursday classes meet**

\*\*\*\* **11/26 (Wed) Friday classes meet**

\*\*\*\* **11/27 (Thurs.) and 11/28 (Fri.) Thanksgiving Recess Begins. No classes**

**12/22 (M) Final Grades Due**

## Physics Laboratory Safety

- Food and drink are not permitted during class in the lab at any time.
- Wear safety glasses all the time during lab experiments.
- Do not come into the lab room early unless the instructor is present.
- Do not wear loose hair or clothing around moving equipment.
- Do not set equipment too close to the edge of the table.
- Do not activate any electric circuit or apparatus until the instructor inspects it.
- Never touch a possibly live circuit and do not touch electrical equipment with wet hands.
- Only use laboratory equipment for the instructional purpose for which it was intended.
- Never look directly at the beam of a laser and light from a lamp used for experiment.
- All trash and waste materials should be disposed of in the proper container. Do not pour chemicals into the laboratory sink.
- Do not shorten the electrical leads on any equipment.
- Any equipment except computers not in use should be turned off.
- Do not take apart any apparatus or piece of equipment.
- All damaged equipment and chemical spills should be immediately reported to a laboratory instructor or laboratory staff.
- Accidents and emergencies must be immediately reported to the laboratory instructor. (NJIT Emergency call number: 911)
- Be aware that fire extinguishers are in Rooms 406T and 407T.