

PHY251 “Modern Physics” Syllabus

Fall 2026

Instructor: Prof. Joanna Kiryluk, joanna.kiryluk@stonybrook.edu

Lectures: Tuesday, Thursday 11:00 AM – 12:20 PM, Room P-118, Physics Building

Recitations:

- **Section R1:** Tuesday 2:00 – 2:55 PM, Humanities 1023
- **Section R2:** Thursday 2:00 – 2:55 PM, Humanities 1023

Office hours:

- **Days:** Tuesdays and Thursdays
- **Time:** to be determined – please [vote on your preferred time](#)
- **Location:** to be determined; also available by appointment, in person (Physics Building, C floor, Office 109) or via Zoom
- **Zoom:** [Join Zoom Meeting](#)
Meeting ID: 996 4775 2750, Passcode: 126962

Textbook/Homework access: WebAssign.

S.T. Thornton, A. Rex, C. Hood “Modern Physics for Scientists and Engineers” Ed. 5.

Outline

This is the basic introduction to the foundations of modern physics, focused on:

- Special Relativity (kinematics and dynamics)
- Quantum Mechanics
- Statistical Mechanics

and their modern applications.

Grading

Final grades will be determined by weighting the various portions of the course as follows:

- 30% – Homework assignments (submitted online through WebAssign) and recitation performance (attendance and quizzes, given roughly once every 2–3 weeks in recitation) combined.
- 30% – Midterm
- 40% – Final exam

A passing grade will require no less than 50% of the total.

P/NC: If you decide to take the course for PASS/NO CREDIT, you must change your grading option before the University-imposed deadline. All grades will be accessible via Brightspace for this course.

Exam Schedule

Midterm exam: October 8, 2026, during the lecture time: 11:00 AM – 12:20 PM, Room P-118.

Final exam: Date, time, and place to be determined. Will be posted on Brightspace.

Exam Policy

- Midterm and Final exams are mandatory. Make-up exams may be scheduled in exceptional cases.
- No cell phones or other “smart” devices with phone or WiFi capability will be permitted during exams, unless stated otherwise.
- Quizzes will be given once every 2–3 weeks in recitation sessions, as scheduled on Brightspace; only calculators (no notes) are allowed during quizzes.
- Midterm and Final exams: calculators are necessary, and two letter-size pages of personal handwritten notes are allowed.

Student Learning Outcomes

Students who successfully complete this course:

- will have a basic understanding of the foundations of relativity theory, quantum mechanics, and statistical mechanics,
- will be able to perform basic calculations in these areas,
- will have some knowledge of current research topics and applications of modern physics topics.

Student Accessibility Support Center Statement

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information, see the [Fire Safety and Evacuation Guide for People with Disabilities](#).

Academic Integrity Statement

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person’s work as your own is always wrong. Faculty members are required to report any suspected instance of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the [Academic Judiciary website](#).

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, and/or inhibits students’ ability to learn.

[Academic Judiciary website](#)