

MODERN PHYSICS 2022 FALL

COLLEGE OF ARTS & SCIENCES
PHYSICS DEPARTMENT

COURSE INFORMATION:

Course number: PHY 3710

Number of credits: 4

Room: 364 MSC

Day/Time/ Date range of course duration: Tuesday and Thursday, 3:00-4:47 p.m.

Course description: Introduction to relativity, kinetic theory, quantization and atomic physics. Additional topics chosen from physics of molecules, solids, nuclei and elementary particles.

Prerequisite(s): (PHY 1020 or PHY 1520 or PHY 1620) and MTH 1555

Course format: In-Person

INSTRUCTOR INFORMATION:

Name: Yuejian Wang

Office Location: HH 164

Office hours: Using email or phone call to make appointments. We can meet in-person or virtually.

You can reach me at 248-370-3423 or at ywang235@oakland.edu (Don't contact me through moodle)

Safety Protocol for preventing the virus from spreading:

Based on the updated OU's healthy guidance, masking is not mandatorily required on campus, but if you prefer, you can wear a mask or face covering during class.

If you get a fever, sick, or the symptom of Covid-19, please contact your doctor or the Graham Health Center at OU immediately, and also please let me know.

For all other issues please refer to <https://www.oakland.edu/return-to-campus/>

Textbooks: Modern Physics, Kenneth S. Krane, 4th Edition, Wiley

Homework: The assignments are due on the date specified on the syllabus. **The homework should be typed with a word processing program, such as Word, rather than handwriting. The hard copy of the homework must be turned in at the beginning of the class on the due day specified in the schedule table which is located in the last page of this syllabus.**

Late homework will not be graded. Only in case of serious circumstances an extension may be granted. Please send me an e-mail about this. No e-mailed homework is accepted.

Exams: There will be a total of three exams. All exams are closed book. You may bring a 4.25" x 5.5" sheet with formulas; you can write on both sides of the sheet with hand written formulas, relevant constant, and personal notes, but no examples of solved problems. Notice: The index card may not be photocopied, reduced or computer generated. Violation of this rule will result in failure of the examination.

Please notice that clear writing and clarity of expression is a very important component of the exam.

A calculator is required, plus a fine point pencil, and an eraser.

Exam # 1: Thursday, Sep. 29 (Chapters 1, 3-5)
Exam # 2: Thursday, Nov. 3 (Chapters 6-9)
Exam # 3: Thursday, Dec. 8 at noon (Chapters 2,10-12)

Make-up Policy: In order to be fair to the majority of students who take the exams on time, the general policy is: **No make-up exams** will be given.

A score of zero will be entered for missed a test.

If you cannot be present for an exam due to a documentable serious and unavoidable emergency, contact me before the exam, if possible, or as quickly as possible after the exam to see if an exception can be made.

Grading: Course grades will be posted on Moodle.

Homework 22%
Attendance 3%
Exam 1 25%
Exam 2 25%
Exam 3 25%

Grading scale:

| Final grade | Total grade |
|-------------|-------------|
| A | 96-100 |
| A- | 90-95 |
| B+ | 85-89 |
| B | 80-84 |
| B- | 75-79 |
| C+ | 70-74 |
| C | 65-69 |
| C- | 60-64 |

| | |
|----|-------|
| D+ | 55-59 |
| D | 50-54 |
| F | < 50 |

CLASSROOM AND UNIVERSITY POLICIES

ACADEMIC INTEGRITY PLEDGE

In order to uphold academic conduct standards at Oakland University, all students must act according to the pledge below.

I pledge that all my work in the course, including, but not limited to, my assignments, tests and examinations, are my own work and I have received no unauthorized assistance or collaboration.

I understand that if I am unclear about the appropriate or allowable use of any support materials to complete my required coursework, I will contact the faculty for clarification before using said materials.

I understand that all alleged violations of Academic Misconduct will be reported to the Academic Conduct Committee. If found responsible for violations of Academic Misconduct I will be subject to disciplinary measures by the University up to and possibly including expulsion (permanent separation) from the University.

CLASSROOM BEHAVIOR

1. **ACADEMIC CONDUCT POLICY.** All members of the academic community at Oakland University are expected to practice and uphold standards of academic integrity and honesty. Academic integrity means representing oneself and one's work honestly. Misrepresentation is cheating since it means students are claiming credit for ideas or work not actually theirs and are thereby seeking a grade that is not actually earned. Following are some examples of academic dishonesty:
 - a. **Cheating.** This includes using materials such as books and/or notes when not authorized by the instructor, copying from someone else's paper, helping someone else copy work, substituting another's work as one's own, theft of exam copies, falsifying data or submitting data not based on the student's own work on assignments or lab reports, or other forms of misconduct on exams.
 - b. **Plagiarizing the work of others.** Plagiarism is using someone else's work or ideas without giving that person credit; by doing this, students are, in effect, claiming credit for someone else's thinking. Both direct quotations and paraphrases must be documented. Even if students rephrase, condense or select from another person's work, the ideas are still the other person's, and failure to give credit constitutes misrepresentation of the student's actual work and plagiarism of another's ideas. Buying a paper or using information from the World Wide Web or Internet without attribution and handing it in as one's own work is plagiarism.
 - c. **Falsifying records** or providing misinformation regarding one's credentials.

- d. **Unauthorized collaboration** on computer assignments and unauthorized access to and use of computer programs, including modifying computer files created by others and representing that work as one's own.

For more information, review OU's [Academic Conduct Regulations](https://www.oakland.edu/deanofstudents/policies/). (Link to Academic Conduct Regulations: <https://www.oakland.edu/deanofstudents/policies/>)

2. **BEHAVIORAL CODE OF CONDUCT.** Appropriate behavior is required in class and on campus. Disrespectful, disruptive and dangerous behavior are not conducive to a positive learning environment and may result in consequences. Core Standards for Student Conduct at OU includes

- a. **Integrity.** See academic conduct policy points above.
- b. **Community.** Policies regarding disruptive behavior, damage and destruction, weapons, and animals.
- c. **Respect.** Policies regarding harassment, hazing, and [sexual misconduct](https://www.oakland.edu/policies/health-and-safety/625/) (Link to Sexual Misconduct policy: <https://www.oakland.edu/policies/health-and-safety/625/>)
- d. **Responsibility.** Policies regarding alcohol, drugs, and other substances

See the [Student Code of Conduct](https://www.oakland.edu/deanofstudents/student-code-of-conduct/) for details. (Link to Student Code of Conduct: <https://www.oakland.edu/deanofstudents/student-code-of-conduct/>)

NON-DISCRIMINATION STATEMENT

Oakland University is an inclusive and diverse community that respects the rights, viewpoints and lifestyles of all of our community members. We strive to maintain a learning and working environment free from discrimination and harassment on any basis and to create an environment where students feel respected and included. Discrimination is differential treatment, or unfair treatment, towards an individual or group, because of one's identity. Harassment includes actions that create an offensive, demeaning, intimidating or hostile environment.

Students experiencing or witnessing discrimination from a fellow student can reach out to the professor for resolving the matter. If students prefer not to reach out to their professor or are experiencing discrimination not related to a class, reach out to your academic adviser or the Dean of Students.] If you are experiencing discrimination from a faculty or staff member, you can contact the Dean of Students Office directly at (248) 370-3352.

These offices are available to provide additional support:

- [Center for Multicultural Initiatives](#) (CMI)
- [Gender and Sexuality Center](#) (GSC)
- [Disability Support Services](#) (DSS)
- [Veteran Support Services](#) (VSS)
- [Oakland University Counseling Center](#) (OUCC)

ACCOMMODATION AND SPECIAL CONSIDERATIONS

Oakland University is committed to providing everyone the support and services needed to participate in their courses. Students with disabilities who may require special accommodations should make an appointment with campus [Disability Support Services](#) (DSS). If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Support Services in a timely manner (for exam

accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. DSS determines accommodations based on documented disabilities. Contact DSS at 248-370-3266 or by e-mail at dss@oakland.edu.

For information on additional academic support services and equipment, visit the [Student Resources webpage of Disability Support Services website](https://www.oakland.edu/dss/student-resources/). (Link to Disability Support Services website: <https://www.oakland.edu/dss/student-resources/>)

MENTAL HEALTH AND WELL-BEING

Oakland University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact The OU Counseling Center at Graham Health at (248) 370-3465. Student resources can also be found at the [Dean of Students website](http://www.oakland.edu/deanofstudents) by clicking on Student Health & Safety Resources. (URL: <http://www.oakland.edu/deanofstudents>)

EXCUSED ABSENCE POLICY

This policy for university excused absences applies to participation as an athlete, manager or student trainer in NCAA intercollegiate competitions, or participation as a representative of Oakland University at academic events and artistic performances approved by the Provost or designee. A student must notify and make arrangements with the professor in advance. For responsibilities and procedures see [Academic Policies and Procedures](https://www.oakland.edu/provost/policies-and-procedures/), which includes other considerations such as a new **Bereavement Leave Policy**. (Link to Academic Policies and Procedures: <https://www.oakland.edu/provost/policies-and-procedures/>)

RELIGIOUS OBSERVANCES

Student should discuss with professor at the beginning of the semester to make appropriate arrangements. Although Oakland University, as a public institution, does not observe religious holidays, it will continue to make every reasonable effort to help students avoid negative academic consequences when their religious obligations conflict with academic requirements. See The [OU Diversity Calendar](https://www.oakland.edu/diversity/calendar/) for more information. (Link to calendar: <https://www.oakland.edu/diversity/calendar/>)

PREFERRED NAME AND PRONOUN

If you do not identify with the name that is listed with the registrar's office, please notify me so that I may appropriately amend my records. In addition, if you prefer to go by a different pronoun, please inform me. For more information including a preferred first name on university records please review [OU's Preferred Name Policy](https://www.oakland.edu/uts/common-good-core-resources/name-services/) (Link to Preferred Name Policy: [oakland.edu/uts/common-good-core-resources/name-services/](https://www.oakland.edu/uts/common-good-core-resources/name-services/))

ADD/DROPS

As a student, university policy officially gives you the responsibility to add and drop courses. Put in your calendar [deadline dates for dropping courses](#) (even if you think it won't be necessary), and consult the [Drop or Not Guide](#) to make a well-informed decision before dropping a course. (Link to Drop or Not Guide: [oakland.edu/registrar/registration/dropornot/](https://www.oakland.edu/registrar/registration/dropornot/))

EMERGENCY PREPAREDNESS

In the event of an emergency arising on campus, the Oakland University Police Department (OUPD) will notify the campus community via the emergency notification system. The professor of your class is not responsible for your personal safety, so therefore it is the responsibility of each student to understand the evacuation and “lockdown” guidelines to follow when an emergency is declared. These simple steps are a good place to start:

- OU uses an emergency notification system through text, email, and landline. These notifications include campus closures, evacuations, lockdowns and other emergencies. Register for these notifications at oupolice.com.
- Based on the class cellphone policy, ensure that one cellphone is on in order to receive and share emergency notifications with the professor in class.
- If an emergency arises on campus, call the OUPD at (248) 370-3331. Save this number in your phone, and put it in an easy-to-find spot in your contacts.
- Review protocol for evacuation, lockdown, and other emergencies via the classroom’s red books (hanging on the wall) and oupolice.com/emergencies.
- Review with the professor and class what to do in an emergency (evacuation, lockdown, snow emergency).

Violence/Active Shooter: If an active shooter is in the vicinity, call the OUPD at (248) 370-3331 or 911 when it is safe to do so and provide information, including the location and number of shooter(s), description of shooter(s), weapons used and number of potential victims. Consider your options: [Run, Hide, or Fight](#).

PHY 3710 TENTATIVE SCHEDULE – FALL 2022

| Week | Day | Date | Chapter |
|------|-----|-------|---|
| 1 | Th | 9/1 | 1, homework: problems: 1,3,5,6,10,11; Due: 3:00 p.m. on 9/8 |
| 2 | T | 9/6 | |
| | Th | 9/8 | 3, homework: problems: 1,3,7,13,25,32; Due: 3:00 p.m. on 9/15 |
| 3 | T | 9/13 | 4, homework: problems: 1,5,14,20,27,31; Due: 3:00 p.m. on 9/22 |
| | Th | 9/15 | |
| 4 | T | 9/20 | 5, homework: problems: 1,4,8,10,13,25,31; Due: 3:00 p.m. on 9/29 |
| | Th | 9/22 | |
| 5 | T | 9/27 | EXAM 1 (Chapters 1, 3-5) |
| | Th | 9/29 | |
| 6 | T | 10/4 | 6, homework: problems: 2,5,15,26,35; Due: 3:00 p.m. on 10/11 |
| | Th | 10/6 | |
| 7 | T | 10/11 | 7, homework: problems: 3,4,7,13,17,20,24; Due: 3:00 p.m. on 10/18 |
| | Th | 10/13 | |
| 8 | T | 10/18 | 8, homework: problems: 2,4,11,15,17; Due: 3:00 p.m. on 10/25 |
| | Th | 10/20 | |
| 9 | T | 10/25 | 9, homework: problems: 1,3,10,16,23,29; Due: 3:00 p.m. on 11/1 |
| | Th | 10/27 | |
| 10 | T | 11/1 | 10 |
| | Th | 11/3 | EXAM 2 (Chapters 6-9) |
| 11 | T | 11/8 | 10, homework: problems: 1,4,8,12,21,24; Due: 3:00 p.m. on 11/10 |
| | Th | 11/10 | 11, homework: problems: 1,15,24,26,28,34; Due: 3:00 p.m. on 11/17 |
| 12 | T | 11/15 | 12, homework: problems: 1,4,7,13,15,17,23,26,30,33; Due: 3:00 p.m. on 11/29 |
| | Th | 11/17 | |
| 13 | T | 11/22 | Thanksgiving, classes suspended |
| | Th | 11/24 | |
| 14 | T | 11/29 | 2, homework: problems: 1,4,18,23,29,44; Due: 3:00 p.m. on 12/8 |
| | Th | 12/1 | |
| 15 | Th | 12/8 | EXAM 3 (Chapters 2, 10-12) noon-3:00 PM |