

Class Time and Location

- **Location:** College of Science, Building number 4 (كلية العلوم مبنى ٤)

	Days	Time	Room
Lectures	Sunday, Tuesday and Thursday	Check your schedule	Check your schedule
Laboratory	One session a week See your course schedule	Two hours	Different lab locations

Instructor Information

Name	Dr. Abdulaziz Saleh Alqasem
Office	2A57
Email	AbdAlqasem@ksu.edu.sa
Office Hours	To be announced soon. Also we can meet anytime by appointment.



Course page

The course materials are available at: <https://faculty.ksu.edu.sa/en/abdalqasem/course/442880>

Grading Policy

Assessment	First Midterm	Second Midterm	Laboratory	Final Exam
Weight	15%	15%	30%	40%

General Policies

- **Attendance:** Regular attendance is expected (**75% minimum**) and crucial for success in this course.
- **Eating and Drinking:** You can, but please do not disturb others with noise or strong odors.
- **Leaving the Classroom:** Please minimize disruptions when entering or leaving the classroom. You do NOT need to ask for permission.

Course Description

This course provides a foundation in the principles of classical mechanics, focusing on the motion of objects and the forces that govern them. Topics include vectors, motion in one and two dimensions (with applications to projectile and circular motion), Newton's laws of motion, work and energy, potential energy and conservation of energy, linear momentum and collisions, and the rotation of rigid bodies about a fixed axis. Emphasis is placed on developing problem-solving skills and applying physical principles to real-world situations.

Main Textbook

Serway, R. A., & Jewett, J. W. (2003). **Physics for Scientists and Engineers** (6th ed.)

Secondary Textbook

Halliday, D., Resnick, R., & Walker, J. (2013). **Fundamentals of Physics** (10th ed.). Wiley.

Resources

Online simulations (e.g., [PhET](#))

How to succeed in this course

- After completing each chapter, go back to the slides/book and **do** the **examples** and suggested **problems by yourself**.
- You **must** be able to **solve all examples and suggested problems** without looking at the solutions, as you will do so during the exams.

Three Steps to Prepare for the Exams (SST):

1. **Study** the lecture slides and read the textbook for the assigned sections.
2. **Solve** all examples and suggested problems in the assigned sections.
3. **Test** your knowledge and preparation by solving previous exams.

Four Common Mistakes to Avoid:

1. **Not** attending lectures and laboratory sessions, or coming late to class.
2. **Not** asking questions during class or office hours. All questions are encouraged, and you should not hesitate to ask for help.
3. **Not** preparing for the exams by following the SST steps mentioned above. Focusing on **only** answering previous exams is **NOT** enough, and cannot teach you the main concepts and problem-solving skills needed to succeed in this course.
4. **Not** keeping up with the material and falling behind. The chapters in this course are very interconnected, so it is crucial to keep up with the material and not fall behind.

Tentative Schedule

Chapter	Title	Section	Suggested Problems	Hours
1	Physics and measurement	1.1, 1.4, 1.5	13, 15, 21, 25, 31	2
2	Motion in One Dimension	2.1, 2.2, 2.3, 2.5, 2.6	4, 5, 11, 15, 16, 20, 21, 22, 23, 25, 27, 28, 29, 32, 33, 40, 42, 43, 46, 48, 51, 52	4
3	Vectors	3.1–to–3.4	1, 4, 19, 21, 27, 30, 31, 33, 39, 49, 50	4
4	Motion in Two Dimensions	4.1–to–4.5	1, 3, 5, 6, 8, 14, 15, 17, 19, 20, 22, 23, 25, 29	4
5	The Laws of Motion	5.1–to–5.8	3, 7, 11, 16, 18, 24, 25, 26, 28, 30, 31, 37, 41, 44, 45, 46, 68	6
6	Circular Motion and Other Applications of Newton's Laws	6.1	1, 2, 5, 7, 59	2
7	Energy and Energy Transfer	7.2–to–7.8	1, 4, 7, 13, 14, 15, 16, 19, 21, 24, 25, 26, 28, 31, 32, 33, 35, 37, 40	4
8	Potential Energy	8.1–to–8.5	2, 5, 6, 11, 13, 17, 31, 33, 36, 38, 42, 55, 57, 59, 60	4
9	Linear Momentum and Collisions	9.1–to–9.4	1, 2, 4, 5, 7, 8, 9, 10, 13, 15, 16, 17, 18, 21, 25, 27, 32, 33, 35	5
10	Rotation of a Rigid Object About a Fixed Axis	10.1–to–10.8	1, 3, 5, 6, 8, 12, 13, 16, 17, 18, 20, 21, 31, 35, 37, 46, 70, 71	6

Note

Students are expected to be able to **solve all examples** in the assigned sections, as well as the **suggested problems**, under the instructor's supervision.