



**University of International Business and Economics
International Summer School**

PHY 120 Fundamentals of Physics (with Lab)

Term: May 25– June 25, 2020

Instructor: Prof. Shanshan Chen

Home Institution: Renmin University of China

Email: TBD

Class Hours: Monday through Thursday, 120 minutes each day (2,400 minutes in total)

Office Hours: TBD

Discussion session: 2 hours each week

Total Contact Hours: 64 contact hours (45 minutes each, 48 hours in total)

Credit: 4 units

Course Description:

Calculus-based introduction to Physics designed for students not in the physical sciences. No previous course-work in physics is assumed. The material to be covered is basically the first half of a standard College Physics course, mechanics. This is an intensive course, especially given the limited time frame, and students should take this into account.

Course Goals:

The goal is, in addition to having students learn to solve physics problems, to provide students with an overview of how the material taught fits together within a single conceptual framework.

Required Textbook:

Fundamentals of Physics, 10th Edition by David Halliday, Robert Resnick, Jearl Walker
ISBN: 9781118230725

Grading Policy:

Grades will be determined as follows:

10% for attendance

15% for homework solutions

15% for laboratory experiments

30% for the midterm exam

30% for the final exam

Grading Scale:

Assignments and examinations will be graded according to the following grade scale:

A	90-100	C+	72-74
A-	85-89	C	68-71
B+	82-84	C-	64-67
B	78-81	D	60-63
B-	75-77	F	below 60

Class Rules:

Any academic misconduct of any type, especially cheating on an exam, will automatically trigger: (1) expulsion from the course; (2) the issuance of a failing grade for the course, (3) the issuance of a formal report about the student's misconduct to the student's home university, and (4) any other disciplinary or administrative action deemed appropriate by Professor Chen and the leaders of UIBE. Students are allowed to co-operate on, but not copy, homework exercises.

Attendance Policy:

The attendance of every student at **all** class sessions is mandatory. There will be limited exceptions based on formal written permission of the professor.

Course Schedule:

Day 1, Mon: **Chapters 1&2** Measurement and Motion along a straight line

Day 2, Tues: **Chapters 3&4** Vectors and Motion in Two and Three Dimensions

Day 3, Wed: **Chapters 5** Force and Motion I

Day 4, Thurs: **Lab experiment:** The Simple Pendulum & Uniformly Accelerated Motion

Day 5, Mon: **Chapter 6** Force and Motion II

Day 6, Tues: **Chapter 7** Kinetic Energy and Work

Day 7, Wed: **Chapter 8** Potential Energy and Conservation of Energy

Day 8, Thurs: **Lab experiment:** Newton's Second Law & Centripetal Force

Day 9, Mon: **Mid-term**



Day 10, Tues: **Chapter 9** Center of Mass and Linear Momentum

Day 11, Wed: **Chapter 9** Center of Mass and Linear Momentum

Day 12, Thurs: **Chapter 10** Rotation

Day 13, Mon: **Chapter 10** Rotation

Day 14, Tues: **Lab experiment:** Conservation of Linear Momentum & Projectile Motion

Day 15, Wed: **Chapter 11** Rolling, Torque, and Angular Momentum

Day 16, Thurs: **Chapter 15** Rolling, Torque, and Angular Momentum

Day 17, Mon: **Chapter 15** Oscillations

Day 18, Tues: **Lab experiment:** Work and Energy & Torques, Equilibrium, and Center of Gravity

Day 19, Wed: **Review session**

Day 20, Thurs: **Final Exam**