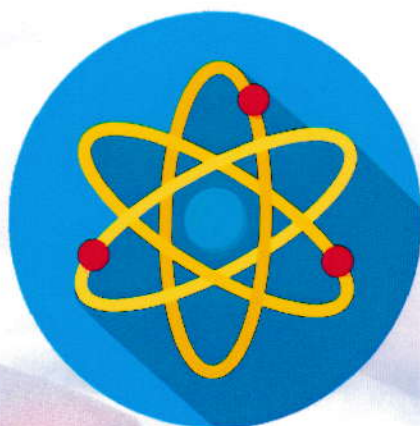


**F.O.Orazova**

**English for PHYSICS  
students**



**O'ZBEKISTON RESPUBLIKASI  
OLIY TA'LIM, FAN VA INNOVATSIYALARI VAZIRLIGI  
CHIRCHIQ DAVLAT PEDAGOGIKAUNIVERSITETI**

**F.O.Orazova**

## **English For PHYSICS students**

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**Tuzuvchi:**

**F.O.Orazova** - ChDPU Fakultetlararo chet tillar kafedrasida o'qituvchi.

**Taqrizchilar:**

**D.B.Otajonova** - ChDPU Fakultetlararo chet tillar kafedrasida dotsenti, f.f.f.d. (PhD).

**M.T.Qodirova** - TDPI Xorijiy tillar nazariyasi va metodikasi kafedrasida dotsenti, f.f.f.d. (PhD).

Mazkur uslubiy qo'llanma oliy o'quv yurtlarining mutaxassisligi chet tili bo'lmagan fakultetlarining fizika bo'limi talabalariga fizika fanini ingliz tilida mustaqil o'qib o'rganishlari uchun mo'ljallangan.

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## KIRISH

O'zbekistonda bevosita o'ziga xos, o'ziga mos bo'lgan, takrorlanmas tariximiz, an'alarimizga asoslangan va shu bilan birga hozirgi davr talablariga javob bera oladigan kadrlar tayyorlash modeli yaratildi.

Milliy dasturimizning bunday xususiyatlaridan biri xorijiy tillarni puxta egallaydigan O'zberistonning xalqaro andazalariga taraqqiyotni taminlay oladigan, dadil, o'z mustaqil fikriga ega, malakali, bilimdon va ma'nan boy mutahassis kadrlarni tayyorlashdan iboratdir. Butun jahon hamjamiyatidan munosib o'rin egallashga intilayotgan, o'z buyuk kelajagini qurishga intilayotgan xalqimiz uchun xorijiy tillarni mukammal bilishning ahamiyati juda kattadir.

Ushbu uslubiy qo'llanma nofilalogik yo'nalishdagi oliy ta'lim muasasalarining fizika yo'nalishi talabalari uchun mo'ljallangan. Qo'llanmada fizika faniga oid matnlar va shu matnlarga oid savollar va mashqlar ingliz tilida berilgan. Bu vaziva va topshiriqlar talabalirining o'z yo'nalishilari bo'yicha og'zaki nutq, yozma tarjima va ingliz tilida gapira olish mahoratlarini oshirish maqsadida auditoriya va mustaqil o'rganish uchun mo'ljallangan. Matnlarga oid berilgan vazifalar talabalarni o'rganilgan matn bo'yicha ijodiy fikrlash qobiliyatini oshiradi va ularni o'z fikrlarini erkin ifodalashga o'rgatadi, tarjima qilish mahoratini, o'qish texnikasini oshiradi. Ularning nafaqat bilimini mustahkamlaydi balki o'z fanlariga oid dunyoviy bilimlarni egallashga yordam beradi.

## Lesson 1. What is Physics? Physics and scopes of Physics

**Physics** is the major science dealing with the fundamental constituents of the universe, the forces they exert on one another, and the results produced by these forces. Sometimes in modern physics a more sophisticated approach is taken that incorporates elements of the three areas listed above; it relates to the laws of symmetry and conservation, such as those pertaining to energy, momentum, charge, and parity.

Physics is closely related to the other natural sciences and, in a sense, encompasses them. Chemistry, for example, deals with the interaction of atoms to form molecules; much of modern geology is largely a study of the physics of the earth and is known as geophysics; and astronomy deals with the physics of the stars and outer space. Even living systems are made up of fundamental particles and, as studied in biophysics and biochemistry, they follow the same types of laws as the simpler particles traditionally studied by a physicist.

The emphasis on the interaction between particles in modern physics, known as the microscopic approach, must often be supplemented by a macroscopic approach that deals with larger elements or systems of particles. This macroscopic approach is indispensable to the application of physics to much of modern technology. Thermodynamics, for example, a branch of physics developed during the 19th century, deals with the elucidation and measurement of properties of a system as a whole and remains useful in other fields of physics; it also forms the basis of much of chemical and mechanical engineering. Such properties as the temperature, pressure, and volume of a gas have no meaning for an individual atom or molecule; these thermodynamic concepts can only be applied directly to a very large system of such particles. A bridge exists, however,



between the microscopic and macroscopic approach; another branch of physics, known as statistical mechanics, indicates how pressure and temperature can be related to the motion of atoms and molecules on a statistical basis.

Physics emerged as a separate science only in the early 19th century; until that time a physicist was often also a mathematician, philosopher, chemist, biologist, engineer, or even primarily a political leader or artist. Today the field has grown to such an extent that with few exceptions modern physicists have to limit their attention to one or two branches of the science. Once the fundamental aspects of a new field are discovered and understood, they become the domain of engineers and other applied scientists. The 19th-century discoveries in electricity and magnetism, for example, are now the province of electrical and communication engineers; the properties of matter discovered at the beginning of the 20th century have been applied in electronics; and the discoveries of nuclear physics, most of them not yet 40 years old, have passed into the hands of nuclear engineers for applications to peaceful or military uses.

### COMPREHENSION QUESTION

**Exercise 1:** Answer the following questions by referring to the reading passage.

1. What does physics study in general?  
.....  
.....
2. What is an approach in modern physics related to?  
.....  
.....
3. Are there any relations between physics and other sciences? Give some illustrations.  
.....

.....  
4. What does statistical physics how?  
.....

.....  
5. When was physics seen as a separate science?  
.....  
.....

**Exercise 2:** Complete each of the following statements with words/ phrases from the reading passage

1. Physics ..... the fundamental constituents of the universe
2. ... a more sophisticated approach .....elements of the three areas...
3. It relates to the laws of .....and conservation
4. Physics is closely related to the other natural.....
5. Chemistry deals with the.....of atoms to form molecules
6. Even living systems are made up of.....particles.
7. The emphasis on the interaction between particles in modern physics, known as the ..... approach
8. This macroscopic approach is..... to the application of physics
9. These thermodynamic concepts can only be applied .....to a very large system of such particles
10. A bridge exists, .....between the microscopic and macroscopic approach

**Exercise 3:** Decide whether each of the following statements is true (T), false (F) or with no information to clarify (N).

1. Modern physics also deals with the fundamental constituents of the universe.
2. There are relations between physics and other natural