**1. Module Name:** Physics

**2. Module Code:** ФАМФ\_6.2.02\_1,5

**3. Module Type:** сompulsory

**4. Term:** 2

**5. Module Volume:** total number of hours - 45 (ECTS credits – 1,5), classhours - 28 (lectures – 12, laboratory works - 16)

**6. Lecturer:** Krasnobokyy Yuriy Mykolayovych, candidate of physico-mathematical sciences, associated professor

**7. Learning Outcomes:**

As a result of the module study a student must:

**know**: the main rules of kinematics; wording and analytical writing of Newton’s laws of dynamics; interconnection of mechanics of point particles and mechanics of solids, conservation laws in classical mechanics, their role in learning natural phenomena and using in practice (reactive motion; gyroscopic devices, conversion of energy in nature); Coulomb’s law, current, voltage, resistance, current density, specific electrical conductivity, electromotive force, work, power, Ohm’s law; Joule-Lents’s law; Faraday’s law of electromagnetic induction, Lambert’s law, Rutherford’s experiment, Boron’s postulates, correspondence principle; Quantum’s theory of atomic and molecular structure, Pauli principle;

**be able to**: to put demonstrational experiments on molecular physics and thermodynamics; use different means and devices of measuring temperature and pressure; make thermometers of resistance and thermocouple; to calculate mathematically experimental results; to demonstrate experiments in optics and to generalize theoretically, to explain usage of optics phenomena in practice.

**8. Type of training:** classroom-based

**9. Required previous and related modules:** school courses of physics, mathematics, and chemistry

**10. Contents of Training Module:** mechanics, molecular physics, thermodynamics, flow of direct and indirect current, planar optics, wave optics, quantum properties of light, atomic physics, nuclear physics.

**11. Recommended literature:**

1. Кучерук І.М., Горбачук І.Т., Луцик П..П. Загальний курс фізики. Навчальний посібник - К: Техніка, ТІ.: Механіка. Молекулярна фізика і термодинаміка. 1999 - 536с.

2. Краснобокий Ю. М., Товбушенко П. П., Яровий М. М. Розв'язування задач з фізики (механіка): Посібник для студентів. - К.: Наук, світ, 2001. - 127с.

3. Ковальов Л. Є., Краснобокий Ю. М. та ін. Фізичний експеримент і математичний апарат фізики: Посібник для студентів. - К.: Наук, світ, 2003. -94с.

**12. Forms and methods of teaching**:lectures, laboratory works, independent work

**13. Methods and criteria of assessment:**

* Current control (80%): defense of the laboratory works results, oral examinations in modules theory;
* Final control (20%): credit
* **14. Language of training:** Ukrainian