Документ подписан простой электронной подписью
Информация о владельце:
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Должность: и.о. директора Института цифрового развития
Дата подписания: 28.03.2024 14:31:33
Уникальный программный ключ:
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**Discipline annotation**

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| Discipline name | **Физика / Physics** |
| Summary | Elements of kinematics.<br>Dynamics of a material point.<br>Work and energy.<br>Energy, work, power.<br>Fundamentals of molecular physics and thermodynamics.<br>Electrostatics:<br>DC electric current:<br>Magnetic field. Electromagnetic induction:<br>Electromagnetic oscillations and waves:<br>Wave properties of light. Elements of quantum optics:<br>Elements of the physics of the atom and the atomic nucleus: |
| Learning outcomes of the discipline | - highlights the basic concepts, laws and models of mechanics, electricity and magnetism, the theory of oscillations and waves, optics, quantum physics, solid state, statistical physics and thermodynamics<br>- applies the basic laws of physics in solving problems of professional activity; able to conduct a physical experiment and process its results<br>- able to analyze the physical essence of the phenomena and processes underlying the functioning of microelectronic equipment, apply basic physical laws and models to solve problems of professional activity |
| Workload, c. u. | 4c. u. |
| Reporting Forms | Graded test- 1st semester |
| **List of essential and supplementary literature necessary for mastering the discipline** | |
| Essential literature | 1. Sivukhin, D. V. General course of physics: [study guide]: in 5 volumes / D. V. Sivukhin, Vol. 1, Mechanics. - 5th ed., reprint. - M.: FIZMATLIT, 2006. - 560 p.: ill. – Stamp: recommended by the Methodological Association. - ISBN 5-9221-0715-1, copies 5<br>2. Sivukhin, D. V. General course of physics: [study guide]: in 5 volumes / D. V. Sivukhin, Vol. 2, Thermodynamics and molecular physics. - 5th ed., Rev. - M.: FIZMATLIT, 2006. - 544 p.: ill. - Stamp: recommended by the Methodological Association. - ISBN 5-9221-0601-5, copies 5<br>3. Sivukhin, D. V. General course of physics: [study guide]: in 5 volumes / D. V. Sivukhin, Vol. 3, Electricity. - 5th ed., reprint. - M.: FIZMATLIT, 2006. - 656 p.: ill. - Stamp: recommended by the Methodological Association. - ISBN 5-9221-0673-2, copies 5<br>4. Sivukhin, D. V. General course of physics: [study guide]: in 5 volumes / D. V. Sivukhin, Vol. 4, Optics. - 3rd ed., reprint. - M.: FIZMATLIT, 2006. - 792 p.: ill. - Stamp: recommended by the Methodological Association. - ISBN 5-9221-0763-1, copies 5 |
| Supplementary literature | 1. Nikerov, V. A. Physics: modern course: textbook / V. A. Nikerov. - 2nd ed. - Moscow: Publishing and Trade Corporation "Dashkov and Co", 2016. - 452 p.: ill. - http://biblioclub.ru/. - ISBN 978-5-394-02349-1<br>2. Savelyev, I. V. Course of general physics: [study guide]: in 4 volumes / I. V. Saveliev; endorsed by I. V. Savelyev, Vol. 1, Mechanics. Molecular physics and thermodynamics. - M.: Knorus, |

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| | 2009. - 528 p.: ill. - Stamp: approved by the Academic Methodological Association. - App.: p. 505-515. - ISBN 978-5-85971-899-3<br><br>3. Savelyev, I. V. Course of general physics: [study guide]: in 4 volumes / I. V. Saveliev; endorsed by I. V. Savelyev, Vol. 2, Electricity and Magnetism. Waves. Optics. - M.: Knorus, 2009. - 576 p. - Stamp: approved by the Academic Methodological Association. - App.: p. 553-560. - Bibliography in subline note - ISBN 978-5-85971-898-6<br><br>4. Savelyev, I. V. Course of general physics: in 4 volumes: [study guide] / I. V. Saveliev; endorsed by I. V. Savelyeva, Vol. 3, Quantum Optics. Atomic physics. Solid state physics. Physics of the atomic nucleus and elementary particles. - M.: KNORUS, 2009. - 368 p.: ill. - Stamp: approved by the Academic Methodological Association. - Bibliography in subline note - ISBN 978-5-85971-900-6<br><br>5. Trofimova, T. I. Course of physics: study guide / T. I. Trofimov. - 20th ed., reprint. - M.: Academia, 2014. - 560 p. - Stamp: approved by the Academic Methodological Association. - ISBN 978-5-4468-0627-0 |