Bachelor Program: Electronics and Nanoelectronics

Field of Studies: Electronic devices

Years of Studies: 4

Language of Training: Russian

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| --- | --- | --- | --- | --- |
| № | Subject | Semester | Hours | Credits |

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| --- | --- | --- | --- | --- |
| B.1.1.1 | History | 1-2 | 144 | 4 |
| B.1.1.2 | [Philosophy](https://www.multitran.com/m.exe?s=philosophy&l1=1&l2=2) | 5 | 108 | 3 |
| B.1.1.3 | Foreign language | 1-3  | 288  | 8  |
| B.1.1.4 | Constitutional state and modern times | 2 | 72 | 2 |
| B.1.1.5 | [Sociology](https://www.multitran.com/m.exe?s=social+science&l1=1&l2=2) | 3 | 108 | 3 |
| B.1.1.6 | [Engineering drawing](https://www.multitran.com/m.exe?s=engineering+drawing&l1=1&l2=2) | 1 | 108 | 3 |
| B.1.1.7 | Perspective and shadow projections and computer graphics |  2 | 108  | 3  |
| B.1.1.8 | Informatics |  1-2 | 252  | 7  |
| B.1.1.9 | Physics | 1-3 | 504 | 96 |
| B.1.1.10 | [Further mathematics](https://www.multitran.com/m.exe?s=further+mathematics&l1=1&l2=2) |  1-2 | 360  | 10  |
| B.1.1.11 |

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|  | Theory of probability and Mathematical Statistics |

 |  3 | 216  | 6  |
| B.1.1.12 | Company Organization and Management  | 7  | 108  | 3  |
| B.1.1.13 | Theoretical foundations of radio engineering |  5 | 108  | 3  |
| B.1.1.14 | [Metrology](https://www.multitran.com/m.exe?s=metrology&l1=1&l2=2), [standardization](https://www.multitran.com/m.exe?s=standardizing&l1=1&l2=2) and [certification](https://www.multitran.com/m.exe?s=certification&l1=1&l2=2)  | 7 | 144 | 4 |
| B.1.1.15 | Fundamentals of design and production technology of electronic tools | 6 | 144 | 4 |
| B.1.1.16 | [Environmental studies](https://www.multitran.com/m.exe?s=environmental+studies&l1=1&l2=2) | 4 | 72 | 2 |
| B.1.1.17 | Theoretical Foundations of Electrical Engineering | 3-4 | 288 | 8 |
| B.1.1.18 | Electronic Materials | 3 | 108 | 3 |
| B.1.1.19 | Electronic Components | 4 | 144 | 4 |
| B.1.1.20 | [Circuits and electronics](https://www.multitran.com/m.exe?s=circuits+and+electronics&l1=1&l2=2) | 6 | 72 | 2 |
| B.1.1.21 | [Health and safety training course](https://www.multitran.com/m.exe?s=health+and+wellness&l1=1&l2=2)  | 5 | 108 | 3 |
| B.1.1.22 | Microprocessor devices |  8 | 144  | 4  |
| B.1.1.23 | [Physical training and sports](https://www.multitran.com/m.exe?s=physical+training+and+sports&l1=1&l2=2) | 1 | 72 | 2 |
| B.1.2.1 | [Chemistry](https://www.multitran.com/m.exe?s=chemistry&l1=1&l2=2) | 1 | 108 | 3 |
| B.1.2.2 | Modern problems of electronics and nanoelectronics |  1 | 108  | 3  |
| B.1.2.3 | [Microelectronics](https://www.multitran.com/m.exe?s=microelectronics&l1=1&l2=2) | 6 | 144 | 4 |
| B.1.2.4 | Physical fundamentals of electronics | 5-7 | 504 | 14 |
| B.1.2.5 | [Nanoelectronics](https://www.multitran.com/m.exe?s=nanoelectronics&l1=1&l2=2) | 6 | 144 | 4 |
| B.1.2.6 | Methods of mathematical physics |  4 | 144  | 4  |
| B.1.2.7 | [Quantum mechanics](https://www.multitran.com/m.exe?s=quantum+mechanics&l1=1&l2=2) and [statistical physics](https://www.multitran.com/m.exe?s=statistical+physics&l1=1&l2=2) |  5 | 144  | 4  |
| B.1.2.8 | [Rational mechanics](https://www.multitran.com/m.exe?s=rational+mechanics&l1=1&l2=2) | 3 | 72 | 2 |
| B.1.2.9 | Microwave solid state devices | 6  | 144  | 4  |
| B.1.2.10 | Electrodynamics and microwave technology |  5 | 144  | 4  |
| B.1.2.11 | Physical foundations of quantum and optical electronics | 8  | 144  | 4  |
| B.1.2.12 | Automation of electronic device design |  7 | 108  | 3  |
| B.1.2.13 | Powerful microwave vacuum equipment | 8 | 72 | 2 |
| B.1.2.14 | Technology of materials and products of electronics and nanoelectronics | 7 | 144 | 4 |
| B.1.2.15 | [Pulsing and [digital](https://www.multitran.com/m.exe?s=digital+device&l1=1&l2=2) device](https://www.multitran.com/m.exe?s=pulsing+device&l1=1&l2=2)s | 7-8 | 216 | 6 |
| B.1.2.16 | 3D modeling and CAD basics | 3 | 72 | 2 |
| B.1.3.1.1 | [Psychology](https://www.multitran.com/m.exe?s=psychology&l1=1&l2=2) | 3 | 72 | 2 |
| B.1.3.1.2 | [Engineering psychology](https://www.multitran.com/m.exe?s=engineering+psychology&l1=1&l2=2) | 3 | 72 | 2 |
| B.1.3.2.1 | Foreign language for professional communication | 4-5 | 144 | 4 |
| B.1.3.2.2 | [Technical translation](https://www.multitran.com/m.exe?s=technical+translation&l1=1&l2=2) | 4-5 | 144 | 4 |
| B.1.3.3.1 | Physical experiment software | 3 | 72 | 2 |
| B.1.3.3.2 | Global [computer networks](https://www.multitran.com/m.exe?s=computer+networks&l1=1&l2=2) |  3 | 72  | 2  |
| B.1.3.4.1 | [Programming with visual expressions](https://www.multitran.com/m.exe?s=programming+with+visual+expressions&l1=1&l2=2) | 7 | 72 | 2 |
| B.1.3.4.2 | [Optimization strategy](https://www.multitran.com/m.exe?s=optimization+strategy&l1=1&l2=2) |  7 | 72  | 2  |
| B.1.3.5.1 | Physical fundamentals of [spinelectronics](https://www.multitran.com/m.exe?s=spinelectronics&l1=1&l2=2) | 4 | 144 | 4 |
| B.1.3.5.2 | [Solid-state physics](https://www.multitran.com/m.exe?s=solid-state+physics&l1=1&l2=2) | 4 | 144 | 4 |
| B.1.3.6.1 | Physical fundamentals of [superconducting electronics](https://www.multitran.com/m.exe?s=superconducting+electronics&l1=1&l2=2) | 4 | 144 | 4 |
| B.1.3.6.2 | [Condensed-matter physics](https://www.multitran.com/m.exe?s=condensed-matter+physics&l1=1&l2=2) | 4 | 144 | 4 |
| B.1.3.7.1 | Methods of [nonharmonic](https://www.multitran.com/m.exe?s=nonharmonic&l1=1&l2=2) dynamics | 5 | 144 | 4 |
| B.1.3.7.2 | [Thermodynamics](https://www.multitran.com/m.exe?s=thermodynamics&l1=1&l2=2) of nanoscaled system  | 5 | 144 | 4 |
| B.1.3.8.1 | Fundamentals of beam and plasma technologies |  6 | 180  | 5  |
| B.1.3.8.2 | Welding and soldering technology for electronic products | 6 | 180 | 5 |
| B.1.3.9.1 | Passive microwave device | 7 | 180 | 5 |
| B.1.3.9.2 | Nanoelectronic element base of computer technology | 7 | 180 | 5 |
| B.1.3.10.1 | Modeling of electronic devices and devices in modern CAD | 8 | 180 | 3 |
| B.1.3.10.2 | New types of electrovacuum devices | 8 | 108 | 3 |
| B.1.3.11.1 | Team sports  | 2-6 | 328 | 0 |
| B.1.3.11.2 | Therapeutic Physical Fitness  | 2-6 | 328 | 0 |
| B.2.1.1 | Teaching training | 2 | 216 | 6 |
| B.2.1.2 | Manufacturing practice | 6 | 216 | 6 |
| B.2.1.3 | Undergraduate practice | 8 | 216 | 6 |
| B.2.2.1 | Teaching (scientific- information)training | 4 | 216 | 6 |
| B.2.2.2 | Manufacturing practice (research work) | 8 | 108 | 3 |
|  | **Total** |  | **8968** | **240** |