Master Program: Technological machines and equipment

Field of Studies: Comprehensive solution to innovative problems of creating competitive technological equipment

Years of Studies: 2

Language of Training: Russian

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| № | Subject | Semester | Hours | Credits |
| **M.1.1** | **Basic part** |  |  |  |
| М.1.1.1 | Technical translation | 1 | 72 | 2 |
| М.1.1.2 | Intellectual Property Protection | 3 | 72 | 2 |
| М.1.1.3 | Management and marketing | 3 | 72 | 2 |
| М.1.1.4 | Philosophy of Science and Technology | 1 | 72 | 2 |
| M.1.1.5 | Composite materials in mechanical engineering | 1 | 108 | 3 |
| M.1.1.6 | Computer technology in the design of technological equipment | 2 | 108 | 3 |
| M.1.1.7 | Organization and planning of a scientific experiment | 3 | 108 | 3 |
| M.1.1.8 | Mathematical modeling in mechanical engineering | 2 | 108 | 3 |
|  | **Total in the base part** |  | **720** | **20** |
| **M.1.2** | **Variable part** |  |  |  |
| М.1.2.1 | Foreign language for academic purposes | /3/2 | /144 | /4 |
| М.1.2.1 | Foreign language for academic purposes | 2 | 72 | 2 |
| М.1.2.1 | Foreign language for academic purposes | 3 | 72 | 2 |
| М.1.2.2 | Modern issues of philosophy | 2 | 72 | 2 |
| М.1.2.3 | Additive materials, technologies and equipment | 3 | 108 | 3 |
| М.1.2.4 | Structural synthesis of production equipment layouts | 2 | 108 | 3 |
| М.1.2.5 | Process equipment control systems | 1 | 144 | 4 |
| М.1.2.6 | Production of complex products | 1 | 108 | 3 |
| М.1.2.7 | CAD process equipment | 1 | 72 | 2 |
| М.1.2.8 | Optimization of technological processes in mechanical engineering | 1 | 108 | 3 |
| М.1.2.9 | Mathematical modeling of dynamic systems | 3 | 108 | 3 |
| М.1.2.10 | Technology Entrepreneurship | 3 | 72 | 2 |
| **M.1.3** | **Elective Courses** |  |  |  |
| М.1.3.1.1 | Multipurpose Machine Programming Systems | 3 | 144 | 4 |
| М.1.3.1.2 | Tooling for multipurpose equipment | /3 | /144 | /4 |
| М.1.3.2.1 | CAD processes | 1 | 180 | 5 |
| М.1.3.2.2 | Automated systems for technological preparation of production | /1 | /180 | /5 |
| М.1.3.2.3 | Military training | /1 | /180 | /5 |
| М.1.3.3.1 | Metrological assurance of quality control of engineering products | 2 | 108 | 3 |
| М.1.3.3.2 | Quality management systems according to ISO 9001-2015 | /2 | /108 | /3 |
| М.1.3.4.1 | Organization of scientific research in mechanical engineering | 2 | 108 | 3 |
| М.1.3.4.2 | Research Methodology | /2 | /108 | /3 |
|  | **Total for the variable part** |  | **1584** | **44** |
| **M.2** | **Practices (optional part)** |  |  |  |
| М.2.1 | Training \* | 2 | 216 | 6 |
| М.2.2 | Production (pedagogical) \*\* | 4 | 108 | 3 |
| М.2.3 | Production (technological) \*\* | 4 | 216 | 6 |
| М.2.4 | Undergraduate | 4 | 216 | 6 |
| М.2.5 | research work | /1,2,3/4 | 1044 | 29 |
| М.2.5 | research work | 1 | 180 | 5 |
| М.2.5 | research work | 2 | 216 | 6 |
| М.2.5 | research work | 3 | 216 | 6 |
| М.2.5 | research work | 4 | 432 | 12 |
| **M.3** | **State final certification (basic part)** |  | 216 | 6 |
|  | **Total in direction** |  | **4320** | **120** |
| **Ф.** | **Optional disciplines** |  |  |  |
| Ф.1 | Military training | 2 | 243 |  |
| Ф.2 | Automation of design and technological preparation for the production of technological machinery and equipment | 1 | 108 | 6 |
| Ф.3 | Integrated control of engineering products | 2 | 108 | 6 |