# Master Program: Heat power engineering and heat engineering

Field of Studies: [Industrial Thermal Power Engineering](https://www.multitran.com/m.exe?s=Industrial+Thermal+Power+Engineering&l1=1&l2=2)

Years of Studies: 2

Language of Training: Russian

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| --- | --- | --- | --- | --- |
| **№** | **Subject** | **Semester** | **Hours** | **Credits** |
| **M.1.1** | **Mandatory part of Block 1** |  |  |  |
| M.1.1.1 | SpokenForeignLanguage | 1 | 108 | 3 |
| M.1.1.2 | Technicaltranslation | 3 | 108 | 3 |
| M.1.1.3 | Decisiontheory | 1 | 108 | 3 |
| M.1.1.4 | Project management | 3 | 108 | 3 |
| M.1.1.5 | Theory and practice of engineering research | 2,3 | 216 | 6 |
| M.1.1.6 | Organizational behavior | 1 | 108 | 3 |
| **M.1.2** | **Variable part of Block 1** |  |  |  |
| M.1.2.1 | Researchphilosophy | 2 | 72 | 2 |
| M.1.2.2 | Organization and planning of heat and electric energy production | 2 | 72 | 2 |
| M.1.2.3 | Modern problems of heat power engineering, heat engineering and heat technologies | 1 | 72 | 2 |
| M.1.2.4 | Special issues of mathematical modeling of coupled processes of gas dynamics and heat and mass transfer | 2 | 108 | 3 |
| M.1.2.5 | Special issues of calculation and design of apparatus for gas emission neutralization systems in the power industry and heating technologies | 1 | 108 | 3 |
| M.1.2.6 | Principles of effective process control in heat power engineering, heat engineering and heat technology | 3 | 72 | 2 |
| M.1.2.7 | Innovative technologies in the power system | 2 | 108 | 3 |
| M.1.2.8 | Methods of thermodynamic analysis of heat power plants and energy supply system | 2 | 144 | 4 |
| M.1.2.9 | Research questions of reliability of power systems | 3 | 108 | 3 |
| M.1.2.10 | Optimization of schemes and parameters of combined heat power plants and heat supply systems | 1 | 72 | 2 |
| M.1.2.11 | Efficiency of using renewable energy sources for energy supply of industrial and municipal enterprises | 3 | 72 | 2 |
| M.1.2.12 | Fundamentals of Entrepreneurship | 3 | 72 | 2 |
| M.1.3 | **Elective Courses** |  |  |  |
| M.1.3.1.1 | Energy supply of enterprises and cities on the basis of combined production of energy carriers and secondary energy resources | 1 | 180 | 5 |
| M.1.3.1.2 | Energy inspection of sources and energy supply systems | 1 | 180 | 5 |
| M.1.3.1.3 | Militarytraining | 1 | 180 | 5 |
| M.1.3.2.1 | Thermal power plants of gas transportation and storage systems | 2 | 144 | 4 |
| M.1.3.2.2 | Operation of gas transportation and storage systems | 2 | 144 | 4 |
| M.1.3.3.1 | Prevention of emergency operation of sources and heat supply systems | 3 | 108 | 3 |
| M.1.3.3.2 | Technical and economic fundamentals of projecting thermal power plants | 3 | 108 | 3 |
| **M.2.2.** | **Variable part of Block 2** |  |  |  |
| M.2.2.1 | Research work | 1-4 | 1080 | 30 |
| M.2.2.2 | Educational practice (to obtain primary skills in working with software in the field of professional activity) | 2 | 216 | 6 |
| M.2.2.3 | Production (pedagogical) practice | 4 | 108 | 3 |
| M.2.2.4 | Production (R&D) practice | 4 | 216 | 6 |
| M.2.2.5 | Undergraduatepractice | 4 | 216 | 6 |
| **M.3** | **State final certification** |  | **216** | **6** |
|  | **Total** |  | **4320** | **120** |
| **F.** | **Optional disciplines** |  |  |  |
| F.1 | Militarytraining | 2 | 243 |  |
| F.2 | Methods for increasing the efficiency of gas transportation and storage systems | 3 | 108 |  |
| F.3 | Energy and resource saving technologies in energy systems and complexes | 2 | 108 |  |
|  | **General indicators** |  |  |  |
|  | Numberofcourseprojects |  |  | 0 |
|  | Number of term papers (RGR) |  |  | 5 |
|  | Numberofexams |  |  | 8 |
|  | Thenumberofoffsets |  |  | 22 |