«CONFIRM»
Head of department: T.A.Faiziev
«18» 08 2021 year

# CALENDAR PLAN OF THE SUBJECT TOWARDS PROGRAM
## (lectures, seminars, laboratory, practical exercises, course work)

| | | | | |
|---|---|---|---|---|
| **Faculty: Energy** | Direction: Energy (Heat Power Engineering) | Academic Group * | The lecture | 20 |
| Name of the science: "Thermodynamics Cycles of Energy Devices " | | | Practical training | 16 |
| The speaker: | S.I.Khamraev | | Laboratory | - |
| Consultant and practical workshop: | S.I.Khamraev | | Independent work | 24 |
| Independent workshop facilitator: | S.I.Khamraev | | Course work | - |
| | | | **Total** | 60 |

| № | The name of the topic | Separated hours | Completed information | | Signature of the teacher |
|---|---|---|---|---|---|
| | | | Month and Day | Number of hours | |
| 1 | 3 | 4 | 5 | 6 | 7 |
| | **The lecture** | | | | |
| 1 | History, development trends and modern composition of thermodynamics. | 2 | | | |
| 2 | Classifications and characteristics of thermodynamic processes. Carnot cycle. | 2 | | | |
| 3 | Cycles of steam turbine installations. Cycles of Renckin. | 2 | | | |
| 4 | Operation of the turbine of the feed pump. | 2 | | | |
| 5 | Design and classification of internal combustion engines | 2 | | | |
| 6 | Compressors. | 2 | | | |
| 7 | Jet engine cycles. (cycles of reactive engines) | 2 | | | |
| 8 | Cycles of gas turbine plants | 2 | | | |
| 9 | Cycles of combined-cycle plants | 2 | | | |
| 10 | Refrigeration systems | 2 | | | |
| | **TOTAL** | **20** | | | |
| | **Practical training** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1 | Calculation of the basic thermodynamic processes | 2 | | | |
| 2 | Tables and diagrams of water and steam | 2 | | | |
| 3 | Carnot cycle and its efficiency | 2 | | | |
| 4 | Cycles of steam turbine units and its efficiency | 2 | | | |
| 5 | Cycles of gas turbine plants and its efficiency | 2 | | | |
| 6 | Cycles of internal combustion engines and its efficiency | 2 | | | |
| 7 | Compressors and its efficiency | 2 | | | |
| 8 | Refrigerating plants and its efficiency | 2 | | | |
| | **TOTAL** | **16** | | | |
| | **Independent work** | | | | |
| 1 | Calculation of gas cycles. | 4 | | | |
| 2 | Determination of the characteristics of steam turbine plants. | 4 | | | |
| 3 | Ideal piston compressors and its internal combustion engines. | 4 | | | |
| 4 | The cycle of internal combustion engines with the input of heat to the working fluid with the volume supplied. | 4 | | | |
| 5 | Cycle engines of internal combustion engines with the input of heat to the working fluid with the volume supplied. | 4 | | | |
| 6 | Cycle engines of internal combustion with the input of heat to the working fluid at a post pressure. | 4 | | | |
| | **TOTAL** | **24** | | | |

**Leading teacher:** **S.I.Khamraev**