## **TECHNICAL UNIVERSITY OF VARNA**



| Ratified by: |  |  |  |      |  |  |  |
|--------------|--|--|--|------|--|--|--|
| Rector.      |  |  |  | <br> |  |  |  |

/Prof. Rosen Vasilev, DSc/

## CURRICULUM

Professional orientation: ENERGETICS

Educational and qualification degree: MASTER

Специалност: THERMAL ENGINEERING AND RENEWABLE ENERGY SOURCES

Professional qualification: MASTER - ENGINEER

Mode of study: FULL - TIME

Length of study: 1,5 years / 3 semesters

For holders of educational and qualificational degree "Bachelor" in speciality "Thermal Engineering" и "Thermal Engineering and Renewable

**Energy Sources**"

|        |  |       |                              |                | nt.      | Weekly auditorium<br>load |                      |                |            |                      |            | _                 | nts                    |              |
|--------|--|-------|------------------------------|----------------|----------|---------------------------|----------------------|----------------|------------|----------------------|------------|-------------------|------------------------|--------------|
| J.     |  |       | sses                         |                |          |                           | I                    | emina          | rs         | ises                 |            | ed load           | stude                  | dits         |
| Number | Subject Name   | Exams | Inter-semester<br>Evaluation | Course project | Accepted | Lectures                  | Seminar<br>Exercises | Course project | Assignment | Laboratory Exercises | Total load | Unsupervised load | Whole load of students | ECTS credits |
| 1      | 2  | 3     | 4                            | 5              | 6        | 7                         | 8                    | 9              | 10         | 11                   | 12         | 13                | 14                     | 15           |
| 1      | Applied Mathematics                                  |       | *                            |                |          | 30                        |                      |                |            | 30                   | 60         | 120               | 180                    | 6            |
|        | Applied Fluid Mechanics                              | *     |                              |                |          | 30                        |                      |                |            | 30                   | 60         | 120               | 180                    | 6            |
| 3      | Modeling and Control of Heat Processes               | *     |                              |                |          | 30                        |                      |                | 15         | 30                   | 75         | 120               | 195                    | 7            |
| 4      | Electronic Systems For Thermal Processes  Management |       | *                            |                |          | 15                        |                      |                |            | 15                   | 30         | 90                | 120                    | 4            |
| 5      | Thermodynamic Analysis                               |       | *                            |                |          | 30                        |                      |                |            | 30                   | 60         | 90                | 150                    | 5            |
| 6      | Cooling and Frosting                                 |       | *                            |                |          | 30                        |                      |                |            | 30                   | 60         | 90                | 150                    | 5            |
|        | Total for the 1 semester:                            | 2     | 4                            | 0              | 0        | 165                       | 0                    | 0              | 15         | 165                  | 345        | 630               | 975                    | 33           |
| 7      | Gas Supply Systems                                   | *     |                              |                |          | 30                        |                      |                |            | 30                   | 60         | 90                | 150                    | 5            |
| 8      | Presentation Methods and Equipment                   | *     |                              |                |          | 30                        |                      |                | 15         | 30                   | 75         | 105               | 180                    | 6            |
| 9      | Industrial Thermal Engineering Systems               | *     |                              |                |          | 30                        |                      |                | 15         | 30                   | 75         | 120               | 195                    | 7            |
|        | Systems for Renewable Energy Sources                 |       | *                            |                |          | 30                        |                      |                |            | 30                   | 60         | 90                | 150                    | 5            |
|        | Air and Gases Cleaning                               | *     |                              |                |          | 30                        |                      |                |            | 30                   | 60         | 90                | 150                    | 5            |
| 12     | Energy Performance of Building Envelop               |       | *                            |                |          | 30                        |                      |                | 15         | 30                   | 75         | 105               | 180                    | 6            |
|        | Total for the 2 semester:                            | 4     | 2                            | 0              | 0        | 180                       | 0                    | 0              | 45         | 180                  | 405        | 600               | 1005                   | 34           |
|        |  |       |                              |                |          |                           |                      |                |            |                      |            |                   |                        |              |
|        | Totals for the whole course of education             | 6     | 6                            | 0              | 0        | 345                       | 0                    | 0              | 60         | 345                  | 750        | 1230              | 1980                   | 67           |
|        | Facultative Subjects                                 |       |                              |                |          |                           |                      |                |            |                      |            |                   |                        |              |
|        | і асапанує сивјесто                                  |       |                              |                |          |                           |                      |                |            |                      |            |                   |                        |              |
|        |  |       |                              |                |          |                           |                      |                |            |                      |            |                   |                        |              |
|        |  |       |                              |                |          |                           |                      |                |            |                      |            |                   |                        |              |
|        |  |       |                              |                |          |                           |                      |                |            |                      |            |                   |                        |              |

| Types of graduation   | Semester | Unsupervised load | ECTS credits |
|---|----------|-------------------|--------------|
| Preparation of Diploma Thesis / Preparation for State Examination | 2        | 450               | 15           |
| Defence of Diploma Thesis / State Examination                     | 3        | 450               | 15           |

Approved by the Academic Board of TU-Varna:

Protocol № 11 / 06.06.2016

Head of Department:

| Мо | dified with Protocols: № 14 / 24.10.2016, № 24 / 30.10.2017  |
|----|--|
| Va | lid from 2017/2018 academic year   |
|    |  |
|    |  |
|    | ne weekly plan of the lessons is fixed according to the Academic Board "Structure of the Learning Process" adopted for rent academic year. |
|    |  |
|    |  |
|    |  |
|    |  |
|    |  |

/Assoc. Prof. I. Pavlova, PhD/

Dean of Faculty:

/Assoc. Prof. I. Hadzhidimov, PhD/