BM6441

Study program / course: Mechanical engineering

Type and level of study: Bachelor academic studies

Course: Heating, Air Conditioning and Solar Energy

Lecturers: Milorad Lj. Bojic

Status of course: Elective for module M_4, VI semester

Number of ECTS: 6

Precondition: None

The objective of course

Education objective is to introduce student with characteristics and design of installations for heating, air conditioning and solar energy.

The outcome of course

Based on obtained knowledge, students are qualified to design installations for heating, air conditioning and solar energy.

Syllabus

Theoretical study

Thermal comfort.

HEATING.

Heating needs. Heat plants and heat devices. Pipe networks.
Hot water heating. Steam heating.

AIR CONDITIONING.

Cooling needs. Selection of Air conditioning Devices.
Dimensioning of air conditioning devices.

APPLICATION OF SOLAR ENERGY

Solar energy; Solar collectors

During their exercises in computer room, students work 1 project (either installation of central heating of some family house, or air conditioning of one cinema hall or installation of one solar collector). On two field and one laboratory exercise, students are introduced to devices for heating, air conditioning, and solar energy and measure thermal characteristics of these devices.

Recommended reading

1. Zrnic, S., Ćulum, Ž. Heating and Air Conditioning with Aplication of Solar energy (in Serbian), Naucna knjiga, Belgrade, 1988.
2. Todorovic, B., Design of Plants for central heating (in Serbian), Mechanical engineering Faculty at Belgrade, XI edition, 2005.
3. Todorovic, B., Air Conditioning (in Serbian), SMEITS, II edition, 2005.

The number of hours of active teaching:				Other classes:
Theory: 3	Practical classes: 1.6	Other forms of teaching: 0.4	Research study: 0	1

Methods of teaching

Lectures using video presentations, multimedia, laboratory.

Evaluation of knowledge

Pre-final exam obligations	points	Final exam	points
Activities during the teaching:	**5**		
Activities during practical classes:	**5**	Verbal exam	**30**
Colloquiums(s) :	**45+15**		
Seminar(s) :	**-**		