

Module title: Heat transfer laboratory

Module code: 24-14-304-02

Module credit: 1

Module objectives: This course is presented for undergraduate students with a major in mechanical engineering. Heat transfer laboratory provides students an opportunity to carry out experiments that illustrate topics in a realistic heat transfer setting and at the same time learn the specifics of the software used.

Term: Fall-September

Text: The instruction of heat transfer laboratory.

Lecturer information:

Name: Dr. Samira Payan
Academic rank: Associate professor
Email address: s_payan_usb@eng.usb.ac.ir

Assessments: The students learning will be evaluated according to the below table:

Attendance and the performance of experiment: 35%

Note: Laboratory attendance is important for maximizing the learning benefits of this course and therefore regular attendance is expected. Learning is motivated through active discussion, demonstration and practice of the topics being studied. You are responsible for all completed work, schedule adjustments and assigned work addressed during class. Please inform your instructor if you are unable to attend any scheduled class session. It is your responsibility to make arrangements for any planned or unplanned absences (i.e. interviews, illness, personal emergencies, etc.).

Final-term exam and laboratory reports: 65%

References

[1] incropera, Heat Transfer, Fourth edition, 2001.

Module subjects:

In each class meeting, a group (at last two students) must perform a specified experiment and note the obtained data in a specific form. In the end of each experiment, the specific form must be assigned by the laboratory technician. Additionally, a laboratory report must be prepared by the students and then it must be delivered to the lecturer in the next class meeting.

The heat transfer laboratory course contains 5 experiments as below:

1st experiment: The investigation of conduction heat transfer and the measurement of object thermal conductivity

2st experiment: The investigation of radiative and convective heat transfer modes

3st experiment: Double tubes heat exchanger

4st experiment: The cross flow on a tubes bank

5th experiment: The measurement of radiation intensity