Name of the module: Introduction to basic spectroscopic techniques

Number of module: 240.2.0011

BGU Credits: 2

ECTS credits:

Academic year:

Semester: full semester

Hours of instruction:

Location of instruction:

Language of instruction: Hebrew, English

Cycle:

Position: Basic class for different departments students

Field of Education: Open for graduate students from Natural sciences and engineering and Health sciences

Responsible department:

General prerequisites: basic knowledge in chemistry

Grading scale: metric 0-100

Aims of the module: An introduction to basic principles in spectroscopic methods

Objectives of the module: The course will provide the students with key concepts in optics and spectroscopy in analytical methods. Attributes such as light nature and properties, basic light and matter interactions. Methods bound on these interactions. Type of instruments and preparation of the samples for measurements. Results and interpretations of them.

Learning outcomes of the module: On successful completion of the course, the student should be able to:

1. be introduced to the field of light and optic science using examples from everyday life.
2. be familiar with the different spectroscopy methods and their applications.
3. understand the effect of structure, chemical bonding on type of spectroscopy techniques can be using.
4. describe the basic principles of spectroscopy methods and its application for determination of materials.
5. be familiar with the different types of instruments and the basics of working on them and preparing a sample for measurements

Attendance regulation: No attendance requirements

Teaching arrangement and method of instruction: Lectures and exercises in class, practice class.

Lecturer: Dr. Sofiya Kolushev
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Office hours:

Module evaluation: at the end of the semester the students will evaluate the class in order to draw conclusions for improvement, and for the university's internal needs.

Confirmation:

Last update:

Assessment:

how the students will be assessed in the module

Report on practice part 100%

Work and assignments:

Time required for individual work: in addition to attendance in class, the students are expected to do their assignment and individual work:

Module Content\ schedule and outlines:

Lectures:	Hours
Introduction to light properties	2
UV-Vis spectroscopy	2
Fluorescence	2
FTIR	2
RAMAN	2
X-ray techniques	2
Atomic absorption and ICP	2
Additional techniques	2
Practice part	10

Required reading:

*** All learning material will be available to the students on the module's website (high-learn)/ library/ electronic documents available to BGU students.**