Level: bachelor

Course title: Chemistry of Organic Dyes

Status: elective

ECTS: 5

Requirements: none

Learning objectives

Acquiring knowledge about the properties, origins, significance, and division structures of organic dyes. Introduction to synthesis and application of synthetic and natural organic dyes. Acquiring knowledge about organic pigments division and structure of organic pigments.

Learning outcomes

Demonstration of acquired knowledge about the chemical properties, structure and application of organic dyes and pigments. The application of the acquired theoretical knowledge and experimental techniques in the synthesis and isolation of organic dyes. Formulating conclusions about the possible applications of natural and synthetic organic dyes and pigments, as well as their impact on the environment.

Syllabus

Theoretical instruction

The concept of the origin of coloration. Classification of dyes. The most important types of colours. Structure, synthesis and application of colour: polymethine dyes, nitro and nitroso dyes, azo dyes, di and triphenylmethine dyes and their aza analogues, indigoid dyes, anthraquinone dyes, reactive dyes, sulphur dyes. Organic pigments. Classification and structure of organic pigments. Phthalocyanine pigments. Azo pigments. Synthesis of pigments. Effect of organic dyes and pigments on the environment.

Practical instruction

Synthesis of selected organic dyes. Isolation natural dyes.

Weekly teaching load				Other:
Lectures: 2	Exercises: 2	Other forms of teaching:	Student research:	