forea@kpi.ua
www.forea.kpi.ua
(+38 044) 454 91 99

Course: Instrumental methods of chemical analysis of polymer and composite materials

LANGUAGES OF EDUCATION: Russian, English

SUBJECT of educational course: learning the basic principles of instrumental chemical analysis of polymer compositions and their components, including methods of spectral and chromatographic analysis, equipment and features of the interpretation of research results.

THE GOAL of the course includes formation of following **abilities** of students:

- study of instrumental methods of polymer composites and elastomers identification.
- ability to apply basic analytical methods and assessment, including spectral, optical and magnetic
- ability to plan, conduct and interpret research data, which allows to proceed directly to the design of compositions with desired properties.

MAIN TASK OF EDUCATIONAL COURSE

In accordance to demands of educational-professional program, after the finishing of this course must demonstrate such learning outcomes:

Knowledge:

- ✓ scientific fundamentals of instrumental methods of analysis;
- ✓ design features of devices for instrumental studies of polymer compositions;
- ✓ basic principles of interpretation of obtained data;
- ✓ methodology of studies planning, applied to instrumental research.

Skills:

- ✓ Interpretation of instrumental analysis results;
- ✓ Samples preparation;
- ✓ Planning for the complex research to establish the composition.

Experience:

- ✓ Application of the general theoretical basics of materials science and physical principles of the interaction of matter with the field for the purpose of analysis, research and design of the polymer compositions.

COURSE DURATION: 24 academic hours of lectures; 18 academic hours of seminars.

REQUIREMENTS TO STUDENTS: knowledge in polymer chemistry, physics (optics section), organic chemistry, physical chemistry, general and inorganic chemistry.