

PLANNING A SCIENCE EXPERIMENT

COURSE SYLLABUS ABSTRACT

Specialty 1-40 80 02 System analysis, management and information processing (by branch)

| | STUDY MODE, full-time |
|---|-----------------------|
| Year | 2 |
| Semester | 3 |
| Lectures, hours | 34 |
| Laboratory sessions, hours | 34 |
| Pass/fail, semester | 3 |
| Contact hours | 68 |
| Independent study, hours | 238 |
| Total course duration in hours / credit units | 306/9 |

1. Course outline

The aim of the discipline is to familiarise undergraduates with the basic definitions and concepts of experimental research, methods of planning and organisation of experimental research, principles of data analysis and processing, learning typical examples of the application of modern methods of processing experimental research results.

2. Course learning outcomes

The objectives of the discipline are: mastering the specific terminology of the mathematical theory of experiment planning; learning the theory of planning of passive and active experiments; conducting experiments to solve engineering problems.

As a result of mastering the discipline the student should

know: basics of planning experiments and processing of their results; general rules for the analysis of data and drawing conclusions from the experimental results; statistical methods in conducting experiments and analysis of experimental results;

be able to: plan and conduct experimental research, process experimental results; conduct research of new technologies, tools, projects and solutions, evaluate their innovation potential.

To know: methods and equipment of experimental research; modern means of analysis and mathematical processing of measurement data.

3. Competencies

UK-1 Apply methods of scientific cognition in research activities, generate and implement innovative ideas

UK-4 Be able to communicate, show leadership skills, be capable of team building and development of strategic goals and objectives

UK-6 Be able to foresee conditions for professional activity and solve professional tasks under uncertainty

SK-11 Analyse and solve scientific and technical problems in planning and conducting scientific experiments

4. Requirements and forms of midcourse evaluation and summative assessment: credit