ODESSA I.I. MECHNYKOV NATIONAL UNIVERSITY
FACULTY OF MATHEMATICS, PHYSICS AND INFORMATION TECHNOLOGIES
DEPARTMENT OF MATHEMATICAL SUPPORT OF COMPUTER SYSTEMS

Syllabus of the "Master's seminar" course

Amount	the total number of: credits – 3; hours – 90; content modules - 3
Semester	spring
Days, Time, Place	according to the class schedule
Teacher(s)	Eugene Malakhov, Doctor of Sciences (Tech.), Professor, Head of the Department of Mathematical Support of Computer Systems
Contact phone number	(048)7340723
E-mail	eugene_malakhov@i.ua
Workplace	department of mathematical support of computer systems
Consultations	face-to-face consultations: Monday, 13.00-14.00 online consultations: ZOOM (link is generated at the beginning of classes)

COMMUNICATION

Communication with students will be carried out by e-mail, in the classroom or via ZOOM.

COURSE ABSTRACT

Subject of the studying the course is a process of scientific research of masters.

Course Prerequisites
The course material is based on previously acquired knowledge, practical skills and skills of the subjects and courses of the educational program of the second (master's) level of higher education in the specialty 126 "Information systems and technologies".

Course Post-requisites
This course complements and is the basis for mastering the following disciplines of the educational and professional master's training program in the specialty 126 "Information systems and technologies": "Professional research practice", "Execution of master's qualification work".

The purpose of the course is for students to acquire the skills of public presentations related to master's studies, presentation of results and participation in discussions.

Course content
Methods and recommendations regarding:
– *structuring qualification papers and scientific articles.*
– *carrying out a review of subject areas;*
– *determination of research relevance;*
– *setting research tasks.*
– *analysis of existing methods and technologies intended for solving the problems of master's research;*
– *presentation and defense of methods and technologies proposed by the master's student for solving research problems.*

EXPECTED RESULTS

As a result of studying the course, the student must

know: basic rules and approaches for planning research, structuring master's theses, scientific articles and public reports.

be able: form presentations of the results of scientific research, conduct discussions on scientific topics, evaluate reports.

Competencies that the student receives as a result of studying the course:
− *ability to abstract thinking, analysis and synthesis.*
− *knowledge about the rules for setting a research task, approaches to choosing a goal, analyzing a problem and methods of solving it, rules for presenting results, leading a discussion and publishing scientific materials.*
− *ability to formulate requirements for life cycle stages of service-oriented information systems.*
− *the ability to solve physical and mathematical problems related to the modeling of natural phenomena or technological processes, using modern computer methods.*

Learning outcomes: upon completion of the course, the student will have skills
− *search for necessary information in scientific and technical literature, databases, other sources, analyze and evaluate this information.*
− *justify the choice of technical and software solutions, taking into account their interaction and potential impact on solving organizational problems, organize their implementation and use.*
− *solve the problems of digital transformation in new or unknown environments based on specialized conceptual knowledge, including modern scientific achievements in the field of information technology, research and integration of knowledge from various fields.*
− *provide author support for the design and implementation of information systems and technologies, use knowledge of the intellectual property system in inventive activity and international cooperation in the field of IT.*
− *to choose the most expedient for the company the option of organizing the marketing of software products and to present in general the sequence of works on the organization and functioning of any channel for the sale of software products and information technologies.*
− *present research results, conduct discussions, publish research results.*

FORMS AND METHODS OF TEACHING

The course will be taught in the form of seminar classes (18 hours), organization of students' independent work (72 hours).

The main emphasis of the preparation of the students is on the independent work of the students on the preparation of individual research tasks in the form of reports and presentations on the results of a certain stage of master's research, holding discussions.

During the teaching of the course, the following teaching methods are used: verbal (explanation); visual (PowerPoint presentation); practical (seminar works); work with literary sources (independent work of students, individual research tasks).