

SYLLABUS 2019/2020

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| Level of study | Master's Course |
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| Course title in Polish | | | |
| Course title in English | Methodology and Organisation of Scientific Research | | |
| Course code | | ECTS credits | 4 |
| Lecturer(s) | Prof. Drobakhin O. Email address: fftkaf@i.ua ; | | |

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| Course objectives (learning outcomes) | This course aims to prepare students for independent creative research and design work, to improving the quality of training and the usage of scientific potential of the university. |
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Prerequisites:

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| Knowledge | Understand basic elements of the organization of scientific researches and realization of the experimental and theoretic investigations. |
| Skills | Independent creative scientific thinking. |
| Courses completed | No requirements. |

Learning effects:

| | Learning effects of of the course | Relation of the learning effects to the specialization |
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| Knowledge | W01 Fully appreciate the nature of scientific investigation. W02 Know and identify the various methods of acquiring, validating knowledge; W03 Identify types and sources of data for scientific research in general and in defence and security issues in particular; W04 List topics on which scientific research can be conducted in the broad area of defence and security; W05 Appreciate problems in conducting scientific research in general and in defence and security studies in particular; W06 Understand basic elements of the language of scientific research. | K_W01 – K_W10 |

| | Learning effects of the course | Relation of the learning effects to the specialization |
|--------|---|--|
| Skills | U01 Use methodology of scientific researches. U02 Analyze empirical and theoretic data. U03 Form hypotheses, conclusions and develop proposals on research results. U04 Work with resources of scientific information U05 Discuss the research results and organize their implementation. U06 Prepare a scientific report. | K_U01 – K_U07 |

| | Learning effects of the course | Relation of the learning effects to the specialization |
|--|--|--|
| | K01. A student has the creativity and the ability to conceptual thinking. K02 A student is able to present and justify the personal point of view. K03 A student is able to use the information technologies for the communication with the scientific community. K04 A student is aimed to expand personal knowledge and skills. K05 A student has the legal erudition. K06 A student concerned about the environmental safety of physical experiment. | K_K01 – K_K06 |

Course organization:

| Form of classes | Lecture (W) | Group-exercises | | | | | | | | | | | |
|-----------------|-----------------------------|--------------------|--|--------------------|--|---------|--|----------------|--|--------------------|--|---------------------------|--|
| | | A (large group) | | K (small group) | | L (Lab) | | S (Seminar) | | P (Project) | | TEST | |
| Contact hours | 14 | | | 14 | | | | | | | | Credit with a grade | |
| Semester | 2 | | | | | | | | | | | | |
| Language | Ukrainian, Russian, English | | | | | | | | | | | | |

Teaching methods:

Classes will be performed in tutorial system on a weekly basis using multimedia presentation and internet in a form of the lectures open for discussion and questions.
 In-class exercises are designed to probe knowledge developed through this process, with emphasis on how well students have understood the underlying mathematical and physical ideas.
 The students will prepare one individual presentation.

Assessment methods:

| | E – learning | Didactic games | Classes in schools | Field classes | Laboratory tasks | Individual project | Group project | Discussion participation | Student's presentation | written assignment (essay) | Oral exam | Written exam | Test |
|-----|--------------|----------------|--------------------|---------------|------------------|--------------------|---------------|--------------------------|------------------------|----------------------------|-----------|--------------|------|
| W01 | | | | | | | | x | | | | | x |
| W02 | | | | | | | | x | | | | | x |
| W03 | | | | | | | | x | | | | | x |
| W04 | | | | | | | | x | x | | | | x |
| W05 | | | | | | | | x | | | | | x |
| W06 | | | | | | | | x | | | | | x |
| U01 | | | | | | | x | x | | | | | x |

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|-----|--|--|--|--|--|---|---|---|---|--|--|--|---|
| U02 | | | | | | | X | X | | | | | X |
| U03 | | | | | | | X | X | | | | | X |
| U04 | | | | | | | X | X | | | | | X |
| U05 | | | | | | | X | X | | | | | X |
| U06 | | | | | | | X | X | | | | | X |
| K01 | | | | | | X | | X | X | | | | X |
| K02 | | | | | | | X | X | | | | | X |
| K03 | | | | | | | X | X | X | | | | X |
| K04 | | | | | | X | X | X | | | | | X |
| K05 | | | | | | | X | X | | | | | X |
| K06 | | | | | | | X | X | | | | | X |

Assessment criteria:

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| Grades | <p>The grading scale will be as follows:</p> <p>90 – 100 % - A including A- excellent (eq. in Ukraine: відмінно (very good))</p> <p>82–89 % : B including B – very good (eq. in Ukraine: добре (good))</p> <p>74–81 %: C including C – good (eq. in Ukraine: добре (good))</p> <p>64–73 %: D including D – satisfactory (eq. in Ukraine: задовільно (satisfactory))</p> <p>60–63 %: E including E – acceptable (eq. in Ukraine: задовільно (satisfactory))</p> <p>< 59 %: F failed (eq. in Ukraine: незадовільно (unsatisfactory))</p> |
| Criteria | <p>A. A student knows all terms and concepts mentioned in W1-W4, U1- U4 and K1-K4. A student can work without any assistances, his/her knowledge's are creative and easily applied to decision of specific problem.</p> <p>B. A student knows all terms and concepts mentioned in W1-W4, U1- U4 and K1-K4, yet needs a little help when decision of specific problem.</p> <p>C. A student knows all terms and concepts mentioned in W1-W4, U1- U4 and K1-K4, however needs a help when decision of specific problem.</p> <p>D. A student knows the most of terms and concepts mentioned in W1-W4, U1- U4 and K1-K4 and has difficulty in decision of specific problem.</p> <p>E. A student knows only several terms and concepts mentioned in W1-W4, U1- U4 and K1-K4 and can solve only a simple problem.</p> <p>F. A student does not know most of terms and concepts mentioned in W1-W4, he/she did not reach the satisfactory level of knowledge this course.</p> |

Course content (topic list):

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| Topics | <p>W1. Science and Scientific Research</p> <p>W2. Thinking Like a Researcher</p> <p>W3. Theories in Scientific Research</p> <p>W4. Research Design</p> <p>W5. Measurement of Constructs</p> <p>W6. Scale Reliability and Validity</p> <p>W7. Survey Research</p> <p>W8. Experimental Research</p> <p>W9. Interpretive Research</p> <p>W10. Qualitative Analysis</p> <p>W11. Research Ethics</p> |
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Literature:

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| Compulsory reading | 1. Крушельницька О.В. Методологія та організація наукових досліджень: Навч. посібник / О.В. Крушельницька. - К.: Кондор, 2003. - 192 с. 2. П'ятницька-Позднякова І.С. Основи наукових досліджень у вищій школі: Навч. посібник / І.С. П'ятницька-Позднякова. - К., 2003. - 116 с. |
| Recommended reading | Beins, Bernard. Research methods and statistics / Bernard C. Beins, Maureen A. McCarthy. |

Estimation of the total working time of students:

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| Contact hours | Lectures | 28 |
| | Seminars | |
| | Other (consultation, meetings) | 22 |
| Students' work hours (without the lecturer) | Reading books and preparation for the lectures | 15 |
| | Preparation to the seminar | |
| | Preparation of an individual presentation | 20 |
| | Preparation to the test | 15 |
| Total works' hours | | 100 |
| ECTS credits 1 ECTS = 25 h | | 4 |