**THE TEACHING PRACTICE**

**1 GENERAL CHARACTERISTICS OF THE TEACHING PRACTICE**

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| 1. Prerequisites | History of science  Methodology of research |
| 2. Corequisites | - |
| 3. Postrequisites | Final state certification |
| 4. Work input of the discipline module, credits | 3 |

**1.1. Key objectives of the post-graduate students` pedagogical practice,**

* to study the fundamentals of teaching and guiding in higher educational institutions,
* to develop practical skills in the professional and teaching activities,
* to enhance the motivation for teaching in higher education institutions,
* to familiarise postgraduate students with the specifics of the teacher’s activities in information security,
* to generate skills in the performance of pedagogical functions,
* to reinforce the psychological and pedagogical knowledge in teaching the disciplines in information security,
* to acquire creative approach skills for solving scientific and teaching problems.

The teaching practice is aimed at generating the competencies for postgraduate students as follows,

* the ability to critically analyse and evaluate current scientific achievements, generate new ideas in solving research and practical problems, also in inter-disciplinary areas (Universal Competence-1);
* readiness to participate in the work of Russian and international research teams for solving research and academic problems (Universal Competence-3);
* readiness to apply contemporary scientific communication methods and technologies in the official and foreign languages (Universal Competence-4);
* the ability to address the challenges of their own professional and personal development (Universal Competence-5);
* readiness to start the teaching activity in the main educational programmes of the higher education (General Professional Competence–2);
* the ability and readiness to start the teaching activity in the field of the vocational training in higher educational institutions, additional professional education and in professional educational organizations (Professional Competence-7);
* the ability to carry out educational programmes and development teaching and guiding materials (Professional Competence-8)

**1.2. Practice effect requirements**

By the end of the teaching practice, postgraduate students should acquire:

* the pedagogical experience in a higher educational institution,
* a full picture of the teaching activities, pedagogical systems and the higher education structure;
* the steady skills of practical application of professional and pedagogical knowledge obtained in the course of the theoretical education;
* the professional pedagogical orientation;
* the information about real problems and problems solved in the educational process of the institutions of higher professional education;
* the personal and professional qualities of the teacher.

By the end of the teaching practice, postgraduate students should **know**

* the teaching methods, techniques and technologies in higher education;
* the major achievements and trends in the development of the relevant subject and research field and its relationship with other sciences;
* the legal and regulatory fundamentals for the education system’s functioning;
* the procedure for implementation of the main provisions and requirements of the documents regulating the activities of the university, department and teaching staff for the improvement of educational, methodological and scientific work to meet the Federal State Education Standards;
* modern approaches to modelling the scientific and teaching activities;
* the basics of teaching and methodological work in higher education;
* the procedure for organising, planning, carrying out and conducting the educational process using the latest teaching technologies;
* the fundamentals of the pedagogical culture and skills;
* the basic principles, methods and forms of organization of the educational process at the university;
* methods of control and evaluation of the students` professionally significant qualities;

**be able**

* to apply methods and techniques for drawing up lecture plans, assignments, exercises, tests on various topics, the systematics of teaching and educational tasks;
* to use training technologies, methods and techniques for conducting lectures and practical classes;
* in the presentation of the subject material to use inter-relationships of the disciplines presented in the curriculum mastered by students;
* in the presentation of the subject material to use the relationship between research and educational processes in higher education including the possibility of attracting own research as a means of improving the educational process;
* to use the major computer technology and information technology in the teaching process;
* to carry out methodical work on the planning and organisation of the educational process;
* to speak in front of the audience and promote a creative atmosphere in the classroom;
* to analyse the difficulties arising in the teaching activities and develop an action plan for resolving them;

**have the skills of:**

* the techniques for the use of technical teaching aids in conducting the academic disciplines classes;
* the speech techniques, rules of conduct in holding training sessions;
* the methodology and technology of training sessions (lectures, seminars, practical classes, laboratory classes, consultations on a discipline, course design, checking various kinds of homework assignments and conducting intermediate appraisal by points);
* the methodology of self-evaluation and self-analysis of the results and effectiveness of conducting in-class learning of various kinds.

**1.3. Teaching practice premises**

The teaching practice premises are the Federal State Institution of Higher Professional Education Ural Federal University named after the first President of Russia B. N. Yeltsin. The organiser of the teaching practicum is the Department of Algebra and Discrete Mathematics which is in charge of postgraduate student training as per 01.06.01 of Mathematics and Mechanics and 01.01.09 Discrete Mathematics and Mathematical Cybernetics.

If necessary, a postgraduate student can do the teaching practice in other departments focusing on similar subjects, especially in the case of the coincidence of the scientific interests of the department and the research work subjects of the postgraduate student.

During the practice period, a post-graduate student follows all the internal regulations and safety rules established at the departments and other departments of the university in relation to the educational process.

The general guidance for the teaching practice and methodological advice are provided by the research advisor and/or the practice supervisor.

**1.4. Duties of the Practice Supervisor**

The duties of the practice supervisor include:

* ensuring that all arrangements are carried out before a postgraduate student is assigned to practice;
* drawing up an individual practice plan for the postgraduate student and coordinating it with the practice leader from the entity;
* organisation of work of the postgraduate student according to the pedagogical practice programme;
* preparation of individual assignments for the practice;
* providing the postgraduate student with the necessary regulatory documents, form sheet material, reference literature etc.;
* conducting consultations at a set time;
* hearing the postgraduate student’s practice report;
* providing the head of the department with the practice review including proposals and comments on improving the postgraduate students` practical training.

**2. TEACHING PRACTICE CONTENTS**

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| **Section code** | **Practice section** | **Contents** |
| Р1 | Organisational and methodological aspects of the teaching practice | Attending and reviewing the classes of leading professors and associate professors of departments.  Attending scientific and methodological consultations.  Drawing up an individual teaching practice plan.  Development of a work programme for the academic discipline (the choice of the discipline is coordinated with the research supervisor).  Materials are chosen for lectures, construction of seminars, practical and laboratory exercises.  Self-studying the pedagogical literature of higher education; studying methods of preparing and conducting lectures, laboratory and practical exercises, seminars, consultations, tests, examinations, term and diploma design; mastering innovative educational technologies;  Studying the existing computer training programmes, the possibilities of technical teaching aids etc. |
| Р2 | Active teaching practice | Conducting training sessions in students groups included in the load grid of the UrFU departments. |
| РЗ | Teaching research work | Design and conduct of lectures, practical and laboratory classes by using innovative educational technologies.  Development of multimedia systems for information security disciplines.  Design of inter-disciplinary modules for studying the most complex and professionally significant concepts.  Development of tests, exam tasks, subjects of the term and diploma projects.  Working out didactic materials on selected topics of the training courses and their presentation.  Development of scenarios for conducting business games, teleconferences and other innovative forms of classes.  A comparative analysis of various methods for assessing the quality of educational and cognitive activities of students in the study of academic disciplines.  Optimisation of educational and cognitive activities and improving the training quality.  Carrying out psychological and pedagogical researches to diagnose professionally and personally significant qualities of a student (teacher) and the analysis of his/her results.  Analysis of the domestic and foreign practices of higher education specialist training in the field of information security. |

The content of the teaching practice of a postgraduate student is determined taking into account the interests and possibilities of the department where it is conducted, and is completely determined by the individual task. The individual task is developed taking into account the area of the postgraduate training programme and taking into account the subjects of the research work of the postgraduate student.

**3. DISTRIBUTION OF THE LABOUR INTENSITY IN MASTERING THE DISCIPLINE BY SECTIONS AND CONTROL ACTIVITIES**

(Full-time study)

Learning semester 3 Scope of discipline (credits) 3

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| Discipline section | | | In-class load  (hours) | | | | Type, quantity and volumes of activities | | | | | | | | | | | | | | | | | | | | |
| Code of section, topic | Name of section, topic | Total of section, topic (hours) | Total | Lectures | Practical exercises | Laboratory-based work | Preparation for in-class learning (hours) | | | | | Total (hours) | Performing independent extracurricular activities (quantity) | | | | | | | | | Total (hours) | Preparation for the control qualification activities (quantity) | | | | |
| Total | Lectures | Pract. seminar classes | Laboratory-based work | Research seminars, conference seminars and colloquiums | Homework\* | Graphical work\* | Research paper, essay, creative work\* | Individual or group project\* | Translation of foreign literature\* j | Calculation wok, programme development\* | Calculation and graphical work\* | Term paper/ multi-disciplinary term work\* | Term paper/ multi-disciplinary term project\* | Review work (test)\* | Colloquium\* | Credit/test\* (given there is an exam) | Credit/test\* (graded given there is no exam) | Exam\* |
| P1 | Organisational and methodical aspects of the teaching practice | 20 |  |  |  |  | 10 | 10 |  |  | 10 | 10 |  |  |  |  |  |  |  |  |  |  |  |  | 4 | | |
| P2 | Active teaching practice | 54 | 54 | 54 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P3 | Teacher research work | 30 |  |  |  |  | 10 | 10 |  |  | 20 | 20 |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Discipline, total (hours)** | 108 | 104 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4 | | |

**4. Self-guided work of postgraduate** **students**

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| List of tasks for the self-guided work | Work intensity | |
| hours | credits |
| Drawing up a teaching practice plan | 4 |  |
| Development of the draft work programme for the academic discipline in respect of a certain term | 4 |  |
| Selection of the educational, scientific, journalistic literature for drawing up a compendium of lectures | 4 |  |
| Study of the educational and scientific pedagogical literature | 4 |  |
| Studying innovative educational technologies | 4 |  |
| Total | 20 | 0.5 |
| Compilation of compendium of lectures | 6 |  |
| Development of methodological recommendations for conducting seminars, practical or laboratory classes. The selection of methods for assessing the knowledge of students | 6 |  |
| Execution of a handout or presentation to a lecture | 6 |  |
| Development of test assignments, tasks, exercises and business game scenarios for conducting seminars | 6 |  |
| Preparation for the report on the teaching practice | 6 |  |
| Total | 30 | 1.0 |

**5. Reporting on the teaching practice outcomes**

A Ph.D. postgraduate student based on the teaching practice is assessed by the department at which he/she did the practice based on the presentation of the feedback from the practice leader. The main basis for attestation is the successful conduct of the postgraduate study sessions in the groups of students included in the load grid of the UrFU departments.

**5.1. Databases, information and reference systems and search systems**

1. The official Internet portal of legal information. – Available at http://pravo.gov.ru/, free. - Title from the screen.
2. The portal of information and educational resources of the UrFU. - Available at http://study.urfti.ru/info/, free. - Title from the screen.
3. The electronic base of regulatory documents GOSTEKSPERT. - Available at http://gostexpert.ru/, free. - Title from the screen.
4. Search engines; www.yandex.rn, google.ru www.rambler.ru,