


**MINISTRY OF EDUCATION AND SCIENCE
OF THE RUSSIAN FEDERATION ST. PETERSBURG STATE
ELECTROTECHNICAL UNIVERSITY «LETI»
OF V. I. ULYANOV (LENIN)»**

Approved by
Vice Rector for Academic Affairs
Pavlov V.N.
« *В.Н. Павлов* » 2016



WORKING PROGRAM

discipline

«FIELD EXPERIENCE (R & D)»

Field of Study:

09.04.01 – «Computer science and engineering»

Master's Program:

«Computer science and knowledge discovery»

(in English)

Saint – Petersburg
2016

FIELD EXPERIENCE STRUCTURE

Curriculum №:	500
Providing faculty:	FKTI
Providing department:	VT

Total workload (credit points)	19
Year of study	1,2
Term	2,3

Classes types

Individual work (academic hours)	684
Total (academic hours)	684

Intermediate attestation type

Graded test (term)	2,3
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Practice type: R&D.

Practice format: onsite, field.

Practice mode: discrete.

The working program is discussed at meeting of chair of Computer Science and Engineering 22.03.2016, the protocol № 2.

The working program is approved by the educational and methodical Commission of the Faculty of Computer Science and Technology 24.03.2016, the protocol № 3.

SUMMARY

FIELD EXPERIENCE (R & D)

As a result of the passage of field experience the student must meet with the planning processes, the preparation, organization and execution of the research work, as well as methods of processing the results. During the passage of field experience, students learn to formulate scientific problem, review and comparison of the methods of its solution. One result of the field experience should be well-designed reports on the results of scientific research.

FIELD EXPERIENCE PURPOSES AND TASKS

1. Studying of modern mathematical methods, computing systems, programming framework and software basics for solution of science, technology, economics and management problems and usage of distributed information technologies in engineering, management and financial activities. Acquisition of the required knowledge for applied and scientific problems solution formulated on the graduation thesis topic.

2. Skills development for work with various software and computing platforms including distributed and high-performance ones and choice of methods for solving production problems in specific situations.

3. Mastering of methods for solving various kinds of production problems through the use of parallel and distributed computing tools. Ability to participate in the development of informational systems of various purpose and type, especially distributed and intelligent ones.

Competency set developing during field experience is listed in the competency matrix, appended to Basic Educational Program.

FIELD EXPERIENCE PLACE IN BASIC EDUCATIONAL PROGRAM STRUCTURE

The field experience (R&D) is carried out based on the knowledge and skills obtained as a result of previously mastered curriculum disciplines:

1. Computational systems;
2. Intelligent systems;
3. Algorithm design and optimization;
4. Digital signal processing

and provides study of the following disciplines:

1. Advanced mathematical methods;
2. Information security.

also, it is aimed to reinforce mastered professional knowledge and skills of self-conducted scientific-research, engineering and managerial work during educational process.

FIELD EXPERIENCE CONTENT

Field experience main goal is an expansion of professional knowledge acquired by masters during educational process and development of self-conducted scientific-research and managerial work skills.

Field experience (R&D) is aimed to work skill acquisition with various software products and computing systems and choosing methods for solving production problems in specific situations; acquaintance of students with various programming languages; development of skills and abilities for self-conducted research and various kinds of problems solution through the use of programming tools in conjunction with other types of software; improvement and reinforcement of students theoretical knowledge concerning computer technology basics; development of future masters skills and abilities allowing them to use modern mathematical methods and tools for solution of science, technology, economics and management problems and usage of distributed information technologies in engineering, management and financial activities; corporate culture cultivation; development of creative thinking, passion to self-education and necessity of constant profession skills self-improvement in the field of applied mathematics and informatics; study of the information technologies present state in various institutions and firms, best experiences and innovative approaches.

Field experience is held on the basis of contract relations in external companies (factories, firms) in respect with the field of study program or graduating departments and other university scientific subdivisions. Workspace for field experience individual work is organized in subdivisions.

Field experience content is determined by graduating departments on the basis of federal higher educational standard with consideration of subdivisions (bureaus, laboratories, scientific groups, etc.) interests and capabilities where the one is held. Student's work content is specified during field experience by subdivision's head-office and is reflected in the individual field experience work.

Field experience timeframes and duration are settled in accordance with curricula and annual academic schedule. During field experience students obey all in-

ternal rules of conduct and safety instructions, active in a subdivision and at the workplace.

FIELD EXPERIENCE REPORT FORMAT

Main field experience reporting formats are written report, presentation and oral report.

In accordance with the template approved by ETU "LETI" the written report must be prepared by the student to the end of field experience. The written report includes problem results with solutions description and presentation of obtained experimental and estimated data.

Field experience supervisor gives reference on the students work and approves written report with further report submission to the head of field experience from graduating department.

Attestation of practice results is held by the committee appointed by the head of department. The committee must include practice supervisor of department and at least two department professors.

Attestation is held on student's oral report based on the practice results, practice supervisor reference and presentation.

Attestation results is assessed by five-point grading scale (graded test)

ACADEMIC AND METHODOLOGIC PRACTICE PROVISION

Practice related list of the basic and additional study literature

№	Title, bibliographical entry	Term	Items num. in library (at dpt.)
Basic literature			
1	Perfomance and execution of final qualifying works [Electronic resource]: St. Petersburg State Electrotechnical University "LETI"; auth.: V.B. Viktorov, A.A. Lyamkin. - 2 nd ed., revised — Spb.: Publ. St. Petersburg State Electrotechnical University "LETI", 2013 (CD-ROM).	2	The e-Learning Resource Base of Electronic Informational and Educational Environment of St. Petersburg Electrotechnical University "LETI"
2	Y.N. Novikov Preparation and defence of master`s theses and undergraduate works [textbook]. 3d ed. Spb; M.; Krasnodar: Lan`, 2015.-29 p.	2	48
Additional literature			
1	A.L. Foote Oral Exams: Preparing For and Passing Candidacy, Qualifying, and Graduate Defenses. Academic Press;2015.-204 p.	2	Het(1)

The head of the study literature department



T.V. Kiseleva
05.12.18

APPROVAL FORM

Developer

PhD, Ass. Prof.

D.M. Klionskiy

Reviewer

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Dean of the faculty

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RECORD OF REVISIONS

№	Date	Change	Meeting date of the Academic and Methodical Council, Protocol №	Author	Head of methodical department
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