Annex to order No. 126
of February 02, 2016

Federal state autonomous educational institution of higher education
"Peter the Great St. Petersburg Polytechnic University"

Approved by SPbPU Academic
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EDUCATIONAL POLICY
IN MANAGEMENT AND IMPLEMENTATION OF HIGHER EDUCATION STUDY PROGRAMMES MODELS

(Order of March 21, 2016, No. 395)

St. Petersburg

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CONTENTS

1. SCOPE OF APPLICATION

1.1. This Educational Policy in management and implementation of higher education study programmes models - bachelor's (specialist’s) programmes, master's programmes and post-graduate training (hereinafter - Educational Policy) applies to study programmes of higher education at Peter the Great St. Petersburg Polytechnic University (hereinafter - University, SPbPU) in all areas of training in bachelor's (specialist’s), master's and post-graduate course and to all forms of learning.

1.2. The educational policy determines the strategic goals of the University and the main mechanisms for the achievement of these goals.

1.3. Amendments to the educational policy are made by the decision of the Academic Council of the University on the proposal of the vice-rector for academic affairs.

2. NORMATIVE REFERENCES

This Educational Policy is based on the following documents:

2.1. Federal Law of December 29, 2012 No. 273-FZ «On Education in the Russian Federation»;

2.2. Decree of the Government of the Russian Federation of May 23, 2015 No. 497 «On approval of the federal target programme for the development of education for 2016 - 2020»;

2.3. Federal state educational standards of higher education / educational standards established by SPbPU;

2.4. Professional standards;

2.5. Charter of the Federal State Autonomous Educational Institution of Higher Education «Peter the Great St. Petersburg Polytechnic University»;

2.6. Development Programme of the Federal State Autonomous Educational Institution of Higher Education «Peter the Great St. Petersburg Polytechnic University» for 2011 - 2020;

2.10. Plan («road map») for the implementation of the programme to improve competitiveness of the Federal State Autonomous Educational Institution of Higher Education «Peter the Great St. Petersburg Polytechnic University» for 2013 - 2020.

3. TERMS AND DEFINITIONS

The following basic concepts, terms and definitions are applied in the framework of this Education Policy:

SEES is a self-established educational standard of SPbPU

The basic study programme (BSP) is a set of educational characteristics (volume of the programme, its content and planned results), learning conditions and forms of certification, which is presented in the form of a curriculum, syllabi of disciplines (modules), internship programmes, assessment tools, teaching materials and other components included in the study programme by the decision of the educational organization.

The academic supervisor of the study programme (hereinafter - the Supervisor of the SP) is a member of the academic staff, who is appointed to this position in accordance with the requirements established by the FSES or the SEES, and supervises more than one study programme of one or more levels of higher education within one or more areas of training.

The results of mastering the study programme are the competencies that the students developed in the course of learning.

Learning outcomes (LE) are the specific results of mastering individual disciplines (modules) and other SP elements in terms of knowledge, skills, and experience acquired by students. The learning outcomes for SP are reflected in the syllabi of disciplines, internships, etc.

The module of the study programme is a relatively independent and coherent part of the study programme, ensuring that the specified learning outcomes are achieved.

The module is used as an independent term and can be synonymous with:

a discipline (a set of parts of an academic discipline);

a number of disciplines (a set of academic disciplines).

The mobility module is a «bundle» of non-core disciplines that complements the educational trajectory of a student at the university.

Project activity of students is students' involvement in solving practical or theoretical problems within the framework of learning, internship or research.

4. PURPOSE AND GOALS OF UPGRADING THE MODELS OF HIGHER EDUCATION STUDY PROGRAMMES

4.1. The purpose of developing new models for bachelor's (specialist's), master's, and post-graduate programmes is to achieve excellence in the content of study programmes and educational technologies by optimizing the educational process in order to achieve the best balance between the competitiveness of educational programmes and the costs of SPbPU for their implementation, and to ensure the cooperation of various departments of the university (scientific, personnel, etc.) with the main employers (e.g. through the base departments) for the advanced development of study programmes.

4.2. To achieve this goal, this educational policy sets the following tasks:

4.2.1. to ensure high market / consumer demand for new educational programmes and their compliance with the changing requirements of employers and requests of students;

4.2.2. to change the organizational structure of study programmes management;

4.2.3. to introduce a modular structure of bachelor's / specialist's / master's programmes;

4.2.4. to develop individual educational trajectories and increase the level of students' responsibility for their learning outcomes;

4.2.5. to develop successive bachelor's (specialist's), master's, postgraduate study programmes;

4.2.6. to enlarge and upgrade study programmes and increase the level of their variability (Annex 1);

4.2.7. to design unified modules for widespread use within various study programmes, to develop the tools for determining the requirements for unified modules based on the collegial decision and continuous improvement of the quality of their

implementation;

4.2.8. to develop a mobility module, which ensures the expansion of educational opportunities for students and the acquisition of knowledge other than in the main area of training;

4.2.9. to expand project activities of students by involving employers, scientific and innovative departments of the University in educational projects;

4.2.10. to increase the role of students' independent work;

4.2.11. to enlarge research activities in educational programmes;

4.2.12. to expand educational opportunities through the use of open access courses;

4.2.13. to increase the number of the University's study programmes in a foreign language, and to involve more students in mastering the modules of the study programme in a foreign language in order to develop language competencies of students;

4.2.14. to ensure widespread use of educational technologies, to increase the efficiency of learning through the active use of the electronic information educational environment by the students and lecturers;

4.2.15. to provide the objective and regular quality assessment of the learning outcomes, ensuring the transparency of information on the development of study programmes.

4.3. The expected results of upgrading the educational process and the implementation of new educational models are the following:

4.3.1. development and implementation of new study programmes that meet the changing requirements of employers and requests of students**;**

4.3.2. increase in the average USE score of applicants;

4.3.3. increase in the number of master's students and postgraduate students in the total number of students, including those coming from other universities;

4.3.4. enrollment of students with the subsequent choice of an individual learning path;

4.3.5. motivation for high learning outcomes through expanding educational opportunities for the best students;

4.3.6. involving more employers, researchers, young lecturers and guest lecturers in

educational process;

4.3.7. increase in the number of classes with the use of active learning methods, e-learning and research projects;

4.3.8. increase in the number of study programmes that involve network interaction with leading Russian and foreign universities, as well as an increase in the number of students mastering individual modules of study programmes within the framework of network interaction;

4.3.9. expanding the interaction of the University with partner organizations in order to update the study programmes and strengthen the practice-oriented component of learning.

4.4. Improving the educational process involves the following tasks:

4.4.1. optimization of the structure of bachelor's and master's programmes;

4.4.2. steady convergence of related study programmes / areas of training for optimizing the use of SPbPU resources.

4.5. The new model of the study programme is designed to ensure:

4.5.1. implementation of bachelor's / specialist’s / master's programmes based on self-established educational standards of SPbPU;

4.5.2. inclusion of the project module in the study programme, within the framework of study disciplines and internships;

4.5.3. transition to modular technology for bachelor's / specialist's / master's programmes on the basis of the self-established educational standards of SPbPU;

4.5.4. individualization of learning trajectories of students through elective disciplines (modules) and the development of academic mobility in the educational process;

4.5.5. reduction of the classroom hours of students while increasing the efficiency of independent work of students through the introduction of new forms of its organization (use of online courses, etc.);

4.5.6. learning a foreign language as part of bachelor's / specialist’s programmes, with the subsequent expansion of the range of disciplines taught in a foreign language and / or acceptance of recommended online courses in a foreign language;

4.5.7. introduction of disciplines and forms of training into curricula that encourage obtaining professional certificates recognized in the labour market.

5. STUDY PROGRAMME MANAGEMENT

5.1. To achieve the goals of the educational policy of the University in the field of educational management, the following requirements must be satisfied:

5.1.1. management is carried out at the level of the Institute through the proposed set of study programmes that are unique and significant in terms of contribution to the development of the University and demand in the labour market;

5.1.2. organization and control of the educational process in accordance with the study programme are assigned to the supervisor of the SP, who is appointed and dismissed by the order of the rector (vice-rector) on the proposal of the director of the institute and with the agreement of the vice-rector for educational activities;

5.1.3. the implementation of study programmes is managed by the director of the institute (deputy director of the institute for educational activities) who acts as a superior manager for the supervisors of SPs;

5.1.4. transparency of information about the study programme is ensured by the supervisor of the SP for all interested parties (students, lecturers and heads of structural divisions of the University, employers, authorities).

5.2. The main tasks, duties, rights and responsibilities of the supervisor of the SPs are determined by the job description.

5.3. The supervisors of the SPs are members of the Institute directorate of study programmes, which is headed by the deputy director for educational activities.

5.4. The coordination and control of educational activities for the implementation of SPs are carried out by the Joint Directorate of SPs, which is managed by the Head of the Directorate of Basic study programmes of SPbPU.

5.5. If necessary, a methodological commission can be established by the decision of the institute, to make collegial decisions on the development of the study programme.

5.6. The main expected results of the efficient SP management are the following:

5.6.1. development of successive bachelor's (specialist’s), master's and postgraduate programmes that are demanded by employers and focused on advanced production technologies;

5.6.2. development of the personnel potential, e.g. by involving young highly skilled professionals in the educational process management;

5.6.3. providing more opportunities for students to build individual educational trajectories;

5.6.4. increasing the competitiveness of the University and the demand for graduates in the labour market.

6. THE STRUCTURE OF THE BACHELOR’S/ SPECIALIST’S PROGRAMME MODEL

6.1.The content of the Bachelor’s study programme amounts to 240 credits, specialist’s programme amounts to 300/330/360 credits.

1 credit corresponds to 36 academic hours (academic hour is equal 45 minutes).

6.2. The Bachelor’s/specialist’s study programme consists of *discipline modules and the module of the State Final Assessment.*

6.3. The study programme can include *optional modules* which are not included into the basic study programme.

6.4. The Bachelor’s/specialist’s study programme consists of the following discipline modules:

6.4.1. **Compulsory unified discipline modules (Fundamentals)** for all the majors/ specialities which aim to develop universal, core professional and compulsory professional (if available) competencies. Compulsory unified discipline modules include the following:

а) ***general educational module***;

б) «***physical education***» module;

в) ***fundamental module***;

г) ***foreign language module.***

6.4.2. **Professional modules** which aim to develop universal, core professional and professional (if available) competencies, which include the following:

а) ***the core module of the programme***;

б) ***the professional module*** .

6.4.3. ***The mobility module*** represents an educational cycle within the study programme which implies additional educational pathway (minor) for students, except for the major.

6.4.4. ***The module of project activity (Project)*** represents students' independent activity targeted at solving a certain practical or theoretical problem, and implemented within disciplines, traineeships, research work.

6.4.5. ***The module of the "State Final Assessment"*** includes defending a final graduation work and the state qualification exam(s) (if available).

6.4.6. ***Optional disciplines*** which are aimed at the socio-cultural development of students.

*6.5.*The Bachelor's/specialist's study programme consists of the following components:

6.5.1. **Discipline modules**

6.5.1.1. ***General educational module*** includes the following compulsory subjects:

Health and safety;

History;

Philosophy;

Economics (except for the enlarged group of majors coded as 38.00.00);

Humanities component is presented by the subjects: Sociology, Jurisprudence, Psychology, Political science, Russian language and culture of speech, Cultural studies etc.

The scope of the general educational module depends on the group of majors (Annex 1)

6.5.1.2. ***«Physical education» module:***

Physical education (2 credits in the general part);

Optional physical education and sport in the amount of 328 academic hours (compulsory and are not transferable into credits).

6.5.1.3. ***Fundamental module*** is structured according to groups of majors (Annexes 1,2); it includes the **compulsory** components:

Mathematics module;

Physics module for physical, mathematical and engineering majors;

Natural science module – for majors in Humanities, Economics and IT;

Information technology module (except for respective majors).

6.5.1.4. ***Foreign language module*** includes general language learning and language for specific purposes.

6.5.1.5. ***The core module of the programme*** implies a set of disciplines (modules) that develop knowledge, skills and experience in the field of study.

6.5.1.6. ***The professional module*** determines a profile of education.

6.5.2. ***The mobility module*** represents an educational cycle within a study programme which implies an additional educational pathway for students beyond their major. It refers to an elective part of the study programme and is implemented as a selection of certain disciplines by students.

6.5.3. ***The module of project activity*****.** This module is targeted at the use of knowledge, skills and experience, acquired during education, to set goals and solve practical tasks, which require students' teamwork, including inter-institute cooperation.

6.5.4. **The module** ***of the "State Final Assessment"*** **(SFA).** It includes defending a final graduation work and the state qualification exam(s) (if available). Designing the basic educational programme, the state qualification exam preparation and taking provides for 3 credits, preparation of a final graduation work covers 6-9 credits, presentation of a final graduation work takes 3 credits.

6.5.5. Additionally, the study programme can involve optional disciplines. Among such disciplines, which are offered to students, there are "Artistic semesters"; training for the IELTS international exam etc. A number of optional courses is not specified.

6.6. Peculiarities of structuring the bachelor's/ specialist's study programmes are shown in Annex 2.

7. THE STRUCTURE OF THE MASTER'S PROGRAMME MODEL

7.1. The content of the Master's study programme amounts to 120 credits.

1credit corresponds to 36 academic hours (academic hour is equal 45 minutes).

7.2.The Master's study programme consists of *discipline modules and the module of the State Final Assessment.*

7.3.The Master's programme consists of the following discipline modules:

7.3.1. ***The general scientific module*** **(Fundamentals)** for all majors which aim to develop universal, core professional and compulsory professional (if available) competencies.

7.3.2. **Professional modules** imply developing universal, core professional and compulsory professional competencies; these modules include:

а) ***the core module of the programme***;

б) ***the professional module***.

7.3.3. ***The mobility module*** represents an educational cycle within the study programme which implies additional educational pathway (minor) for students by the major they are enrolled in.

7.3.4. ***The module of project activity (*****Project)** represents students' independent activity targeted at solving a certain practical or theoretical problem, and implemented within disciplines, traineeships, research work.

7.3.5. ***The module of the "State Final Assessment"*** includes defending a final graduation work and the state qualification exam(s) (if available).

7.3.6. ***Optional courses*** which are aimed at the socio-cultural development of students.

*7.4.*The Master's study programme consists of the following components:

7.4.1. **Discipline modules**

7.4.1.1.***The general scientific module*** includes the following **compulsory** disciplines:

History and methodology of science (except for 40.04.01);

Foreign language for professional purposes (except for 45.04.01);

Scientific discourse (except for 40.04.01).

7.4.1.2. ***The core module of the programme*** represents a set of disciplines (modules), which develop knowledge, skills and experience in a field of study.

7.4.1.3. ***The professional module*** determines a profile of education.

7.4.1.4. ***The mobility module*** represents an educational cycle within a study programme which implies an additional educational pathway for students beyond their major. It refers to an elective part of the study programme and is implemented as a selection of certain disciplines by students.

7.4.2. **The module of project activity.** This module is targeted at the use of knowledge, skills and experience, acquired during education, to set goals and solve practical tasks.

7.4.3. **The module *of the "State Final Assessment"* (SFA).** It includes defending a final graduation work and the state exam(s) (if available). Designing the basic educational programme, the state qualification exam preparation and taking provides for 3 credits, completion of a final graduation work covers 6-9 credits, presentation a final graduation work takes 3 credits.

7.4.4. Peculiarities of structuring the Master's study programmes are shown in Annex 3.

8. THE STRUCTURE OF THE POST-GRADUATE MODEL

8.1. The content of the post-graduate programme amounts to 180/240 credits, depending on the standard requirements

1 credit corresponds to 36 academic hours (academic hour is equal 45 minutes).

8.2. The post-graduate study programme consists of *discipline modules, traineeships, research and the state final assessment*.

8.3. The post-graduate programme is comprised of the following elements:

8.3.1. Disciplines (modules) aimed at the preparation for PhD exams in the professional field, for teaching activity, and reflecting the focus of the BSP, are obligatorily included in a curriculum of all majors and profiles.

The core part of the post-graduate programme is compulsory regardless of its profile, it ensures development of competencies stipulated by the educational standards (universal and core professional competencies) in students. The core part involves disciplines (modules) targeted at the preparation for PhD exams, established by the educational standard, - "Foreign language" and "History and philosophy of science".

The elective part of the post-graduate programme aims to expand and (or) to deepen competencies stipulated by the educational standards (universal and (or) core professional competencies); this elective part also aims to develop students' competencies accepted by the institution in addition to the competencies established by the educational standards (professional competencies), and this includes disciplines (modules) targeted at training for PhD exam in a major discipline, for teaching activity, and disciplines reflecting the focus of the post-graduate programme.

8.3.2. Traineeships (the elective part of the programme).

8.3.3. Research (the elective part of the programme).

8.3.4. State Final Assessment (the core part of the programme).

8.3.5. Optional disciplines that are not the basic part of the study programme.

8.4. The post-graduate programme includes the following components:

8.4.1. Disciplines (modules)

8.4.2. Disciplines (modules) (the core part):

Foreign language;

History and philosophy of science.

8.4.3. Disciplines (modules) (the elective part):

The English language in a scientific discourse aims to enhance international competitiveness of post-graduate programmes for top qualification staff training;

Guidelines of conducting PhD research. This discipline is aimed at preparing and writing a research paper (PhD report);

Pedagogy of higher education is targeted at formation and development of teacher's personality in the field of professional education.

Specialty discipline is in accordance with the major section (passport) of Higher Attestation Commission.

Disciplines which reflect the focus of the post-graduate programme.

8.4.4. Traineeships include:

Traineeship for acquiring professional skills and experience: educational;

Traineeship for acquiring professional skills and experience: scientific research.

8.4.5. Research includes:

Research activity and completion of the research qualification work (PhD thesis).

8.4.6. The State Final Assessment – SFA. This involves the following:

State exam training and taking;

Scientific presentation on main results of the research qualification work (PhD thesis).

8.4.7. The study programme can also involve optional disciplines. Among such disciplines, which are offered to post-graduate students, there are “Methods of teaching special disciplines”. A number of optional courses is not specified.

8.4.8. The structure of the post-graduate programme is presented in Annex 4.

Annex 1

Areas of training

Group	Enlarged groups of majors
PHYSICAL AND MATHE-MATICAL GROUP	**01.00.00** Mathematics and mechanics; **03.00.00** Physics and astronomy; **11.00.00** Electronics, radio and communication systems ; 15.03.03 Applied mechanics, 16.03.01 Technical physics
IT GROUP	**02.00.00** Computer and information sciences; **09.00.00** Computer science and engineering; **10.00.00** Information security; **12.00.00** Photonics, instrumentation, optical and biotechnical systems and technonlogies; **27.00.00** Management in technical systems
ENGINEERING GROUP	**07.00.00** Architecture; **08.00.00** Construction engineering and technology; **13.00.00** Electrical and hat power engineering; **14.00.00** Nuclear power engineering and technology; **15.00.0**0 Mechanical engineering (except for 15.03.03 Applied mechanics), **16.00.00** Physical and engineering sciences and technology (except for 16.03.01 Technical physics); **19.00.00** Industrial ecology and biotechnology; **20.00.00** Technosphere safety and environmental engineering; **22.00.00** Materials science and technology; **23.00.00** Land transport engineering and technology; **24.00.00** Aerospace engineering; **28.00.00** Nanotechnologies and materials; **29.00.00** Technologies of light industry
ECONOMICS AND TRADE GROUP	**38.00.00** Economics and management; **43.00.00** Service and tourism
HUMANITIES GROUP	**39.00.00** Sociology and social work; **40.00.00** Jurisprudence; **41.00.00** Political science and region studies; **42.00.00** Mass media and information and library science; **44.00.00** Education and pedagogical sciences; **45.00.00** Language and literature studies; **54.00.00** Visual and applied arts

Annex 2

The structure of the bachelor's / specialist's study programme

Module	Module components	Labour intensity by enlarged groups of majors, in credits.*				
		physical and mathematical group (1)	IT group (2)	engineering group (3)	economics and trade group (4)	humanities group (5)
General educational module	Health and safety	+	+	+	+	+
	History	+	+	+	+	+
	Philosophy	+	+	+	+	+
	Economics	+	+	+	-	+
	Humanities	+	+	+	+	+
Physical education	Physical education	2				
	Optional physical education and sport	328 hours				
Fundamental module	Mathematics module	+	+	+	+	+
	Physics module	+	+	+	-	-
	Natural science module	-	+	-	+	+
		+	-	+	+	+
Foreign language module	Foreign language: general course	7 – 10				
	Foreign language: language for specific purposes Disciplines in a foreign language	8 – 10				
Core module of the programme	Introduction to occupation	2	2	2	2	2

Module	Module components	Labour intensity by enlarged groups of majors, in credits.*				
		physical and mathematical group (1)	IT group (2)	engineering group (3)	economics and trade group (4)	humanities group (5)
	Disciplines of the major	≥20	≥20	≥20	≥20	≥20
Professional module	Profile disciplines	≥30	≥30	≥30	≥30	≥30
Mobility module	Disciplines of the minor	10				
Module of project activity	Fundamentals of project activity	3				
	Disciplines and traineeships	≥20				
State Final Assessment	State exam (if available)	3 – 6 [1]				
	Completion and presentation a final graduation work	6 –9 [1]				
	TOTAL	240/300/330/360[2]				
Optional disciplines	«Artistic semesters»					
	Training for the IELTS exam					
	Military training					
	As proposed by the program supervisor					

*labour intensity is set in the self-established educational standards of SPbPU.

[1] In compliance with the self-established educational standards of SPbPU
[2] 300, 330 or 360 credits in compliance with the self-established educational standards of SPbPU

Annex 3

The structure of the master's programme

Module	Module components	Labour intensity (in credits) *
General scientific module	History and methodology of science (except for 40.04.01)	3
	Foreign language for professional purposes (except for 45.04.01)	4
	Scientific discourse (except for 40.04.01)	3
Core module of the programme	Disciplines of the major	≥9
Module of the profile	Disciplines of the profile	≥20
Mobility module	Disciplines of the minor	≥5
Module of project activity	Disciplines, traineeships; research work (for 40.04.01)	≥30
State Final Assessment	State exam (if available)	3
	Completion and Presentation of the Final Graduation Work	6–9
	Presentation of the Final Graduation Work (for 40.04.01)	3
	TOTAL	120
Optional disciplines	As proposed by the program supervisor	

*labour intensity is set in the self-established educational standards of SPbPU.

Annex 4

The structure of the post-graduate programme

The unit	Components of the unit	Labour intensity (in credits)
Disciplines (modules) designed for training post-graduate students for PhD exams (the core part)	Foreign language	4
	History and philosophy of science	5
	Total	**9**
Discipline / disciplines (module / modules) designed for training post-graduate students for the PhD exam in the professional field, also for teaching. The disciplines (modules) reflect the focus of the post-graduate programme (the elective part)	English in a scientific discourse	5
	Guidelines of conducting PhD research	1
	Pedagogy of Higher Education	2
	Discipline designed for training postgraduate students for the PhD exam in the professional field	4
	Disciplines reflecting the focus of the postgraduate programme	9
	Total	**21**
Traineeship (the elective part)	Traineeship for acquiring professional skills and experience: educational	6
	Traineeship for acquiring professional skills and experience: scientific research	3 – 6
	Total	**9**
Research (the elective part)	Research work and completion of the PhD thesis	129 – 132 (189 – 192)*
State Final Assessment	State Exam training and taking	3
	Scientific presentation on the main results of the PhD thesis	6
	Total	**9**
	TOTAL	**180 (240)***
Optional disciplines	Methods of teaching special disciplines	2
	As proposed by the programme supervisor	

*- Post-graduate programme is in accordance with the requirements of the standard for 240 credit units