Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE LUMUMBA

RUDN University

Academy of Engineering

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Management of Business Operations of Hi-tech Industries

course title

Recommended by the Didactic Council for the Education Field of:

27.04.05 Innovatics

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

Digital transformation in production management

higher education programme profile/specialisation title

2024

1. THE PURPOSE OF MASTERING THE DISCIPLINE

The goals and objectives of the discipline are to gain knowledge, skills and experience in the field of managing the operations of science-intensive industries, characterizing the stages of the formation of competencies and ensuring the achievement of the planned results of mastering the educational program.

2. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

Mastering the discipline is aimed at developing the following competencies (parts of competencies) among students:

Table 2.1 – The list of competencies formed by students in the course of mastering the discipline (the results of mastering the discipline)

A code of a competence	A competence	Indicators of achieving a competence
GPC-4	Able to develop criteria for evaluating management systems in the field of innovation based on modern mathematical methods, develop and implement management decisions to improve their effectiveness	GPC-4.1. develops criteria for evaluating the effectiveness of innovation management
GPC-7	Able to select reasonably and justify structural, algorithmic, technological and software solutions for managing innovative processes and projects; put them into practice in enterprise innovative systems, industrial and regional innovative systems	GPC-7.1. shows knowledge of technological and software solutions for managing innovation processes
PC-2	Able to find (choose) optimal solutions when creating new science-intensive products, considering the requirements of quality, cost, deadlines, competitiveness and environmental safety	GPC-2.1 shows the knowledge of assessing the quality, cost and competitiveness of an innovative product or service
PC-3	Able to develop a plan and program for organizing innovative activities of a research and production unit, to carry out a feasibility study of innovative projects and programs	PC-3.2 develops a plan and program for organizing innovation activities

3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF OP VO

The discipline refers to the mandatory part of the OP VO.

Within the higher education programme students also master other disciplines and internships that contribute to the achievement of the expected learning outcomes as results of the subject mastery.

Table 3.1 – The list of components of the OP VO that contribute to the achievement of the planned results of the development of the discipline

Competency code	Name of competence	Previous disciplines, practices	Subsequent disciplines, practices
GPC-4	Able to develop criteria for evaluating management systems in the field of innovation based on modern mathematical methods, develop and implement management decisions to improve their effectiveness	-	Design of automated control systems; Organizational and managerial practice; Preparation for passing and passing the state exam; Fulfillment, preparation for the defense procedure and defense of the final qualifying work
GPC-7	Able to select reasonably and justify structural, algorithmic, technological and software solutions for managing innovative processes and projects; put them into practice in enterprise innovative systems, industrial and regional innovative systems	-	Design of automated control systems; Programming technologies for innovative industries; Digital technologies for innovative production; Workshop on the application of Earth remote sensing data and geographic information systems; Organizational and managerial practice; Preparation for passing and passing the state exam; Fulfillment, preparation for the defense procedure and defense of the final qualifying work
PC-2	Able to find (choose) optimal solutions when creating new	Assessment of innovative-	Strategic controlling in an innovative enterprise; Economics of high-tech industries; Marketing of

	science-intensive products, considering the requirements of quality, cost, deadlines, competitiveness and environmental safety	investment projects effectiveness / International sci-tech cooperation	innovative products; Supply chain management in an innovative enterprise; Introductory practice; Organizational and managerial practice (U); Organizational and managerial practice (P) Undergraduate practice; Preparation for passing and passing the state exam; Implementation, preparation for the defense procedure and defense of the final qualification work
PC-3	Able to develop a plan and program for organizing innovative activities of a research and production unit, to carry out a feasibility study of innovative projects and programs	Programming technologies for innovative industries; Digital technologies for innovative production	Big data processing; Operational Controlling at an Innovative Enterprise; Digital technologies for innovative production; Strategic controlling in an innovative enterprise; Introductory practice; Organizational and managerial practice (U); Organizational and managerial practice (P); Undergraduate practice; Preparation for passing and passing the state exam; Implementation, preparation for the defense procedure and defense of the final qualification work

4. VOLUME OF DISCIPLINE AND TYPES OF EDUCATIONAL WORK

The total complexity of the discipline is 2 credit units.

Table 4.1 – Types of educational work by periods of development of OP VO

Type of study work		Total, academic hour	Semester 1
Contact work		36	36
Including:			
Lecture		18	18
Seminar classes		18	18
Independent work of the student		36	36
The total complexity of the discipline	Academic hours	72	72
	Credit Units	2	2

5. CONTENT OF THE DISCIPLINE

Table 5.1 – The content of the discipline by type of educational work

Name of the discipline section	Contents of the section (topic)	Types of educational work
Section 1 Fundamentals of Operational Management	Introduction to Operations Management. Operational function in the organization. Enterprise Management System. Organization management through business processes and procedures	LEC, SM, IW
Section 2 Applied Operations Management	The concept of "Six Sigma" (Six Sigma). Lean management and project management (Lean Manufacturing concept). Operating strategies. High tech production management	LEC, SM, IW

* LEC - lecture, SM - seminars; IW - independent work

6. LOGISTICS AND TECHNICAL SUPPORT OF THE DISCIPLINE

Table 6.1 – Logistics of discipline

Types of Auditorium	Audience equipment	Specialized educational / laboratory equipment, software and materials for mastering the discipline (if necessary)
Lecture	An auditorium for lecture-type classes, equipped with a set of specialized furniture; board (screen) and technical means of multimedia presentations	-
Seminar	An auditorium for conducting seminar-type classes, group and individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and technical means for multimedia presentations	-

For independent work of students	An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to EIOS	-

7. EDUCATIONAL-METHODOLOGICAL AND INFORMATION SUPPORT OF THE DISCIPLINE

Main literature:

1) Иванова Т.Б., Журавлева Е.А. New Approaches to Operations Management. (Новые подходы к операционному менеджменту): учебное пособие / М.: Изд-во РУДН. 2012. 91 с. ISBN 978-5-209-03658-6: 90.00

2) Веснин В.Р. Теория организации: учебник / М.: Проспект. 2016. 272 с. ISBN 978-5-392-20248-5

3) Ильдеменов С.В., Ильдеменов А.С., Лобов С.В. Операционный менеджмент: учебник / М.: Инфра-М. 2009. 337 с. ISBN 978-5-16-002265-9: 179.85

4) Чейз Р.Б., Эквилайн Н.Д., Якобс Р.Ф. Производственный и операционный менеджмент: перевод с англ. / 8-е изд. М.: Вильямс. 2003. 704 с. ISBN 5-8459-0157-X: 256.40.

Additional literature:

1) Хаустов А.П., Редина М.М. Операционный менеджмент в нефтегазовом комплексе: учебное пособие / М.: Изд-во РУДН. 2008. 255 с. ISBN 978-5-209-03040-9: 0.00

2) Федорова Л.А., Заволокина Л.И. Учебно-методический комплекс по дисциплине "Экономика труда в наукоемких отраслях промышленности" для студентов бакалавриата профиля "Управление предприятиями наукоемких отраслей" по направлению 38.03.02 "Менеджмент" / М.: Изд-во РУДН. 2019. 38 с. ISBN 978-5-209-09497-5

3) Кулябов Д.С., Королькова А.В. Введение в формальные методы описания бизнес-процессов: учебное пособие / М.: Изд-во РУДН. 2008. 202 с.

4) Кокс Д., Джейкоб Д., Бергланд С. Новая цель: как объединить бережливое производство, шесть сигм и теорию ограничений: перевод с англ. / М.: Манн, Иванов и Фербер. 2015. 430 с. Библиотека Сбербанка. Т. 32. ISBN 978-5-91657-447-0: 754.00

5) Шумаев В.А., Сазонов А.А. Управление логистическими потоками на основе японских технологий: методика применения инструментов Канбан / Менеджмент в России и за рубежом. 2014. № 1. С. 68-74.

The electronic library system (ELS) of RUDN University and third-party EBS, to which university students have access on the basis of concluded contracts:

- ELS RUDN http://lib.rudn.ru/MegaPro/Web
- ELS «University Library Online» http://www.biblioclub.ru
- ELS Юрайт http://www.biblio-online.ru
- ELS «Student Advisor» www.studentlibrary.ru
- ELS «Троицкий мост»

Databases and browsers:

- Electronic fund of legal and normative-technical documentation http://docs.cntd.ru/
- Yandex search https://www.yandex.ru/
- Google search https://www.google.ru/
- Abstract database SCOPUS http://www.elsevierscience.ru/products/scopus/

Educational and methodological materials for independent work of students in the development of the discipline:*

1) A course of lectures on the discipline.

* all educational and teaching materials for independent work of students are placed in accordance with the current procedure on the discipline page in the telecommunication educational in-formation system (TEIS) of RUDN

8. EVALUATION MATERIALS AND SCORE-RATING SYSTEM FOR ASSESSING THE LEVEL OF FORMATION OF COMPETENCES IN THE DISCIPLINE

Evaluation materials and a point-rating system for assessing the level of formation of competencies (parts of competencies) based on the results of mastering the discipline are presented in the Appendix to this Work Program of the discipline.

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