Federal State Autonomous Educational Institution for Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University

Higher School of Management
educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Lean Manufacturing
course title

Recommended by the Didactic Council for the Education Field of:

38.04.02 Management
field of studies / speciality code and title

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

Engineering Management
higher education programme profile/specialisation title

2026

1. COURSE GOAL(s)

The goal of mastering the *Lean Manufacturing* discipline is to build in students the theoretical knowledge and skills of applying the lean manufacturing approach.

2. REQUIREMENTS FOR LEARNING OUTCOMES

The mastering of the *Lean Manufacturing* discipline envisages building the following competencies (parts of competencies) in students:

Table 2.1. List of competences that students acquire through the course study

Competence code	**Competence descriptor**	**Competence formation indicators** (within this course)
GC-3	Ability to perform critical analysis of problematic situations based on the systemic approach and develop a plan of action.	GC-3.1. Know: - economic and mathematical models of the modern market economy; - methods of analysis, synthesis and generalization;
		GC-3.2. Be able to: - gather and systematize the necessary economic information efficiently; - analyze economic phenomena and processes in their correlation; - to make logical thoughts necessary for effective management decision-making;
		GC-3.3. Master: - modern methods of economic analysis; - computer technologies for data collection, systematization and processing; - the ability of self-knowledge, self-actualization, self-reflection;
GC-6	Capability to determine and implement the priorities of his/her own activities and ways to improve it based on self-assessment.	GC-6.1 Controls the amount of time spent on specific activities GC-6.2 Develops tools and time management techniques when performing specific tasks, projects, goals GC-6.3 Analyzes its resources and their limits (personal, situational, temporary, etc.) for the successful completion of the task GC-6.4 Allocates tasks for long-, medium- and short-term with justification of relevance and analysis of resources for their implementation
PC-1	Capability to manage the efficiency of an investment project	PC-1.1 Defines the operations and their sequence to implement the investment project. PC-1.2 Evaluates operational, estimates human resources and determines the participants in the investment project PC-1.3 Plans the implementation stages of the investment project, ensures the quality and quality control of the investment project implementation PC-1.4 Can work in specialized computer programs for the preparation and investment project implementation PC-1.5 Can search the necessary information for the preparation and implementation of an investment project

Competence code	Competence descriptor	Competence formation indicators (within this course)
		PC-1.6 Can identify and assess the degree (level) of an investment project risks and develop measures to manage them

3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The *Lean manufacturing* is an independent discipline that is an integral part of the Management educational program 38.04.02. It is an elective part of the curriculum.

Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
GC-3	Capability to organize and lead the team's work developing a team strategy to achieve the goal	Organization and Production Management	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis
GC-6,	Capable to determine and implement the priorities of his/her own activities and ways to improve it based on self-assessment.	Strategic Management in Industrial Companies	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis
PC-1	Capability to manage the efficiency of an investment project	Innovation Management	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the discipline is 3 credits.

*Table 4.1. Types of academic activities during the periods of higher education programme mastering (**full-time training**)**

Type of academic activities		Total academic hours	Semesters/training modules			
			1	2	3	4
Contact academic hours		*36*			*36*	
including:						
Lectures (LC)		18			18	
Lab work (LW)						
Seminars (workshops/tutorials) (S)		18			18	
Self-studies		*63*			*63*	
Evaluation and assessment (exam/passing/failing grade)		*9*			*9*	
Course workload	academic hours_	**108**			**108**	
	credits	**3**			**3**	

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Subject 1. The Basics of a Lean Office.	Causes and Case History (T.Ono, S.Shingo, Tapping, Laro)	LC, S
Subject 2. Lean Office Concept and Philosophy	Options of Conceptual Representations of Lean Office and their Fundamental Differences	LC, S
Subject 3. Principles of Creating a Lean Office (value, SC flow and losses)	The Main Characteristics of the Lean Flow and its Parameters Differences Between a Lean Office and a Traditional One	LC, S
Subject 4. Systems and Tools for Creating a Lean Office	Lean Office Deployment Models (levels, stages, depth of changes)	LC, S

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Classroom Type	Equipment of the Classroom	Specialized Educational/Laboratory Equipment, Software and Materials for the Discipline (if necessary)
Lecture Hall	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations.	21 workplaces: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor 19"+ 1 projector
Colloquium	A classroom for conducting colloquium-type classes, group and individual consultations, ongoing monitoring and midterm assessment, equipped with a set of specialized furniture and multimedia presentation equipment.	21 workplaces: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor 19"+ 1 projector
Computer Class	A computer classroom for conducting classes, group and individual consultations, continuous control and midterm assessment, equipped with personal computers (___ pcs.), a blackboard (screen) and multimedia presentation technical means.	21 workplace: Celeron system unit/2600 MHz/1280 MB/ 40 GB/DVD ROM/ LCD monitor 17"+ 1 projector + WiFi access point

Classroom Type	Equipment of the Classroom	Specialized Educational/Laboratory Equipment, Software and Materials for the Discipline (if necessary)
Autonomous Work of Students	A classroom for autonomous work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to EIEE.	21 workplaces: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor 19"+ 1 projector

7. RESOURCES RECOMMENDED FOR COURSE STUDY

a) Main Readings:

1. *James P. Womack, Daniel Jones Lean thinking: banish waste and create wealth in your corporation (MUST READ series). –Moscow: Alpina Publisher, 2025. –472c*

2. Tsarenko, A. S. Berezhlivoye myshlenie v gosudarstvennom upravlenii [Lean thinking in public administration]: a monograph / A. S. Tsarenko, O. Y. Guselnikova. — Moscow : Yurayt Publishing House, 2025. - 206 p. — (Current monographs). — ISBN 978-5-534-13961-7. — Text: electronic // EBS Yurayt [website]. — URL: https://urait.ru/bcode/477258

b) Additional Readings:_

3. Ya. Monden Toyota production systems - edited translation from English — edited by A.R. Benediktov and V.V. Motyleva. —M.: Economics. —1989.

4. Staroverova, K. O. Osnovy berezhlivogo proizvodstva [Fundamentals of lean production] : a textbook for secondary vocational education / K. O. Staroverova. — Moscow : Yurayt Publishing House, 2023. — 74 p.

BiblioRossika An electronic library for students, professors and researchers. http://www.bibliorossica.com/individuals.html?ln=ru

Microsoft Teams software, university telecommunication training and information system of RUDN

Resources of the Internet information and telecommunication network:

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements

- RUDN Electronic Library System (RUDN ELS) http://lib.rudn.ru/MegaPro/Web

2. Databases and search engines:

- electronic foundation of legal and normative-technical documentation http://docs.cntd.ru/
- Yandex search engine https://www.yandex.ru/
- Google search engine https://www.google.ru/

The following training toolkit for the student's autonomous work is envisaged as part of mastering the discipline/module:*

1. A course of lectures on the Lean Production discipline.
2. Laboratory workshop on the Lean Production discipline (if laboratory work is available): not available.
3. Methodological guidelines for drafting and formatting the course paper/project on the Lean Production discipline (if there are ones).

The implementation of the course provides interactive lectures, practical classes (colloquiums) using multimedia equipment, preparation of autonomous creative projects and their subsequent presentations, testing, group discussions on the subject of the course, modern knowledge control technologies.

While studying the discipline, the student must attend a course of lectures, participate in the number of colloquiums provided by the course syllabus, study autonomously some topics of the course and confirm their knowledge during control activities.

The student's work in lectures consists in clarifying the basics of the discipline, briefly taking notes of the material, and clarifying issues that cause difficulties. The lecture notes are the basic educational material along with the textbooks recommended in the main list of readings.
The teaching of the main part of the lecture material involves usage of multimedia tools that facilitate the comprehension and consolidation of the material. Presentations are available for download from the RUDN website and can be freely used by students for educational purposes.
The student must master all the topics provided for by the educational and thematic plan of the discipline. Individual topics and training issues must be mastered autonomously. The student studies the recommended literature, briefly outlines the material, and clarifies the most difficult questions that require clarification during consultations. The same should be done with sections of the course that were skipped due to various circumstances.
For an in-depth study of the issue, the student should study the literature from the additional readings list and specialized websites. It is also recommended that students communicate in professional community forums.
Students study educational, scientific literature and periodicals on an autonomous basis. They have the opportunity to discuss what they have read with the teachers of the discipline during scheduled consultations, with other students at colloquiums, as well as at lectures, asking the professor questions.
The control of autonomous work is carried out by the professor in charge. Depending on the teaching methodology, the following forms of continuous assessment can be used: a short oral or written survey before the start of classes, tests, control papers, written homework, essays, etc.

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL UPON COURSE COMPLETION

The assessment materials and the grading system* to evaluate the graduate's level of competences (part of competences) formation as the results of the Lean Production discipline are specified in the Appendix to course syllabus.

DEVELOPERS:

Associate Professor of the Applied Economics Department		V.A. Ermakov
Position, educational department	Signature	Name, surname

HEAD OF EDUCATIONAL DEPARTMENT:

Deputy Head of the Applied Economics Department		A.A. Ostrovskaya
Name of the educational department	Signature	Name, surname

Program Manager

Deputy Head of the Applied Economics Department _____ A.A. Ostrovskaya
position, name of the department signature Name, surname

The code of the controlled competence or its part	Controlled Discipline Section	Controlled Discipline Topic	Assessment Toolkit (forms of control of mastering the professional program)											Scores Topics	Section Scores
			Classroom work					Autonomous work							
			Survey	Test	Colloquium	Control Paper	Discussion	Essay	Homework	Report	Creative Project	Course Paper / project	Exam/Test		
GC-3, GC-6, PC 1	**Subject 1.** The Basics of a Lean Office.	**Subject 1.** The Basics of a Lean Office.					5		5					10	20
		Subject 2. Causes and Case History (T.Ono, S.Shingo, Tapping, Laro)	5			5								10	
GC-3, GC-6, PC 1	**Subject 2.** Lean Office Concept and Philosophy	Subject 3. Options of Conceptual Representations of Lean Office and their Fundamental Differences							5					5	20
				10										10	
			5											5	
GC-3, GC-6, PC 1	**Subject 3.** Principles of Creating a Lean Office (value, SC flow and losses)	**Subject 3.** Principles of Creating a Lean Office (value, SC flow and losses)	5											5	5
GC-3, GC-6, PC 1	**Subject 4.** Systems and Tools for Creating a Lean Office	**Subject 4.** Systems and Tools for Creating a Lean Office	5											5	15
						5			5					10	
		Exam											40		40
		TOTAL	15	5		10	5	10	15				40	60	100