



MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION

Federal State Autonomous Educational Institution of Higher Education

«NATIONAL RESEARCH TOMSK POLYTECHNIC UNIVERSITY»

Appendix 2

**RATING-LIST OF THE “FUNDAMENTALS OF MECHANICAL ENGINEERING” DISCIPLINE**

MARKS			RATING-LIST of the discipline “Fundamentals of Mechanical Engineering” for students of educational program 15.03.01 “Mechanical Engineering”	Term			8th	
«Excellent»	A+	96 – 100 points		<b>6 semesters</b> Lecturers: Kozlov Viktor Nikolaevich	Lectures			32 22
	A	90 – 95 points	Practical classes				16	
«Good»	B+	80 – 89 points	Laboratory works				24	
	B	70 – 79 points	<b>Class hours in total</b>				<b>72</b>	
«Fair»	C+	65 – 69 points	Self-study training				99	
	C	55 – 64 points	<b>TOTAL</b>				<b>171 hours</b> <b>6 credits</b>	
Pass	D	Equal or more than 55 points	Final assessment form				Examination	
Fail	F	55 points and less						

**Results of studying the subject:**

R.4	Ability to plan and carry out analytical and experimental research in the field of engineering, using the latest science and technology
R.5	Ability to show knowledge of the legal, social, environmental and cultural aspects of complex engineering activities, knowledge about health care, life safety, and labor in engineering
R.6	Communicate in a professional environment and in society in whole, including foreign language; analyze existing and develop new technical documentation, clearly state and defend the results of complex engineering activities in engineering plants and in industrial research organizations
R.11	Ability to give preliminary feasibility of design solutions, perform organizational and planning calculations for the establishment or reorganization of production sites, to plan the work of staff and payroll, to apply advanced methods of use of technological equipment in the manufacture of engineering products
R.13	Readiness to make technical documentation (schedules, instructions, budgets, plans, orders for supplies and equipment); to perform work on standardization, technical preparation for certification of equipment, systems, processes and materials; to organize metrological support for the manufacturing processes; to prepare documentation for a quality management system in enterprise

Assessment form	6 <sup>th</sup> semester	
	Quantity	Points
Home assignment	2	8
Report	0	0
Laboratory work report	12	12
Practice report	8	8
Written test	3	21
Homework defending	1	11
Total		60



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6<sup>th</sup> semester

Week	Monday date	Results of studying	Studying activity category	Hours		Assessment materials						Points	Teaching method (ДОТ)*	Academic means				
				Class	Self-study	Essay	Report	Laboratory work report	Test							Academic literature	Internet Resources	Video Resources
24-27			<b>Part 1. Basic concepts of mechanical engineering production. Dimensional chains (4 hours)</b>		24													
24	8.02.16	P4, P11	Lecture 1. Machine: components, accuracy, life cycle.	2														OCH 1, 2 ДОП 1, 2
			Laboratory work 1. Drawing a shop floor layout not to scale															
			Self-study		2													ДОП 2
2		P2, P3, P4	Lecture 2. Production and manufacturing processes, productivity, manufacturing cost of a machine															
			Laboratory work 1. Drawing a shop floor layout not to scale	2				2				2						OCH 2
			Self-study		2													OCH 1
3		P2, P3, P4	Lecture 3. Methods of production, process planning, engineering discipline	2														OCH 1, 2 ДОП 1, 2, 3
			Self-study		2													OCH 1
4		P2, P3, P4, P6	Laboratory work 2. Performing a shop floor layout to scale	2				2				2						OCH 2
			Self-study		2													OCH 1
5		P2, P6, P13	Lecture 4. Calculation of required quantity of equipment and floor space. The workplace organization.	2														OCH 1, 2, 3 ДОП 4
			Self-study		2													OCH 1
6		P2, P6, P11, P13	Laboratory work 3. Analyzing a shop floor layout	2				2				2						OCH 2
			Self-study		2													OCH 1
7		P5, P6, P11, P13	Lecture 5. A layout of industrial equipment in divisions.	2														OCH 1, 2
			Self-study		2													ДОП 4
8		P2, P6,	Laboratory work №4. Performing a shop floor layout to scale	2				2				2						OCH 2





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				Class	Self-study	Essay	Report	Laboratory work report	Test							Academic literature	Internet Resources
		P6, P11, P13	Laboratory work №7. Calculating labour input to process the annual program... (continuation)	2				2					2		OCH 1, 3 ДОП 1, 4		
			Self-study		2										ДОП 1		
			Test 2						10				10				
			<b>Totals on Part 2</b>	18	18			8	10				18				
15-18			<b>Part 3. Design of auxiliary system (4 hours)</b>														
15		P4, P5, P6, P11, P13	Lecture 8. Quality inspection and consumer service	2											OCH 1		
			Self-study		2										OCH 1, 3		
16		P4, P5, P6, P11, P13	Laboratory work №8. Calculating equipment quantity and production floor space	2				2					2		OCH 1, 3 ДОП 1, 4		
			Self-study		2										ДОП 1		
17		P4, P5, P6, P11, P13	Lecture 9. Production management service	2											OCH 1		
			Self-study		2										ДОП 1		
18		P4, P5, P6, P11, P13	<b>Conference-week 2</b>														
			Lecture 10. Developing the enterprise general layout and a project economic justification														
			Laboratory work 9. Designing tool management system	2				2					2		OCH 2 ДОП 4		
			Conference						2				2		OCH 2		
			Test assignments (ЦОКО)														
			Self-study		2												
			Laboratory work 10. Designing tool management system (continuation)														
			Pre-exam Consultation														
			Test 3						7				7				
			<b>Totals on Part 3</b>	8	8			2	4	7			13				



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				Class	Self-study	Essay	Report	Laboratory work report	Test							Academic literature	Internet Resources
			Home assignments								10		10				
			Totals on check point 2	36	36		4	24	26	10			60				
			Examination test										40				
			Course hours in 6 <sup>th</sup> semester in total	36	36								100				

\* For Distance Education only (ДОТ)

Academic means:

№ (code)	Basic literature (ОСН)
ОСН 1	Мельников Г.Н., Вороненко В.П. Проектирование механосборочных цехов. М.: Машиностроение, 1990. – 352 с.
ОСН 2	Козлов В.Н. Проектирование механосборочных цехов. Учебное пособие. – Томск, Изд. ТПУ, 2009 г. – 144 с.
ОСН 3	Проектирование автоматизированных участков и цехов\ Под. ред. Ю.М. Соломенцева. – 2-е изд., испр. – М.: Высшая школа, 2000. – 272 с. : ил.

№ (code)	Auxiliary literature (ДОП)
ИР 1	Петкау Э.П., Матвеев В.С., Журавлёв В.А. Проектирование машиностроительного производства: учебное пособие – Томск, Изд. ТПУ, 2002 г. – 199 с.: ил.
ИР 2	Королёва Н.И. Организация производства на предприятии: учебное пособие. – Томск, Изд. ТПУ, 2002 г. – 156 с.
ИР 3	Проектирование машиностроительных заводов: Справочник в 6-ти т. Т. 1. Организация и методика проектирования/Под ред. Е.С. Ямпольского. – М.: Машиностроение, 1974. – 326 с.
ИР 4	Проектирование машиностроительных заводов: Справочник в 6-ти т. Т. 4. Проектирование механических, сборочных, цехов защитных покрытий/Под ред. Е.С. Ямпольского. – М.: Машиностроение, 1975. – 326 с.