

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ
ВЫСШЕГО ОБРАЗОВАНИЯ

«Московский государственный технологический университет «СТАНКИН»
(ФГБОУ ВО «МГТУ «СТАНКИН»)

INTRODUCTION
PROFESSIONAL CERTIFICATE PROGRAMME
«INDUSTRY 4.0»

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Expected dates of studies	
Programme description	
Target group	Head of the enterprise, area director, department head, workshop manager, head of the enterprise, area director, department head, workshop manager
Type of professional activity	<i>Production, management, research</i>
Description of the programme	<p>The program provides participants with an introduction to Industry 4.0. Participants will explore fundamental areas of Industry 4.0 and acquire a better understanding of systematic approach to digitalization and integration of value chains.</p> <p>Goals of the Programme: The focus of the program is on the development of application-oriented solutions that enable the implementation of fully networked and intelligent production systems in practice.</p> <p>Learning objective:</p> <ol style="list-style-type: none"> 1. Acquiring theoretical knowledge and experience in smart factory planning 2. Acquiring of knowledge and developing skills the technology management 3. Insight into the acatech Industry 4.0 Maturity Index 4. Employees are able to adapt to current as well as future requirements of digital production <p>The English-taught course “Industry 4.0” includes three focus tracks, which offer participants the opportunity for specialization in their field of interest:</p> <ul style="list-style-type: none"> – cyber-physical systems, – smart factory, – technology management.
Programme structure	<p>The program consists of 4 professional modules:</p> <p>Module 1 – Industry 4.0 and Digital Transformation. The concept Industry 4.0</p> <p>Module 2 - Cyber-Physical-Systems. Enterprise Resource Planning (ERP) and Manufacturing Execution System (MES) for Cyber-Physical-System</p> <p>Module 3 – Modern Factory Layout Planning</p> <p>Module 4 – End-to-end digital integration within a Smart Factory. Managing the Digital Transformation of Companies</p>

CURRICULUM

Professional Certificate Programme

«Industry 4.0»

Course duration, including self-study: 16 hours

Self-study – 0 hours

№	Module	Total hours	including		Type of assessment
			Class hours		
			lectures	Tutorials	
1	2	3	4	5	7
1	Industry 4.0 and Digital Transformation. The concept Industry 4.0	3,7	2,7	1	Case presentation
2	Cyber-Physical-Systems. Enterprise Resource Planning (ERP) and Manufacturing Execution System (MES) for Cyber-Physical-Systems	3,7	3,2	0,5	Case presentation
3	Modern Factory Layout Planning	3,8	2	1,8	Case presentation
4	End-to-end digital integration within a Smart Factory. Managing the Digital Transformation of Companies	3,8	2	1,8	Case presentation
	Full assessment	1	X	X	Final project presentation
	Total hours	16	9,9	5,1	

Major learning outcomes:	System approach to the digital production organization Ability to find organizational and managerial decisions and the willingness to be responsible for them from the standpoint of an enterprise digitalization Strategic analysis skills (development and implementation of an organization's strategy aimed at ensuring its competitiveness in the context of the fourth industrial revolution) Skills in enterprise auditing for the transition to Industry 4.0
Duration of studies	3 days, 16 hours, mode of attendance: full time
Structure of tutorials	
Period of tutorials	3 days mode of attendance: full time
Goal of tutorials	The participants will acquire practical experience of: <ul style="list-style-type: none"> – applying the systemic approach to the organization of smart factory; – applying the acatech Industry 4.0 Maturity Index – applying the modern factory layout planning approach
Tasks of tutorials	The participants will explore areas of Industry 4.0 and Cyber-Physical-Systems. The participants will be acquainted with the practical arrangements of the concept Industry 4.0.
Result of tutorials	1. Acquaintance with the modern approaches of the Industry 4.0. 2. Understanding the role of staff in the Industry 4.0 3. Understanding the business processes of managing advanced technologies within industrial enterprises
Title receiving organization	ФГБОУ ВО «МГТУ «СТАНКИН»
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