

**TURIN POLYTECHNIC UNIVERSITY IN TASHKENT  
CURRICULUM  
60711500- Mechatronics and Robotics**

Name of qualification: **Bachelor of Science**

Official length of programme: **Four years studies, 180 credits**

Mode of studies: **Continual studies**

Course type	Course code	Course name	Credit	Hours	Classes					Self-study	Course	Course code	Course name	Credit	Hours	Classes					Self-study		
					Total	Lecture	Practice	Labs	Seminar							Total	Lecture	Practice	Labs	Seminar			
<b>1 semester (15 weeks)</b>											<b>2 semester (15 weeks)</b>												
A		Mathematics		188	76	40	36	-	-	112	A		Mathematics		188	76	40	36	-	-	112		
A		Chemistry		188	76	40	36	-	-	112	A		Chemistry		188	76	40	36	-	-	112		
B		Physics		188	76	40	36	-	-	112	A		Physics		188	76	40	36	-	-	112		
A		Drawing (descriptive geometry)		188	76	40	36	-	-	112	B		Computer Science (Python programming)		188	76	30	30	16	-	112		
A		English language		188	76	40	36	-	-	112	A		English language		114	46	30	16	-	-	68		
A		Elective course 1		114	46	30	16	-	-	68	C		Elective course 1		114	46	30	16	-	-	68		
C		Elective course 1		114	46	30	16	-	-	68	C		Elective course 1		114	46	20	16	10	-	68		
<b>Total for semester:</b>				<b>1168</b>	<b>472</b>	<b>260</b>	<b>212</b>	-	-	<b>696</b>	<b>Total for semester:</b>				<b>1094</b>	<b>442</b>	<b>230</b>	<b>186</b>	<b>26</b>	-	-	<b>652</b>	
											<b>Total for year:</b>												
											<b>2262</b>	<b>914</b>	<b>490</b>	<b>398</b>	<b>26</b>	-	-	<b>1348</b>					
<b>3 semester (15 weeks)</b>											<b>4 semester (15 weeks)</b>												
A		Mathematical Analysis 1	8	300	120	70	50	-	-	180	A		Physics 2 (Electromagnetism and Wave theory)	6	226	90	50	40	-	-	136		
A		Physics 1	8	300	120	70	50	-	-	180	A		Mathematical analysis 2	6	226	90	50	40	-	-	136		
B		Computer Science (C++/ Python)	6	226	90	40	30	20	-	136	B		Engineering Drawing	6	226	90	50	30	10	-	136		
A		Linear Algebra and Geometry (+Matlab/Simulink)	8	300	120	50	40	30	-	180	B		Engineering Mechanics	6	226	90	50	40	-	-	136		
											B		Fundamentals of Electrical Engineering and Circuit Theory	6	226	90	50	30	10	-	136		
<b>Total for semester:</b>				<b>30</b>	<b>1126</b>	<b>450</b>	<b>230</b>	<b>170</b>	<b>50</b>	-	<b>676</b>	<b>Total for semester:</b>				<b>30</b>	<b>1130</b>	<b>450</b>	<b>250</b>	<b>180</b>	<b>20</b>	-	<b>680</b>
											Internship												
											<b>0</b>												
											<b>Total for year:</b>												
											<b>60</b>	<b>2256</b>	<b>900</b>	<b>480</b>	<b>350</b>	<b>70</b>	-	<b>1356</b>					
<b>5 semester (15 weeks)</b>											<b>6 semester (15 weeks)</b>												
B		Fluid mechanics and Thermodynamics (including Pneumatics and Hydraulics)	8	300	120	60	30	30	-	180	B		Fundamentals of Electronics	6	226	90	40	30	20	-	136		
B		Material Science	6	226	90	60	30	-	-	136	C		Robotics	6	226	90	40	30	20	-	136		
B		Applied Mechanics and Machine Elements	8	300	120	60	30	30	-	180	B		CAD/CAM/CAE	6	226	90	20	20	50	-	136		
C		Electric Drives	5	188	76	40	20	16	-	112	B		Electrical and Mechanical Measurements (+ Statistics Theory)	6	226	90	50	30	10	-	136		
A		Formal Writing	3	114	46	26	20	-	-	68	C		Microcomputer technology (+ Microcomputer programming)	6	226	90	40	30	20	-	136		
<b>Total for semester:</b>				<b>30</b>	<b>1128</b>	<b>452</b>	<b>246</b>	<b>130</b>	<b>76</b>	-	<b>676</b>	<b>Total</b>				<b>30</b>	<b>1130</b>	<b>450</b>	<b>190</b>	<b>140</b>	<b>120</b>	-	<b>680</b>
											Industrial Internship												
											<b>0</b>												
											<b>Total for year:</b>												
											<b>60</b>	<b>2258</b>	<b>902</b>	<b>436</b>	<b>270</b>	<b>196</b>	-	<b>1356</b>					
<b>7 semester (15 weeks)</b>											<b>8 semester (15 weeks)</b>												
B		Automatic control	6	226	90	40	30	20	-	136	B		Project Management	6	226	90	40	30	20	-	136		
C		PLC and Industrial Controllers	6	226	90	30	30	30	-	136	C		Internet of Things	6	226	90	30	30	30	-	136		

C	Modeling and simulation of mechatronic systems	6	226	90	40	30	20	-	136	D	Internship	9	338	-	-	-	-	-	338	
C	Digital signal processing	6	226	90	40	30	20	-	136	D	Thesis	9	338	-	-	-	-	-	338	
C	Power Electronics	6	226	90	40	30	20	-	136											
<b>Total for semester:</b>		<b>30</b>	<b>1130</b>	<b>450</b>	<b>190</b>	<b>150</b>	<b>110</b>	-	<b>680</b>											
A. General study (Fundamental) courses;																				
B. General technical courses;																				
C. Specialty courses;																				
D. Internship and thesis																				
												<b>30</b>	<b>1128</b>	<b>180</b>	70	60	50	-	948	
<b>Total for year:</b>												<b>60</b>	<b>2258</b>	<b>630</b>	<b>260</b>	<b>210</b>	<b>160</b>	-	<b>1628</b>	
<b>Total:</b>												<b>180</b>	<b>9034</b>	<b>3346</b>	<b>1666</b>	<b>1228</b>	<b>452</b>	-	<b>5688</b>	

**List of Elective course 1 courses:**

- Law and human safety;
- Web programming;
- 3D printing technologies;
- Introduction to Mechatronics;
- Arduino development.

**List of Elective course 4 courses:**

- IoT technologies;
- Computer networks;
- Machine learning;
- Artificial intelligence;
- Robotics and intellectual systems.