

**BS Industrial Engineering Curriculum**

From Batch Fall 2023 to Onwards

First Semester						Second Semester					
Pre Req	C. Code	Course Title	Lec	Lab	CR	Pre Req	C. Code	Course Title	Lec	Lab	CR
	HM-101	English Grammar and Comperehension	3	0	3		HM-102	Composition and Communication	3	0	3
	HM-111	Islamic Studies/Ethics	2	0	2		NS-102	Linear Algebra	3	0	3
	IE-111	Engineering Drawing and Graphics	1	0	1		IE-121	Manufacturing Processes I	3	0	3
	IE-111 L	Engineering Drawing and Graphics (Lab)	0	1	1		IE-121L	Manufacturing Processes I (Lab)	0	1	1
	IE-101	Engineering Mechanics	3	0	3		HM-112	Pakistan Studies	2	0	2
	IE-101 L	Engineering Mechanics (Lab)	0	1	1		IE-141	Programming Fundamentals	2	0	2
	IE-102	Introduction to Engineering Managaement	2	0	2		IE-141L	Programming Fundamentals (Lab)	0	1	1
	NS-101	Applied Calculus	3	0	3		IE-151	Basic Industrial Electronics	2	0	2
	IE-103L	Workshop Practice	0	2	2		IE-151L	Basic Industrial Electronics (Lab)	0	1	1
<b>Total</b>			<b>14</b>	<b>4</b>	<b>18</b>	<b>Total</b>			<b>15</b>	<b>3</b>	<b>18</b>
Third Semester						Fourth Semester					
Pre Req	C. Code	Course Title	Lec	Lab	CR	Pre Req	C. Code	Course Title	Lec	Lab	CR
	NS-203	Differential Equations	3	0	3		IE-213	Mechanics of Materials	3	0	3
	IE-252	Probability and Statistics for Engineers	3	0	3		IE-213L	Mechanics of Materials (Lab)	0	1	1
	IE-204	Introduction to Thermo & Fluids	3	0	3		IE-253	Engineering Economics	3	0	3
	IE-205	Materials Engineering	3	0	3		IE-242	Numerical Analysis and Computer Applications	2	0	2
	IE-205L	Materials Engineering (Lab)	0	1	1		IE-242L	Numerical Analysis and Computer Applications (Lab)	0	1	1
	IE-212	Machine Design and CAD	2	0	2		IE-222	Metrology and SQC	3	0	3
	IE-212L	Machine Design and CAD (Lab)	0	1	1		IE-222L	Metrology and SQC (Lab)	0	1	1
							IE-223	Workstudy and Ergonomics	3	0	3
							IE-223L	Workstudy and Ergonomics (Lab)	0	1	1
<b>Total</b>			<b>14</b>	<b>2</b>	<b>16</b>	<b>Total</b>			<b>14</b>	<b>4</b>	<b>18</b>
Fifth Semester						Sixth Semester					
Pre Req	C. Code	Course Title	Lec	Lab	CR	Pre Req	C. Code	Course Title	Lec	Lab	CR
	IE-331	Operations Research	3	0	3		IE-324	Manufacturing Process II	3	0	3
	IE-331L	Operations Research (Lab)	0	1	1		IE-324L	Manufacturing Process II (Lab)	0	1	1
	IE-343	Systems Simulations	2	0	2		IE-333	Project Management	3	0	3
	IE-343L	Systems Simulations (Lab)	0	1	1		IE-333L	Project Management (Lab)	0	1	1
	IE-354	Instrumentation and Control	3	0	3		IE-356	Automation and Robotics	2	0	2
	IE-354L	Instrumentation and Control (Lab)	0	1	1		IE-356L	Automation and Robotics (Lab)	0	1	1
	IE-355	Technical Report Writing and Presentation Skills	1	0	1		IE-334	Environment Maintenance and Safety	3	0	3
	IE-355L	Technical Report Writing and Presentation Skills (Lab)	0	2	2		IE-344	Machine Learning	2	0	2
	IE-332	Production planning and control	3	0	3		IE-344L	Machine Learning (Lab)	0	1	1
<b>Total</b>			<b>12</b>	<b>5</b>	<b>17</b>	<b>Total</b>			<b>13</b>	<b>4</b>	<b>17</b>
Seventh Semester						Eighth Semester					
Pre Req	C. Code	Course Title	Lec	Lab	CR	Pre Req	C. Code	Course Title	Lec	Lab	CR
	IE-4XX	Elective 1	3	0	3		IE-4XX	Elective 3	3	0	3
	IE-435	Industrial Facilities Planning	2	0	2		HM-457	Social and Ethical Aspects in Engineering	3	0	3
	IE-435L	Industrial Facilities Planning (Lab)	0	1	1		IE-445	CAM and CIM*	2	0	2
	IE-436	Entrepreneurship	3	0	3		IE-445L	CAM and CIM (Lab)*	0	1	1
	IE-4XX	Elective 2	3	0	3		IE-425	Lean Manufacturing Techniques	3	0	3
	IE-461	Project Phase I	0	3	3		IE-462	Project Phase II	0	3	3
<b>Total</b>			<b>11</b>	<b>4</b>	<b>15</b>	<b>Total</b>			<b>11</b>	<b>4</b>	<b>15</b>

Total Cr. Hrs.

134

\*Computer aided manufacturing and computer integrated manufacturing  
Note: Internship of 6 to 8 weeks is compulsory for graduation

Electives
Industry 4.0
Artificial Intelligence for Manufacturing
Digital Logic Design
Embedded Systems
Industrial Internet of Things
Reliability Engineering
Tool and Die Design
Design of Experiments
Total Productive Maintenance
Total Quality Management
Energy Auditing and Management
Management information systems
Introduction to Six Sigma
Six Sigma in Health Care
Organizational Behavior
Supply Chain management
Human Resource Management