

**Curriculum of Bachelor of Science in Industrial Engineering (BSIE)**  
 =====YU-COEA A.Y.2024 (June 2024), (V 6.1) 133 CR=====



FIRST YEAR (Freshmen)							
First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
CIS 103	Programming Fundamentals -1	4	ORN 03R, ORN 03C	ENG 101	English Essay Writing	3	ORN 05R, ORN 05C
MTH 104	Calculus I	3	ORN 03R, ORN 03C	MTH 106	Discrete Mathematics	3	ORN 04R, ORN 04C
STT 103	Probability and Statistics	3	ORN 03R, ORN 03C	PHY 103	Physics - I (Mechanics)	4	ORN 04R, ORN 04C
CHM 101	General Chemistry	4	ORN 04R, ORN 04C	ENR 201	Engineering Drawing and CAD	3	ORN 04R, ORN 04C
ARB 102	Communication Skills in Arabic	2	ORN 03R, ORN 03C	ISL 101	Foundation of Islamic Culture	2	ORN 03R, ORN 03C
H/SSE xxx	Humanities/Social Science Elective Course-1	3	ORN 04R, ORN 04C	H/SSE xxx	Humanities/Social Science Elective Course-2	3	ORN 04R, ORN 04C
<b>Sub-Total</b>		<b>19</b>		<b>Sub-Total</b>		<b>18</b>	

SECOND YEAR (Sophomore)							
First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
MTH 204	Calculus II	3	MTH 104	PHY 203	Physics - II (EM + Electronics)	4	PHY 103
MTH 301	Linear Algebra	3	MTH 104	IEG 202	Social and Ethical Aspects in Engineering	2	IEG 201
IEG 201	Introduction to Engineering Design	2	ENR 201	IEG 321	Operation Research-1	3	MTH 301, CIS 103
MEG 211	Fundamentals of Materials Engineering	3	PHY 103, CHM 101	IEG 303	Quality Control	3	IEG 201, IEG 301
IEG 301	Design of Experiments	3	STT 103	IEG 341	Manufacturing Process-1	3	MEG 211
ISL 201	Foundation of Islamic Economy	2	ORN 03R, ORN 03C	IEG 332	Work Design and Analysis	3	Pre-requisite: MEG 211 Co-require: IEG 341
ARB 202	Writing Skills in Arabic	2	ORN 03R, ORN 03C				
<b>Sub-Total</b>		<b>18</b>		<b>Sub-Total</b>		<b>18</b>	

THIRD YEAR (Junior)							
First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
MTH 304	Differential Equations	3	MTH 204	IEG 312	Operation Management	3	IEG 311
IEG 304	Engineering Economy and Costing	3	IEG 202	IEG 322	Operation Research-2	3	IEG 321, MTH 304
IEG 311	Production and Inventory Systems	3	IEG 301	IEG 342	Manufacturing Processes-2	3	IEG 341
IEG 323	Systems Simulation	3	IEG 321	IEG 431	Ergonomics	3	IEG 332
IEG 400	Product Development and Innovation	3	IEG 201, IEG 303	IEG 450	Industrial Facility Design and Material Handling	3	IEG 321, IEG 332
<b>Sub-Total</b>		<b>15</b>		<b>Sub-Total</b>		<b>15</b>	

FOURTH YEAR (Senior)							
First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
IEG 302	Engineering Reliability	2	IEG 312	IEG 351	Manufacturing Systems	3	IEG 302, IEG 342
IEG 345	Industrial Control Systems and Automation	3	CIS 103, PHY 203, MTH 304	IEG xxx	IE Elective Course-1	3	
IEG 411	Project Management	3	IEG 312, IEG 304	IEG xxx	IE Elective Course-2	3	
IEG 430	Safety Engineering	3	IEG 431	*CSK 001	Career Skills	0	
IEG 490	Graduation Design Project-1	2	Complete 85 credit hours, All Mathematics, Basic Sciences, and IE Courses in Level 1-5, IEG 431, IEG 450	IEG 491	Graduation Design Project-2	2	IEG 490
<b>Sub-Total</b>		<b>13</b>		<b>Sub-Total</b>		<b>11</b>	

CO-OP (Summer & Regular Semester)			
Code	Course Title	CR	Pre-Requisite
IEG 497	Co-op practical training (*)	6	Pass 90 Cr. Hrs.
<b>Sub-Total</b>		<b>6</b>	

Elective Courses							
Humanities / Social Science Electives (Two courses from this list)				Industrial Engineering Electives (Two courses from this list)			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
SOS 102	Introduction to Social Science	3	ORN 04R, ORN 04C	IEG 403	Six Sigma and Lean Operations	3	IEG 303, Pass 100 Cr. Hrs
PHL 101	Critical Thinking	3	ORN 04R, ORN 04C	IEG 413	Supply Chain	3	IEG 312, Pass 100 Cr. Hrs
PSY 101	Principle of Psychology	3	ORN 04R, ORN 04C	IEG 414	Production System Operations	3	IEG 312, Pass 100 Cr. Hrs
SOS 101	Saudi Heritage	3	ORN 04R, ORN 04C	IEG 433	Ergonomic Design	3	IEG 431, Pass 100 Cr. Hrs
FRE 106	Conversational French 1	3	ORN 04R, ORN 04C	IEG 446	Direct Digital Manufacturing	3	IEG 342, Pass 100 Cr. Hrs
CHI 107	Chinese Language	3	ORN 04R, ORN 04C	IEG 447	Computer Integrated Manufacturing	3	IEG 345, Pass 100 Cr. Hrs
ENG 103	Introduction to English Literature	3	ORN 04R, ORN 04C	MIS 327	Database Management and Design	3	CIS 103, Pass 100 Cr. Hrs
				IEG 404	Data Science for Engineers	3	CIS 103, IEG 301, Pass 100 Cr. Hrs