

# Curriculum of Bachelor of Science in Industrial Engineering (BSIE)

=====YU-COEA A.Y.2022 (August 2023), (V 4.0) 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	ENR 201	Engineering Drawing and CAD	3	ENG 101
MTH 104	Calculus I	3	ORN 03R, ORN 03C	CHM 101	General Chemistry	4	ORN 04R, ORN 04C
STT 103	Probability and Statistics	3	ORN 04R, ORN 04C	PHY 103	Physics - I (Mechanics)	4	ORN 04R, ORN 04C
ENG 101	English Essay Writing	3	ORN 05R, ORN 05C	MTH 204	Calculus II	3	MTH 104
ARB 102	Communication Skills in Arabic	2	ORN 03R, ORN 03C	MTH 106	Discrete Mathematics	3	ORN 04R, ORN 04C
xxx	Humanities/Social Science Elective I	3	ORN 04R, ORN 04C				
	<b>Sub-Total</b>	<b>18</b>			<b>Sub-Total</b>	<b>17</b>	

SECOND YEAR (Sophomore)							
First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
MTH 304	Differential Equations	3	MTH 204	IEG 202	Social and Ethical Aspects in Engineering	2	IEG 201
IEG 201	Introduction to Engineering Design	2	ENR 201	IEG 341	Manufacturing Processes-1	3	MEG 211
MEG 211	Fundamentals of Materials Engineering	3	PHY 103, CHM 101	IEG 302	Engineering Reliability	2	IEG 301, MTH 204
IEG 301	Design of Experiments	3	STT 103	IEG 303	Quality Control	3	IEG 201, IEG 301
IEG 311	Production and Inventory Systems	3	STT 103	IEG 321	Operation Research-1	3	MTH 301, CIS 103
MTH 301	Linear Algebra	3	MTH 104	ENR 203	Statics and Strength of Materials	3	MTH 104, PHY 103
	<b>Sub-Total</b>	<b>17</b>			<b>Sub-Total</b>	<b>16</b>	

THIRD YEAR (Junior)							
First Semester				Second Semester			
Code	Course Title	CR	Pre-Requisite	Code	Course Title	CR	Pre-Requisite
PHY 203	Physics - II (EM + Electronics)	4	PHY 103	IEG 312	Operation Management	3	IEG 311
IEG 304	Engineering Economy and Costing	3	MTH 304, IEG 202	IEG 322	Operation Research-2	3	IEG 321
IEG 323	Systems Simulation	3	IEG 321	IEG 342	Manufacturing Processes-2	3	IEG 341
IEG 332	Work Design and Analysis	3	IEG 341	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
ISL 101	Foundation of Islamic Culture	2	ORN 03R, ORN 03C				
	<b>Sub-Total</b>	<b>18</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 345	Industrial Control Systems and Automation	3	CIS 103, PHY 203	IEG 411	Project Management	3	IEG 312, IEG 304
IEG 351	Manufacturing Systems	3	IEG 302, IEG 342	IEG xxx	IE Elective Cours-1	3	
IEG 430	Safety Engineering	3	IEG 431	IEG xxx	IE Elective Cours-2	3	
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	ISL 201	Foundation of Islamic Economy	2	ORN 03R, ORN 03C
ARB 202	Writing Skills in Arabic	2	ORN 03R, ORN 03C	IEG 491	Graduation Design Project-2	2	IEG 490
				*CSK 001	Career Skills	0	
	<b>Sub-Total</b>	<b>13</b>			<b>Sub-Total</b>	<b>13</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>	

(\*) CSK 001 is recommended as pre-requisite to IEG 497

Elective Courses							
Humanities / Social Science Electives (One course 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 301, IEG 303
PHL 101	Critical Thinking	3	ORN 04R, ORN 04C	IEG 413	Supply Chain	3	IEG 312
PSY 101	Principle of Psychology	3	ORN 04R, ORN 04C	IEG 414	Production System Operations	3	IEG 312
SOS 101	Saudi Heritage	3	ORN 04R, ORN 04C	IEG 433	Ergonomic Design	3	IEG 332, IEG 431
FRE 106	Conversational French 1	3	ORN 04R, ORN 04C	IEG 446	Direct Digital Manufacturing	3	IEG 342
CHI 107	Chinese Language	3	ORN 04R, ORN 04C	IEG 447	Computer Integrated Manufacturing	3	IEG 345
				MIS 327	Database Management and Design	3	CIS 103, IEG 342