- برنامج هندسة الانشاءات

i. المواد المطلوب إنجازها:-

University requirements courses are unified for all the programs of Modern University for Technology & Information. They consist of 13 credits of a total of 160 credits), which are satisfied by completing seven (7) courses:

1- Four (4) compulsory courses equivalent to 7 credits as listed in table 14- a.
2- Three (3) elective courses equivalent to 6 credits as listed in table 14- b.

Table 14.a: Compulsory Courses of University Requirements (7 credit Hours of total 160 credits).

Code	Subject	Credit Hours	Contact hours				Prerequisites
			L	T	L/P	TT	
HUM 011	Technical English	1	1	-	-	1	NONE
HUM 021	History of Engineering and Technology	2	2	-	-	2	
HUM 141	Presentation Skills	2	2	-	-	2	
HUM X41	Critical Thinking	2	2	-	-	2	
Total		**7**	**7**	**-**	**-**	**7**	

Table 14.b: Elective Courses of University Requirements (6 Credits Hours of total 160 credits)

Code	Subject	Credit Hours	Contact hours				Prerequisites
			L	T	L/P	TT	
Pool of UR Elective (1) Courses (HUM 3E* (2CH))							
HUM 331	Professional Ethics and Legislation	2	2	-	-	2	NONE
HUM 332	Human Rights	2	2	-	-	2	
HUM 333	Architecture and planning laws and regulations	2	2	-	-	2	
Pool of UR Elective (2) Courses (HUM 3E* (2CH))							
HUM 351	Issues of Energy, Water and Climate Change	2	2	-	-	2	NONE
HUM 352	Nuclear Safeguards	2	2	-	-	2	
HUM 353	Sustainability Topics in Architecture/ Urbanism	2	2	-	-	2	
Pool of UR Elective (3) Courses (HUM 4E* (2CH))							
HUM 461	First Aid Skills	2	2	-	-	2	NONE
HUM 462	Engineering Psychology	2	2	-	-	2	
HUM 463	Building Safety and Fire Protection	2	2	-	-	2	
Total		**6**	**6**	**-**	**-**	**6**	

To achieve these Intended Learning Outcomes, a set of courses must be completed as a Faculty Requirements. Faculty Requirements (Mathematics, Mechanics, Physics, Engineering Sciences

and Engineering Culture Courses) consist of 34 credits of total 160 credits which are satisfied by completing Twelve (12) courses:

1- Eleven (11) compulsory courses equivalent to 31 credits as listed in table 15. a.
2- One (1) elective course equivalent to 3 credits as listed in table 15. b.
3- The student must pass the field training-I and-II to satisfy the graduation requirements.

Table 15.a: Compulsory Courses of Faculty Requirements (31 credits of total 160 credits)

Code	Subject	Credit Hours	Contact hours				Prerequisites
			L	T	L/P	TT	
EMP 011	Mathematics-I	3	2	2	-	4	NONE
EMP 012	Mathematics-II	3	2	2	-	4	EMP 011
EMP 021	Mechanics-I	3	2	2	-	4	NONE
EMP 022	Mechanics-II	3	2	2	-	4	EMP 021
EMP 031	Physics-I	3	2	1	2	5	NONE
EMP 032	Physics-II	3	2	1	2	5	EMP 031
EMP 041	Chemistry	3	2	1	2	5	NONE
EMP 051	Engineering Graphics	3	1	-	5	6	NONE
ELE 061	Introduction to Computers	2	1	-	3	4	NONE
MEC 061	Principles of Manufacturing Engineering	3	1	-	5	6	NONE
TRN X11	Technical Report Writing	2	2	-	-	2	HUM 011
TRN 221	Field Training-I	-	-	-	-	-	NONE
TRN 321	Field Training-II	-	-	-	-	-	NONE
Total		31	19	11	19	49	

Table 15.b: Elective Courses of Faculty Requirements (3 Credits Hours of total 160 credits).

Code	Subject	Credit Hours	Contact hours				Prerequisites
			L	T	L/P	TT	
Pool of FR Elective Courses (BUS XE* (3CH))							
BUS X11	Engineering Economy	3	2	2	-	4	NONE
BUS X12	Project Feasibility Studies	3	2	2	-	4	
BUS X21	Accounting	3	2	2	-	4	
BUS X31	Introduction to Finance	3	2	2	-	4	
Total		**3**	**2**	**2**	**-**	**4**	

To achieve these Intended Learning Outcomes, a set of courses must be completed as a Discipline Civil Engineering Requirements which consist of (67) credits of a total of 160 credits, which are satisfied by completing Twenty-Four (24) courses as listed in table 16.

Table 16: Compulsory Courses of Discipline Requirements: Civil Engineering (67 Credits of total 160 Credits)

Code	Course Title	Credit Hours	Contact Hours				Prerequisites
			L	T	L/P	TT	
CIV 111	Structural Analysis-I	3	2	1	2	5	EMP 021
CIV 112	Structural Analysis-II	3	2	-	2	4	CIV 111
CIV 121	Properties of Construction Materials	3	2	-	3	5	EMP 031
CIV 131	Civil Engineering Drawings	2	1	-	3	4	EMP 051
CIV 132	Fluid Mechanics	3	2	1	2	5	EMP 031
CIV 133	Hydraulics	3	2	-	3	5	CIV 132
CIV 171	Surveying-I	3	2	-	3	5	EMP 012
CIV 172	Surveying-II	3	2	-	3	5	CIV 171
CIV 213	Structural Analysis-III	3	2	-	2	4	CIV 112
CIV 214	Structural Analysis-IV	3	2	-	3	5	CIV 213
CIV 222	Concrete Technology	2	1	-	3	4	CIV 121
CIV 234	Irrigation and Drainage Engineering	2	1	-	3	4	CIV 133
CIV 241	Reinforced Concrete Design-I	3	2	-	2	4	CIV 112 + CIV 121
CIV 242	Reinforced Concrete Design-II	3	2	-	3	5	CIV 241 + CIV 213
CIV 251	Geology and Geotechnical Engineering	3	2	1	2	5	CIV 112
CIV 252	Geotechnical Engineering	3	2	-	3	5	CIV 251
CIV 273	Surveying-III	2	1	-	3	4	CIV 172
CIV 336	Sanitary Engineering	3	2	-	3	5	CIV 133
CIV 343	Reinforced Concrete Design-III	3	2	-	3	5	CIV 242
CIV 353	Foundation Design-I	3	2	-	3	5	CIV 242 + CIV 252
CIV 474	Transportation and Roads Engineering	3	2	-	2	4	CIV 252
ARC 123	Building Construction	2	1	-	3	4	EMP 051
EMP 113	Probability and Statistics	3	2	2	-	4	EMP 012
EMP 215	Differential Equations and Numerical Analysis	3	2	2	-	4	EMP 012
Total		**67**	**43**	**7**	**59**	**109**	

Major Requirements

The major specialty requirements of the Structural Engineering Track of the Civil Engineering consist of 46 credits of total 160credits), which are satisfied by completing Seventeen (17) courses:

1- Twelve (12) Compulsory Applied Engineering and Design Courses equivalent to 31 credits as listed in table 17.a.
2- Five (5) Elective Applied Engineering and Design Courses equivalent to 15 credits as listed in table 17.b.

Table 17.a: Compulsory Courses of Major Requirements: Structural Engineering Track (31 credits of total 160 credit).

Code	Course Title	Credit Hours	Contact Hours				Prerequisites
			L	T	L/P	TT	
CIV 315	Matrix Structural Analysis	3	2	-	2	4	CIV 214
CIV 316	Structural Dynamics	3	2	1	2	5	CIV 315
CIV 335	Design of Irrigation Structures	2	1	-	3	4	CIV 234 + CIV 242
CIV 344	Reinforced Concrete Design-IV	2	1	-	3	4	CIV 343
CIV 361	Steel Structures Design-I	3	2	-	3	5	CIV 214
CIV 362	Steel Structures Design-II	3	2	-	3	5	CIV 361
CIV 401	Graduation Project-I	2	1	-	3	4	115 CH
CIV 402	Graduation Project-II	3	1	-	6	7	CIV 401
CIV 445	Special Topics in Concrete Design	3	2	-	2	4	CIV 344
CIV 454	Foundation Design-II	2	1	-	3	4	CIV 353
CIV 463	Design of Steel Bridges	3	2	1	2	5	CIV 362
CIV 481	Quantity Surveying and Cost Engineering	2	1	-	3	4	CIV 242
Total		**31**	**18**	**2**	**35**	**55**	

Table 17.b: Elective Courses of Major Requirements: Structural Engineering Track (15 Credits Hours of total 160 credits).

Code	Course Title	Credit Hours	Contact Hours				Prerequisites
			L	T	L/P	TT	
Pool of Structural Engineering Elective Courses (CIV 3E* (3 CH))							
CIV 323	Modern Building Materials	3	2	-	2	4	CIV 222 + CIV 241
CIV 345	Temporary Structures and Form Work Design	3	2	-	2	4	CIV 242
CIV 354	Geotechnical Site Characterization	3	2	-	2	4	CIV 252
CIV 363	Behavior of Steel Structures	3	2	-	2	4	CIV 361
Pool of Structural Engineering Elective Courses (CIV 4E* (12 CH))							
CIV 416	Computer Aided Structural Design	3	2	-	2	4	CIV 343 + CIV 353
CIV 417	Earthquake Engineering	3	2	-	2	4	CIV 316
CIV 418	Finite Element Method	3	2	-	2	4	CIV 315
CIV 419	Special Topics in Structural Analysis	3	2	-	2	4	CIV 316
CIV 424	Repair and Strengthening of Structures	3	2	-	2	4	CIV 222 + CIV 242
CIV 425	Special Types of Concrete	3	2	-	2	4	CIV 222

CIV 446	Masonry Structures	3	2	-	2	4	CIV 343
CIV 447	Design of Concrete Bridges	3	2	-	2	4	CIV 344
CIV 455	Ground Improvement	3	2	-	2	4	CIV 353
CIV 456	Computer Applications in Geotechnical Engineering	3	2	-	2	4	CIV 353
CIV 464	Steel Structures Design-III	3	2	-	2	4	CIV 362
CIV 465	Construction of Steel Structures	3	2	-	2	4	CIV 362