

**BACHELOR PROGRAM**

**ENVIRONMENTAL  
ENGINEERING**

**2014-2015**

# STUDY PLAN FOR BACHELOR OF ENVIRONMENTAL ENGINEERING

UNIVERSITY OF NIZWA													
BACHELOR IN ENVIRONMENTAL ENGINEERING													
C – Credit Hours, L – Credit Lecture, P – Credit Practical													
<b>Y E A R 1</b>	<b>SUMMER</b>		<b>CODE</b>	<b>COURSE</b>			<b>C</b>	<b>L</b>	<b>P</b>				
			MATH116	Pre Calculus			4	3	1				
			ENGL150	English Language I			3	3	0				
						<b>7</b>	<b>6</b>	<b>1</b>					
	<b>FALL</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	<b>SPRING</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	
		ENGN101	Introduction to Engineering	2	2	0		MATH212	Calculus-II	3	2	1	
		MATH211	Calculus I	4	3	1		ENGN103	Engineering Drawing	2	1	1	
		ENGL152	English Language II	3	3	0		CHEM107/L	Fundamentals of chemistry	4	3	1	
		COMP101/L	Computer Skills	3	2	1		HIST150	Islamic Civilization	3	3	0	
		PHYS101/L	Physics-I	4	3	1		CIVL211	Statics	3	3	0	
			<b>16</b>	<b>13</b>	<b>3</b>				<b>15</b>	<b>12</b>	<b>3</b>		
<b>Y E A R 2</b>	<b>SUMMER</b>		<b>CODE</b>	<b>COURSE</b>			<b>C</b>	<b>L</b>	<b>P</b>				
			STAT105	Statistics for Engineering			3	2	1				
			ENGL155	Communication Skills			3	3	0				
						<b>6</b>	<b>5</b>	<b>1</b>					
	<b>FALL</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	<b>SPRING</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	
		MATH312	Differential Equations for Engineers	3	2	1		ARAB100	Arabic Language-I	3	3	0	
		CIVL215	Civil Engineering Drawing	2	0	2		CIVL213	Fluid Engineering Mechanics	3	2	1	
		CIVL212	Civil Engineering Materials	3	2	1		CIVL241	Environmental Engineering	3	3	0	
		CIVL216	Dynamics	2	2	0		CIVL214	Geomatic Engineering	3	2	1	
		CIVL221	Solid Mechanics	3	3	0		CIVL321	Structural Analysis-I	3	2	1	
			<b>16</b>	<b>12</b>	<b>4</b>				<b>15</b>	<b>12</b>	<b>3</b>		
<b>Y E A R 3</b>	<b>SUMMER</b>		<b>CODE</b>	<b>COURSE</b>			<b>C</b>	<b>L</b>	<b>P</b>				
			ARAB101	Arabic Language-II			3	3	0				
			COMP151L	Introduction to Algorithm & Programming			4	3	1				
						<b>7</b>	<b>6</b>	<b>1</b>					
	<b>FALL</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	<b>SPRING</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	
		CIVL332	Geotechnical Engineering I	4	3	1		CIVL431	Geotechnical Engineering II	3	3	0	
		CIVL342	Hydrology & Hydraulics	3	3	0		CIVL441	Water and Wastewater Engineering	3	2	1	
		ENVE412	Fundamental of Air Pollution Engineering	3	3	0			College Elective	3	3	0	
		ENVE411	Energy and Environment	3	3	0		ENVE413	Environmental, Law & Regulations	3	3	0	
		CIVL323	Structural Design-I	3	3	0		BIOL101	Biology I	4	3	1	
			<b>16</b>	<b>15</b>	<b>1</b>				<b>16</b>	<b>14</b>	<b>2</b>		
<b>Y E A R 4</b>	<b>SUMMER</b>		<b>CODE</b>	<b>COURSE</b>			<b>C</b>	<b>L</b>	<b>P</b>				
			ENGN333	Industrial training			2	0	2				
						<b>2</b>	<b>0</b>	<b>2</b>					
	<b>FALL</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	<b>SPRING</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	
		ENVE422	Wastewater Treatment Process Design	3	3	0		ENVE431	Design Project	2	0	2	
		ENVEXXX	Technical elective-I	3	3	0		ENVEXXX	Technical elective-III	3	3	0	
		ENVEXXX	Technical elective-II	3	3	0		ENVEXXX	Technical elective-IV	3	3	0	
		ENVE432	Final Year Project-I	2	0	2		ENVEXXX	Technical elective-V	3	3	0	
		CIVL463	Project Management	2	2	0		ENVE433	Final Year Project II	4	0	4	
			<b>17</b>	<b>14</b>	<b>3</b>				<b>15</b>	<b>9</b>	<b>6</b>		
									<b>Total No. of Credit</b>			<b>148</b>	

## Curriculum for Bachelor in Environmental Engineering

**Minimum Number of Credits for Graduation in this degree plan = 148**

No.	Course Code	Course	Credit	Pre-requisite
<b>University Requirements = 21 Credits</b>				
1	ARAB100	Arabic Language I	3(3+0)	None
2	ARAB101	Arabic Language II	3(3+0)	ARAB100
3	COMP101/L	Computer Skill	3(2+1)	Comp-A, Comp-B (Digital literacy)
4	ENGL150	English Language I	3(3+0)	None
5	ENGL152	English Language II	3(3+0)	ENGL150
6	ENGL155	Communication Skill	3(3+0)	ENGL152
7	HIST150	Islamic Civilization	3(3+0)	None
<b>University Elective = 3 Credits</b>				
<b>College Requirements = 18 Credits</b>				
1	COMP151/L	Introd. to Algorithm & Programming	4(3+1)	COMP101/L
2	ENGN101	Introduction to Engineering	2(2+0)	MATH116
3	ENGN103	Engineering Drawing	2(1+1)	None
4	ENGN333	Industrial Training	2(0+2)	110 credits
5	MATH116	Pre Calculus	4(3+1)	None
6	MATH211	Calculus I	4(3+1)	MATH116
<b>College Elective = 3 Credits</b>				
<b>Department Requirement: Core Courses = 88 Credits</b>				
No.	Code	Course	Credit	Pre-Requisite
1.	MATH212	Calculus II	3(2+1)	MATH211
2.	MATH312	Differential Equations for Engineers	3(2+1)	MATH212
3.	STAT105	Statistics for Engineering	3(2+1)	MATH211
4.	CHEM107/L	Fundamentals of Chemistry	4(3+1)	None
5.	PHYS101/L	General Physics- I	4(3+1)	MATH116
6.	BIOL101	Biology- I	4(3+1)	None

7.	CIVL211	Statics	3(3+0)	PHYS101/L
8.	CIVL212	Civil Engineering Materials	3(2+1)	CHEM107 /L,CIVL211
9.	CIVL214	Geomatic Engineering	3(2+1)	ENGN101,MATH211
10.	CIVL215	Civil Engineering Drawing	2(0+2)	ENGN103
11.	CIVL216	Dynamics	2(2+0)	CIVL211
12.	CIVL221	Solid Mechanics	3(3+0)	CIVL211,CIVL212
13.	CIVL321	Structural Analysis- I	3(2+1)	CIVL 221, CIVL216,MATH211
14.	CIVL323	Structural Design- I	3(3+0)	CIVL321,CIVL212 CIVL215
15.	CIVL332	Geotechnical engineering- I	4(3+1)	CIVL221+MATH212
16.	CIVL431	Geotechnical engineering- II	3(3+0)	CIVL332 + MATH312
17.	CIVL213	Fluid Engineering Mechanics	3(2+1)	MATH211,CIVL211
18.	CIVL241	Environmental Engineering	3(3+0)	CHEM107/L,PHYS101/L
19.	CIVL342	Hydrology & Hydraulics	3(3+0)	CIVL213+MATH212
20.	CIVL441	Water and Wastewater Engineering	3(2+1)	CIVL241
21.	CIVL461	Project Management	2(2+0)	ENVE413
22.	ENVE411	Energy and Environment	3(3+0)	CIVL241
23.	ENVE412	Fundamental of Air Pollution Engineering	3(3+0)	CIVL241
24.	ENVE413	Environmental Law & Regulations	3(3+0)	CIVL241,ENVE411
25.	ENVE421	Water Treatment Principles & Design	3(3+0)	CIVL441
26.	ENVE422	Wastewater Treatment Process Design	3(3+0)	CIVL441 &BIOL101
27.	ENVE423	Water and Wastewater Lab	1(0+1)	CIVL441
28.	ENVE431	Design Project	2(0+2)	Final Year
29.	ENVE432	Final Year Project I	2(0+2)	Final year
30.	ENVE433	Final Year Project II	4(0+4)	ENVE432
<b>Department Technical Electives: Minor Specialization = 15 Credits</b>				
1	CIVL543	Advanced Wastewater Engineering	3(3+0)	CIVL441/L
2	ENVE521	Solid & Hazardous Waste Engineering	3(3+0)	CIVL441/L
3	ENVE522	Water Quality Management & Control	3(3+0)	CIVL441/L
4	ENVE523	Industrial Wastewater Treatment	3(3+0)	ENVE421+ENVE422
5	ENVE524	Hazardous Waste Site Remediation	3(3+0)	CIVL241
6	ENVE511	Design of Environmental Engineering System	3(3+0)	CIVL241
7	ENVE512	Environmental Risk Assessment	3(3+0)	ENVE413
8	ENVE513	Advanced Air Pollution Engineering	3(3+0)	ENVE412
9	ENVE514	Green Engineering	3(3+0)	CIVL241

10	ENVE515	Design of Air Pollution Control	3(3+0)	ENVE412
11	ENVE516	Environmental Informatics	3(3+0)	CIVL241
12	ENVE517	Environmental Chemistry and Microbiology	3(3+0)	CHEM107/L,BIOL101/L
13	ENVE518	Noise Pollution and Vibration Control	3(3+0)	CIVL241
14	ENVE519	Environmental Management System	3(3+0)	CIVL241
15	CIVL534	Dam Design	3(3+0)	CIVL431,CIVL342

**Elective Courses (Minor Specialization) Bachelor of Environmental Engineering**

<b>AIR POLLUTION AND CONTROL ENGINEERING</b>									
<b>Student select 15 credits for Minor Specialization</b>									
<b>First Semester</b>					<b>Second Semester</b>				
<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>
ENVE512	Environmental Risk Assessment	3	3	0	ENVE511	Design of Environmental Engineering System	3	3	0
ENVE513	Advanced Air Pollution Engineering	3	3	0	ENVE514	Green Engineering	3	3	0
ENVE515	Design of Air Pollution Control	3	3	0	ENVE518	Noise Pollution and Vibration Control	3	3	0
ENVE516	Environmental Informatics	3	3	0	ENVE519	Environmental Management System	3	3	0

<b>WATER AND WASTEWATER ENGINEERING</b>									
<b>Student select 15 credits for Minor Specialization</b>									
<b>First Semester</b>					<b>Second Semester</b>				
<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>	<b>CODE</b>	<b>COURSE</b>	<b>C</b>	<b>L</b>	<b>P</b>
ENVE512	Environmental Risk Assessment	3	3	0	CIVL543	Advanced Wastewater Engineering	3	3	0
ENVE516	Environmental Informatics	3	3	0	ENVE511	Design of Environmental Engineering System	3	3	0
ENVE517	Environmental Chemistry and Microbiology	3	3	0	ENVE514	Green Engineering	3	3	0
ENVE522	Water Quality Management & Control	3	3	0	ENVE519	Environmental Management System	3	3	0
ENVE523	Industrial Wastewater Treatment	3	3	0	CIVL534	Dam Design	3	3	0

**SOLID WASTE MANAGEMENT**  
**Student select 15 credits for Minor Specialization**

First Semester					Second Semester				
CODE	COURSE	C	L	P	CODE	COURSE	C	L	P
ENVE512	Environmental Risk Assessment	3	3	0	ENVE511	Design of Environmental Engineering System	3	3	0
ENVE516	Environmental Informatics	3	3	0	ENVE514	Green Engineering	3	3	0
ENVE521	Solid & Hazardous Waste Engineering	3	3	0	ENVE519	Environmental Management System	3	3	0
ENVE524	Hazardous Waste Site Remediation	3	3	0					