

ثالثاً : تخصص هندسة البيئة :

الفصل الدراسي الأول					
عدد الوحدات	عدد الساعات			الدرس	الرمز
	تطبيقي	عملي	نظري		
3	-	-	3	محطات معالجة	ه.مد 2135
3	-	-	3	نفايات صلبة	ه.مد 2235
2	1	-	2	إدارة بيئية	ه.مد 2335
3	-	-	3	مطروحات صناعية	ه.مد 2435
2	1	-	2	تحليلات عددية متقدم	ه.مد 2535
1	1	-	1	لغة إنكليزية	ه.مد 635
14	3	-	14	المجموع	
الفصل الدراسي الثاني					
3	-	2	2	كيمياء بيئية و مايكروبايولوجي	ه.مد 2635
3	-	-	3	تلوث الهواء	ه.مد 2735
3	-	-	3	تلوث المياه	ه.مد 2835
2	1	-	2	مواضيع منتخبة	ه.مد 2935
1	1	-	1	لغة إنكليزية	ه.مد 635
12	2	2	11	المجموع	

وحدات الفصلين الأول والثاني = $14 + 12 = 26$

وحدات الفصلين الثالث والرابع (الأطروحة) = 10

مجموع الوحدات = 36

M .Sc .Courses : Environmental Engineering

First Semester	Code	Subject	Theory	Lab	Tut	units
	Ci.En.2135	Treatment Plants	3	-	-	3
	Ci.En.2235	Solid Waste	3	-	-	3
	Ci.En. 2335	Environmental Management	2	-	1	2
	Ci.En. 2435	Industrial Wastes	3	-	-	3
	Ci.En. 2535	Advanced Numerical Analysis	2	-	1	2
	Ci.En. 635	Technical English Language	1	-	1	1
	Total			14	-	3
Second Semester	Code	Subject	Theory	Lab	Tut	units
	Ci.En. 2635	Environmental Chemistry and Microbiology	2	2	-	3
	Ci.En. 2735	Air Pollution	3	-	-	3
	Ci.En.2835	Water Pollution	3	-	-	3
	Ci.En. 2935	Selective Topics	2	-	1	2
	Ci.En. 635	Technical English Language	1	-	1	1
	Total			11	2	2

Units of 1st and 2nd Term = 26

Units of 3rd and 4th Term (Thesis) = 10

Total = 36 Unit

M.Sc. Courses : Environmental Engineering

First Semester

Ci.En.2135 Treatment Plants

Basic Design Consideration For Wastewater Treatment Facilities , Wastewater Characteristics , Grit Removal , Primary Sedimentation , Biological Treatment , Disinfection , Sources of Sludge and Thickener Design , Sludge Stabilization , Sludge Conditioning and Dewatering , Plant layout , Yard Piping and Hydraulic Profile , Water Treatment Plants (Sedimentation) , Water Treatment Plants(Coagulation) , Water Treatment Plants (Flocculation) , Water Treatment Plants(Disinfection) .

Ci.En.2235 Solid Waste

Types of solid wastes , Sources of solid wastes , properties of solid wastes , Solid waste management , Solid waste generation , On site handling, storage, and processing , Collection of solid wastes , Transfer and transport , Processing techniques , Ultimate disposal .

Ci.En. 2335 Environmental Management

Introduction , Model of Environmental Procedures , Environmental Management Activities , Legislations , Planning , Implementation , Environmental Regulations , Command and Control Scheme , Pollution Discharge Fees Scheme , Tradable Pollution Permits Scheme , Implementing Environmental Regulations , Environmental planning , Informational Model of Planning , ISO14000 Series , Environmental Legislations , Regulations and Techniques in Iraq .

Ci.En. 2435 Industrial Wastes

Basic knowledge and practices for industrial wastes management , Industrial wastes volume reduction methods , Industrial wastes strength reduction methods , Neutralization of industrial wastes , Equalization and proportioning of industrial wastes , Removal of suspended solids of industrial wastes , Removal of colloidal solids of industrial wastes , Removal of inorganic dissolved solids of industrial wastes , Removal of organic dissolved solids of industrial wastes, The apparel industries characteristics , The food processing industries characteristics , The materials industries characteristics , The materials industries characteristics Wood fiber industry , Chemical industries characteristics , Energy industries characteristics.

Ci.En. 2535 Advanced Numerical Analysis

Fourier analysis , Method finite differences, Eigen value problems ,finite differences for time – domain , solution of simultaneous nonlinear equations .

Ci.En. 635 Technical English Language

Second Semester

Ci.En. 2635 Environmental Chemistry and Microbiology

Definitions in environmental chemistry and ecotoxicology , Topics and terms in environmental chemistry , Instrumental analysis and methodology in environmental pollution.(Spectroscopic methods) , Organic chemistry , Major groups of toxic organic pollutants with emphasis on their methods of analysis., Monitoring of environmental pollution, pollutants water solubility, density and specific gravity, flammability,

Unpleasant and incompatibility.Light and dense non-aqueous phase liquids, environmental stories (environmental disasters), Toxicity , Hazardous wastes , Environmental Risk impact assessment , Microbiology for sanitary engineers Sanitary microbiology

Ci.En. 2735 Air Pollution

Introduction , Ambient , Air Quality , Emission Regulations , Particulate Control Equipment , Collection and Mechanical Separation , Filtration , Electrostatic precipitation , Wet Collectors , Pollutants in the Atmosphere, Stack flow and plume Rise , Plume Dispersion and Fallout , Gaseous pollutant Control , Absorption , Adsorption .

Ci.En.2835 Water Pollution

Water- a precious natural resource , Characteristics of waters and wastewaters , Sampling and analysis , Aquatic microbiology and ecology , Water quality and health , Biological oxidation of organic matter , Water pollution and its control , Water demands and wastewater flows , Introduction to treatment processes , Preliminary treatment processes , Clarification , Coagulation , Flow through porous media , Aerobic biological oxidation , Anaerobic biological oxidation , Disinfection , Chemical treatment , Sludge dewatering and disposal , Sludge dewatering and disposal .

Ci.En. 2935 Selective Topics

Introduction , Environmental Research Concepts and Procedures With Case Studies , Environmental Research Components With Case Studies , Environmental Seminar With Case Studies , Environmental planning Review Studies With Case Studies .

Ci.En. 635 Technical English Language