NTC/NCRC Approved Curriculum

Semester-wise Scheme of Studies

Semester-wise scheme of studies for the Bachelor of Energy Engineering Technology program spanning 04 years, spread over 08 semesters and encompassing 133 credit hours is presented below:

SEMESTER-I				
Suggested Course Codes	**Course Title**	**Knowledge Area/Domain**	**Credit Hrs. (Th+Lab)**	**Contact Hrs. (Th+Lab)**
ENH-111/ ENH-112	Islamic Studies / Social Ethics	Art & Humanities-I	3+0	3+0
ENE-111	Communication Skills	Expository Writing-I	3+0	3+0
ENQ-111	Calculus & Analytical Geometry	Quantitative Reasoning-I	2+0	2+0
ENN-112	Applied Physics	Natural Sciences-I	2+1	2+3
ENC-111	Information and Communication Technology	Computing-I	1+1	1+3
ENT-111	Technical Drawing and CAD	Energy Engineering Technology Foundation-I	0+2	0+6
	Subtotal		**11+4 =15**	**11+12 =23**
SEMESTER-II				
ENH-121	Pakistan Studies	Art & Humanities -II	3+0	3+0
ENQ-121	Differential Equations	Quantitative Reasoning-II	2+0	2+0
ENN-121	Applied Chemistry	Natural Sciences-II	2+1	2+3
ENT-121	Workshop Practice	Energy Engineering Technology Foundation-II	0+1	0+3
ENC-121	Computer Programming	Computing-II	1+1	1+3
ENQ-122	Linear Algebra	Quantitative Reasoning-III	2+0	2+0

ENT-212	Electrical Circuit Analysis	Energy Engineering Technology Foundation-III	2+1	2+3
	Subtotal		**12+4 =16**	**12+12 =24**
SEMESTER-III				
Course Codes	**Course Title**	**Knowledge Area**	**Credit Hrs. (Th+Lab)**	**Contact Hrs. (Th+Lab)**
ENH-211	Professional Ethics	Social Science-I	3+0	3+0
ENT-221	Instrumentation and Control	Energy Engineering Technology Breadth Core-II	2+1	2+3
ENT-222	Introduction to Energy Technology	Energy Engineering Technology Foundation-III	2+0	2+0
ENT-213	Electronic Devices and Circuits	Energy Engineering Technology Foundation-V	2+1	2+3
ENT-214	Applied Thermodynamics	Energy Engineering Technology Foundation-VI	2+1	2+3
ENT-215	Mechanics of Materials	Energy Engineering Technology Foundation-VII	2+1	2+3
	Subtotal		**13+4 =17**	**13+12 =25**
SEMESTER-IV				
ENT-221	Electrical Machines	Energy Engineering Technology Breadth Core-I	2+1	2+3
ENE-221	Technical Report Writing	Expository Writing-II	3+0	3+0
ENM-221	Project Management	Management Sciences-I	3+0	3+0
ENT-222	Health Safety and Environment	Energy Engineering Technology Foundation-VIII	1+0	1+0

ENT-223	Fluid Mechanics and Hydraulics Machinery	Energy Engineering Technology Foundation-IX	2+1	2+3
ENT-224	Power Transmission and Distribution	Energy Engineering Technology Breadth Elective-I	2+1	2+3
ENI-221	Micro-Controller Systems	Inter Disciplinary Technology Elective-I	1+1	1+3
	Subtotal		**14+4 =18**	**14+12 =26**

SEMESTER-V

Course Codes	**Course Title**	**Knowledge Area**	**Credit Hrs. (Th+Lab)**	**Contact Hrs. (Th+Lab)**
ENT-311	Solar Energy Technology	Energy Engineering Technology Depth Core-I	2+1	2+3
ENT-312	Power Plant Technology	Energy Engineering Technology Breadth Core-III	2+1	2+3
ENT-313	Fuel Processing Technology	Energy Engineering Technology Breadth Core-IV	2+1	2+3
ENT-314	Power Electronics	Energy Engineering Technology Breadth Elective-II	2+1	2+3
ENT-315	Wind Energy Technology	Energy Engineering Technology Depth Elective-I	2+1	2+3
ENT-316	Project Part-I	Energy Engineering Technology Domain Project	0+3	0+9
	Subtotal		**10+8 =18**	**10+24 =34**

SEMESTER-VI

ENM-321	Entrepreneurship	Management Sciences-II	3+0	3+0

ENT-321	Heating ventilation and air conditioning system	Energy Engineering Technology Depth Elective-II	2+1	2+3
ENT-322	Energy Audit and Management	Energy Engineering Technology Depth Core-II	2+1	2+3
ENT-323	Biomass Energy Technology	Energy Engineering Technology Depth Elective-III	2+1	2+3
ENI-321	Power System Analysis & Protection	Inter Disciplinary Technology Elective-II	1+1	1+3
ENT-324	Project Part-II	Energy Engineering Technology Domain Project	0+3	0+9
	Subtotal		**10+7 =17**	**10+21 =31**

SEMESTER-VII

Course Codes	**Course Title**	**Knowledge Area**	**Credit Hrs.** (Th+Lab)	**Contact Hrs.** (Th+Lab)
ENT-411	**Supervised Industrial Training or Course Work**	**Energy Engineering Technology Domain Industrial Training**	**16**	**40 (per Week)**
ENH-411ENM-411	Economics	Social Science-II / Management Sciences-III	2+0	2+0
ENT-412	Solar photovoltaic Technology	Energy Engineering Technology Depth Elective-IV	2+1	2+3
ENT-413	Hydropower Technology	Energy Engineering Technology Depth Elective-V	2+1	2+3
ENT-414	Smart Grid Technology	Energy Engineering Technology Depth Elective-VI	2+1	2+3
ENT-415	Geothermal and Ocean Energy	Energy Engineering Technology Depth Elective-VII	3+0	3+0

ENC-411	Machine learning	Computing-III	1+1	1+3

	Subtotal		**12+4=16**	**12+12 =24**
SEMESTER-VIII				
ENT-421	**Supervised Industrial Training (Compulsory)**	Energy Engineering Technology Domain Industrial Training	**16**	**40 (per Week)**
	Subtotal		**0+16= 16**	**0+40= 40**
Total Credit Hours & Contact Hours in Four Years (When SIT conducted in both 7th and 8th Semester)			**70+63 = 133**	**70+189=259**
Theory vs Practical with respect to Contact Hours			Theory Practical	70 (27.03%) 189 (72.97%)
Total Credit Hours & Contact Hours in Four Years (When optional courses conducted instead of SIT in 7th semester**)**			**82+51 = 133**	**82+153 =235**
Theory vs Practical with respect to Contact Hours			Theory Practical	82 (34.89%) 153 (65.11%)