B.Tech. (Energy and Environmental Engineering) – Syllabus 2011

Semester-wise distribution of Courses

S. No	Course No	Courses	Cr. Hrs
Semester I			
1.	MAT 101	Matrices, Analytical Geometry and Differential Equations	2+1
2.	COM 101	Introduction to Computer Technology	2+1
3.	PHY 101	Engineering Physics	2+1
4.	SAC 101	Principles of Analytical Chemistry	1+1
5.	AGR 121	Production Technology of Field Crops	1+1
6.	FMP 101	Manufacturing Practices	2+1
7.	AST 101	Engineering Drawing	0+1
8.	AGM 151	General Microbiology	2+1
9.	ENG 101	English for Effective Communication	0+1
10.	NSS / NCC 101	National Service Scheme/ National Cadet Corps	0+1
11.	PED 101	Physical Education	0+1
Total			**12+11=23**

Semester II			
1.	MAT 102	Vector Calculus and Complex Analysis	2+1
2.	COM 102	Programming in C^{++}	1+1
3.	AEC 101	Principles of Agricultural Economics	1+1
4.	HOR 121	Basic Horticulture	1+1
5.	AST 102	Engineering Mechanics	1+1
6.	FMP 102	Electrical Engineering	2+1
7.	FMP 103	Thermodynamics	2+1
8.	FPE 101	Heat and Mass Transfer	1+1
9.	SWE 151	Field Surveying and Leveling	2+1
Total			**13+9=22**

III Semester			
1.	MAT 201	Partial Differential Equations and Transform Theories	2+1
2.	AST 201	Strength of Materials	2+1
3.	FMP 201	Theory of machines	2+1
4.	FPE 201	Refrigeration and Air Conditioning	1+1
5.	SWE 201	Fluid Mechanics and Hydraulics	2+1
6.	ERG 251	Biochemical Engineering	1+1
7.	ERG 252	Fossil fuel engineering	1+1
8.	RSG 251	Remote sensing and GIS in environmental applications	2+1
Total			**13+8=21**

IV Semester			
1.	MAT 202	Numerical methods for engineering applications	2+1
2.	ARM 201	Fundamentals of Agri Business management	1+1
3.	FOR 211	Forest Resource Management	1+1
4.	FMP 203	Electronics and Instrumentation	2+1
5.	FMP 204	Machine Design and Computer Aided Drawing	1+2
6.	ERG 201	Heat Power Engineering	1+1
7.	AST 202	Building materials, Construction, Estimating and Costing	2+1
8.	ERG 253	Biochemical Conversion Technology	2+1
9.	SWE 251	Fundamentals of Environmental Engineering	2+0
Total			**14+9=23**

V Semester			
1.	MAT 301	Engineering Statistics	1+1
2.	NST 301	Fundamentals and Applications of Nanotechnology	1+0
3.	ERG 351	Thermochemical Conversion Technology	2+1
4.	ERG 352	Solar Energy Engineering	2+1

5.	SWE 351	Water pollution and control	1+1
6.	SWE 352	Hydrology and water resources	2+1
7.	SWE 353	Public health engineering	2+1
8.	EEE E5X	Experiential Learning	0+5
Total			**11+11=22**

VI Semester			
1.	MAT 302	Operations Research	1+1
2.	ENG 301	Soft Skills for Employability	0+1
3.	ERG 353	Power Plant Engineering	2+1
4.	ERG 354	Wind Energy Conversion Technology and Energy storage	2+1
5.	ERG 355	Energy Auditing and Management	2+1
6.	SWE 354	Waste water engineering	1+1
7.	SWE 355	Municipal solid waste management engineering	1+1
8.	SWE 356	Air pollution control Engineering	1+1
9.	EEE 351	Project work	0+2
10.	EEE 352	Study Tour	0+1
Total			**10+11=21**

VII Semester			
1.	TAM 401 / ENG 401	,yf;fpa';fspy; ntshz;ika[k; mwptpay; jkpH; gadhf;fKk; Development Education	0+1
2.	ERG 451	Energy Efficiency and Performance Assessment	2+1
3.	ERG 452	Emerging Alternate Energy Conversion Systems	2+1
4.	SWE 451	Industrial Waste Treatment and Management	2+1
5.	SWE 452	Environmental Impact Assessment - Engineering	1+1
6.	AEC 451	Environmental Impact Assessment – Economics	1+0
7.	EEE 451	Project	0+2

8.	EEE 452	Study tour	0+1
9.	EEE E5X	Experiential Learning	0+5
Total			**8+13=21**

VIII Semester			
1.	EEE 453	Industry and institutional educational tour (15 days)	0+1
2.	EEE 454	Rural energy and environmental Programme (10 days)	0+1
3.	EEE 455	Industrial internship programme (80 days)	0+5
Total			**0+7=7**

Experiential Learning

Course. No.	**Course**	**Credit Hours**
i. Energy Technologies		
ERG E51	Biomass Power Generation Technologies	0+5
ERG E52	Energy Substitution and Management	0+5
ii. Environmental Technologies		
SWE E51	Pollution Management Engineering	0+5
SWE E52	Waste Management Engineering	0+5

Summary of semester wise distribution of credits

Sem.	**No. of Courses**	**Credit Hours**	**Total**
I	11	12 + 11	23
II	9	13 + 9	22
III	8	13 + 8	21
IV	9	14 + 9	23
V	8	11 +11	22
VI	10	10 + 11	21
VII	9	8 + 13	21
VIII	3 (RAWE)	0 + 7	7
Total	**62 + 3 (RAWE) + 2 (Exp. Learning)**		**160**