

TAMIL NADU AGRICULTURAL UNIVERSITY

**B.Tech. (Energy and Environmental
Engineering)**

Syllabi (2007-11)

**Agricultural Engineering College and Research Institute
Coimbatore-641003**

B.Tech (Energy and Environmental Engineering)

Distribution of courses

S.No	Course	Courses	Cr. Hrs
I. Basic Science Courses			
1.	MAT 121	Matrices, Analytical Geometry and Differential Calculus and Differential Equations	2+1
2.	MAT 122	Multiple Integrals, Vector Calculus, Complex Analysis and Laplace Transforms	2+1
3.	MAT221	Partial Differential Equations, Fourier series, Boundary Value Problems, Fourier and Z – Transforms	2+1
4.	MAT222	Numerical methods for engineering applications	1+1
5.	MAT321	Engineering statistics and operational research	2+1
6.	PHY 121	Engineering Physics	2+1
7.	FPE 121	Applied Chemistry	2+1
8.	ENG 121	English speaking and writing skills (Off class mode)	0+2
9.	ENG 122	Soft skills (Off class mode)	0+1
10.	New	Nanotechnology and its applications	1+1
11.	NSS / NCC 111	National Service Scheme/ National Cadet Corps	0+1
12.	PED 111	Physical education	0+1
Total			14+13

II. Computer Science Courses			
1.	COM 121	Programming in C and C++	2+1
2.	COM 122	Visual Basic and SQL	2+1
3.	FMP 321	Design of machine elements and computer aided machine drawing	2+1
Total			6+3

III. Basic and Agricultural Science Courses			
1.	AGM 221	General Microbiology	2+1
2.	ENS 281	Environmental microbiology and occupational health hazards	1+1
3.	AGR 121	Crop Production Technology	2+1
4.	SAC 381	Remote sensing and GIS in environmental applications (Team teaching – SSAC, SWCE and ENS)	2+1
5.	ARM 3xx	Agribusiness management	2+1
Total			9+5

IV. Basic Engineering courses			
1.	FMP 121	Thermal Engineering	2+1
2.	FMP 122	Electrical Engineering	2+1
3.	FMP 221	Manufacturing Practice	1+1
4.	FMP 223	Electronics and Instrumentation	2+1
5.	APE 221	Heat transfer, refrigeration and air conditioning	2+1
6.	AST 121	Engineering Drawing	0+1
7.	AST 221	Strength of Materials	2+1
8.	SWC 121	Fluid Mechanics and Hydraulics	2+1
9.	SWC 281	Surveying and leveling	1+1
10.	ERG 283	Fuel, combustion and engines (Team teaching Bioenergy & FMP)	2+1
Total			16+10
V. Energy Engineering courses			
1.	ERG 281	Bio chemical engineering and applications	1+1
2.	ERG 282	Bio and thermo chemical conversion	2+1
3.	ERG 381	Solar energy conversion	2+1
4.	ERG 382	Energy auditing and management	2+1
5.	ERG 481	Energy efficiency and performance assessment of equipment and utility system	1+1
6.	ERG 482	Wind energy conversion	2+1
Total			10+6
VI. Environmental Engineering courses			
1.	SWC 282	Principles of Hydrology	2+1
2.	SWC 381	Water & Air pollution transport process and Management	3+1
3.	SWC 382	Public health engineering	2+1
4.	SWC 383	Municipal and Industrial waste treatment & management engineering	2+1
5.	SWC 481	Environmental impact assessment (Team teaching SWCE&AEC)	2+1
Total			11+5
VII. Energy and environmental engineering work experience			
1.	EEE 381	Project work	0+2
2.	EEE 481	Project work	0+2
3.	EEE 482	Industry and Institutional educational tour (14+14 days)	0+1
3.	EEE 483	Rural energy and environmental Programme (21 days)	0+1
4.	EEE 484	Industrial internship programme (56 days)	0+3
Total			0+9

CAFETERIA COURSES – 55 credits		
Courses offered in V Semester		
i. Renewable energy sources		
ERGC81	Hydrogen production and fuel cell	2+1
ERGC82	Energy from solid and liquid wastes	2+1
ERGC83	Biofuel Production Technology	2+1
ERGC84	Cogeneration and waste heat recovery system	1+1
Sub total (4 courses)		7+4
ii. Land and water ecosystems, and computer		
SWC C81	Land degradation and environment	2+1
SWC C82	Coastal eco-system engineering	2+1
SWC C83	Drought and disaster management	2+1
Sub total (3 courses)		6+3
Courses offered in VII Semester		
iii. Conventional energy and energy management		
ERG C85	Thermal and nuclear energy technologies	2+1
ERG C86	Alternate electric conversion systems	1+1
FMP C81	Power plant engineering	2+1
FMP C82	Waste handling and treatment machinery	1+1
Sub total (4 courses)		6+4
iv. Environmental control systems		
SWC C84	Carbon sequestration and Clean Development Mechanism	2+1
SWC C85	Industrial hygiene and applications	2+1
SWC C86	Environmental control structures for crop production & livestock	2+1
AGR C81	Agricultural & forestry production system for environmental control	1+1
Sub total (4courses)		7+4
Grand total		26+15

Summary of semester wise distribution of credits – B.Tech (EEE)

Sem.	No. of Courses	Credit Hours	Total
I	6 + 2 (RAWE)	10 + 9	19
II	7	9 + 7	16
III	7	11 + 7	18
IV	7	12 + 7	19
V	3 + Cafeteria	7 + 3 + 9 (Cafeteria)	19 or above
VI	6 + 1(RAWE)	12 + 8	20
VII	3 + 1 (RAWE)+ Cafeteria	5 + 5 + 9 (Cafeteria)	19 or above
VIII	3 (RAWE)	0 + 5	5
Total	39 + 7 (RAWE) + Cafeteria (Min 6)	66 + 51+ 18 (Cafeteria)	135