

**Certificate Course on Renewable Energy and Its Applications**  
**March-April, 2006**  
**Course Plan**

No	Lecture Title	Teacher's Name
1	Energy Scenario in the world , Renewable Energy Sources: Bangladesh perspective	Prof. Shahida Rafique Dept. of APECE, Dhaka University
2	Introduction to Solar energy (Extraterrestrial, Global, Diffuse, Beam, Spectrum, Tilted surface radiation etc)	Prof. Md. Abdur Rashid Sarkar Dept. of ME, BUET
3	Meteorological measurement of climatological data and Storage (Sunshine duration, Cloud cover, Temp, Rainfall, Wind speed/ Dir)	Dr. Samarendra Karmakar Bangladesh Meteorological Dept.
	Solar radiation measurement and estimation from climatological data (Instruments used, estimation of radiation where data is not available)	Mr. Himangshu Ranjan Ghosh RERC, Dhaka University
4	How solar cells turns sunlight into electricity/photovoltaic effect Solar Home System (Standalone/ Grid connected) and components	Prof. Rezaul Karim Mazumder Dept. of APECE, Dhaka University
5	Solar thermal systems (Solar water heater, Air conditioning, cooker, dryer) Passive house heating and cooling	Prof. N.C. Bhowmik Dept. of APECE, Dhaka University
6	Selective coating Design of a Solar Water Heater, Cooker and Dryer	Prof. N.C. Bhowmik Dept. of APECE, Dhaka University
7	Practical (Photovoltaics)	Mr. Himangshu Ranjan Ghosh
8	Green House Gas (Definition, Sources, Scope to mitigate and Trading)	Prof. Muhammad Ibrahim Physics Dept., Dhaka University
	Physics of Solar Cell (Materials used, ingot, wafer, grid, cell, module, panel)	Prof. Jalalur Rahman Dept. of APECE, Dhaka University
9	Introduction to wind energy (wind speed, elevation, surface roughness, Weibull parameters, wind atlas, relation of wind speed with power)	Prof. Subrata Kukar Aditya Dept. of APECE, Dhaka University
10	Wind turbines (Working principle, Choice of a turbine for a wind data) Wind farm installation and considerations	Prof. M. Mahbubul Alam Dept. of ME, BUET
11	Introduction to biogas Design of a biogas plant	Dr. M. Eusuf BCAS, Dhaka
12	Introduction to Biomass Down draft, Improved Cooker, briquette technology	Dr. M. Eusuf BCAS, Dhaka
13	Practical (Solar Thermal)	Mr. Himangshu Ranjan Ghosh
14	Introduction to concentrators and applications Introduction to hybrid system (solar, wind, diesel )	Prof. Saiful Haque INFS, Dhaka University
15	Introduction RETScreen (pre feasibility analysis of a Solar Home System)	Mr. Shamim Kaiser Daffodil University, Dhaka
16	Software Handling and project distribution	Mr. Shamim Kaiser
17	Introduction to HOMER	Mr. Shamim Kaiser

18	Energy scenario in Bangladesh Project report presentation	Prof. M. Hussain
19	Field visit in BCSIR, Dhaka	Mr. Himangshu Ranjan Ghosh