

Course Plan				
Course code	Course name	L T P	CH	Credit
EN 712	Decentralized Generation Systems	3 0 0	3	3

Topics	hours	
Decentralized versus central station generation	1	
Traditional power systems	5	
The electric utility grid – Generation, transmission & distribution		
Thermal, hydro and nuclear power plants		
Governor control & VAR management		
Load curve analysis	1	
Mini and micro gas turbine generators	1	
Solar thermal power generation	1	
Utility scale photovoltaic generation	1	
PV system design for off-grid generation – schemes & sizing	3	
Wind resource assessment – wind regime modelling & computation of energy potential, generation & performance metrics	3	
Wind- powered generation – WTG topologies & operation	3	
Biomass based electricity generation	1	
DG-Grid interconnection issues	1	
Generation control of DG – PV and wind	2	
Demand and generation forecasting	1	
Distributed energy storage – systems and sizing	1	
Economic analysis of DG – payback, CBR & ALCoE	4	
Microgrids – EMS, Protection, monitoring & standards	4	
Communication in smart microgrids	3	
Total	36	