PIPM 7002	Power Sector Structure & Functioning	L	T	P	C
Version 1.0		3	0	0	3
Pre-requisites/Exposure	Science Graduate				
Co-requisites	Good Command in MS Word and MS Powerpoint				

Course Objectives

1. A basic introduction to Indian Power Sector.
2. An understanding of the relevance of it in global percepective..
3. Electricity Act and policies, rules & regulatory issues.
4. Tariff regulations and calculations –basic understanding.
5. Reforms and restructuring in Indian power sector.
6. Knowledge about intelligent and Strategic issues related to growth & development of Indian Power Business.

Course Outcomes

On completion of this course, the students will be able to

CO1: Understand issues, opportunities & challenges in power sector regulations globally including fundamental policy, economics and overall basic concepts.
CO2: Develop skills required for power planning & formulation of regulations.
CO3: To analyse Power sector framework in India and its comparison globally.
CO4: Learn processes for execution and control of regulation in power business in India.
CO5: Appreciate and evaluate the power sector in India for betterment i.e. recommendation for amendments if any

Catalog Description

The purpose of this course is to introduce to students of fundamental understanding of the Indian Power Sector as well as its functioning – both in public and private sector. The course will help the students to understand the power business processes along with its relativeness with other countries.

Course Content

Unit I: 7.5 lecture hours

Power Scenario in India, Growth & Development of Power Sector in India – Past, Present & Future, Indian Power Sector Structure

Unit II: 6 lecture hours

Global Power Scenario, Types of Business in Power & Energy in different countries, Case Study – Power Business in China & Argentina

Unit III: 9 lecture hours

Electricity Act 2003, Electricity Policy 2005, Tariff Policy 2006 + Other Policies, Energy Conservation Act 2001, IPDS and R-APDRP, New initiatives in Rural Electrification, Supply & New Business, FRP and other Systems

Unit IV: 9 lecture hours

Tariff Regulations in Central & States, Tariff Calculation for Conventional power plants, Tariff Calculation for Non-Conventional power plants, Reforms in Generation, Reforms in Transmission, Distribution Reforms, Proposed Amendments in EA -2003

Unit V: 4.5 lecture hours

Power Business in India, Power Sector Functioning Globally, Power Business – Case Study

Text Books and Journals

1. Power Sector, Technology, Regulation & Functioning

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	Presentation/Assignment/Projects etc	ESE
Weightage (%)	50	50

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	Course Outcomes (COs)	**Mapped Programme Outcomes**
CO1	Understanding the issues & challenges in the Urban Development Sector	PO 1,2, ,4,7,8,9,10, 11,12,13, 14
CO2	To develop skills required for Urban Infrastructure planning & formulation.	PO 1,2, 3, 7,8,9,10, 11,14
CO3	Understand optimization techniques for Urban Infrastructure Planning & Pricing.	PO 1,2, 3, 8,9,10, 11, 12,13,14
CO4	Learn the processes for Urban Infrastructure project execution and control.	PO 4,5,6, 8,7, 12,13, 14
CO5	To learn the contracting process as applied in Urban Infrastructure projects	PO 1,2, 3, 4,8,10, 11, 13,14

CourseOutcomes	CO 1	CO 2	CO 3	CO 4	CO5
PO 1	3	3	3	2	3
PO 2	3	3	3	2	3
PO 3	2	3	3	2	3
PO 4	3	2	2	3	3
PO 5	2	2	2	3	2
PO 6	2	2	2	3	2
PO 7	3	3	2	3	2
PO 8	3	3	3	3	3
PSO 9	3	3	3	2	2
PSO 10	3	3	3	2	3
PSO 11	3	3	3	2	3
PSO 12	3	2	3	3	2
PSO 13	3	2	3	3	2
PSO 14	2	3	3	3	2

		Students will demonstrate strong conceptual knowledge in fuel management, power generation, transmission, distribution, trading, energy management, financing and regulation, and sustainable development.	Students will demonstrate effective understanding of functioning of power sector.	Students will demonstrate analytical skills in identification and resolution of issues pertaining to fuel management, power generation, transmission, distribution, trading, energy management, financing and regulation, and sustainable development.	Students will exhibit the ability to integrate technical, economic, social and regulatory frameworks for power sector planning and resource management.	Students will exhibit deployable skills pertinent to the power sector.	Students will be able to develop and evaluate alternate managerial choices and identify optimal solutions.	Students will demonstrate effective application capabilities of their conceptual understanding to infrastructure planning, development and management.	Students will be able to exhibit effective decision-making skills, employing analytical and critical thinking ability for planning, development and management of soft and hard infrastructure.	Students will demonstrate effective oral and written communication skills in the professional context.	Students will be able to work effectively in teams and demonstrate team-working capabilities.	Students will exhibit leadership and networking skills.	Students will demonstrate sensitivity towards ethical and moral issues and have ability to address them in the context of urban planning, development and management including cost effective financing and good governance.	Students will demonstrate employability traits in line with the needs of changing hard and soft urban infrastructure sector.
Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO 11	PO12	PO13

PIPM 7002	Power Sector Structure & Functioning	2	3	3	2	3	1	1	2	1	1	1	1	3

1=weakly mapped
2= moderately mapped
3=strongly mapped

Model Question Paper

Name: **Enrolment No:**	UPES

Course: Power Sector Structure & Functioning

Programme: MBA PM **Semester: ODD**
Time: 03 hrs. **Max. Marks:100**

Instructions:
Section A (each carrying 2 marks); Attempt all questions from **Section B** (each carrying 5 marks)**.** Any **Two Questions** from **Section C** (carrying 15 marks)**.** Case Study **Section D (** 30 Marks)

Section A ( )
Define the following

1	Explain power system as per section 2 of the Electricity Act 2003.	**[2]**	**CO1**
2	What is the full form of RfP, NIT & RfQ?	**[2]**	**CO5**
3	Define open access and cross subsidy.	**[2]**	**CO2**
4	Explain "Distribution and supply" concept in Indian Power Sector?	**[2]**	**CO2**
5	What is current generation and transmission capacity in India?	**[2]**	**CO3**
6	What do you mean by Reactive power? How it is compensated?	**[2]**	**CO1**
7	Name power secretary of Govt. of India and state of Uttrakhand.	**[2]**	**CO2**
8	What is fuel charge component for a thermal plant?	**[2]**	**CO4**
9	Give full form of FSA and ATE.	**[2]**	**CO4**
10	What is ABT? Explain UI charge.	**[2]**	**CO2**
	SECTION B (Attempt all Questions**)**		

11	What are changes made in the bidding-criteria of the UMPP recently? Name two new UMPP for which RfQ has been issued.	**[5]**	**CO4**
12	Explain salient features of the EC Act 2001.	**[5]**	**CO2**
13.	Describe power system with a neat diagram from generation to the consumer's-end.	**[5]**	**CO5**
	What is World Bank's prescription for power reforms in the developing countries?	**[5]**	**CO1**
	SECTION C (Attempt any Two Questions)		
14.	Write in short amendments proposed in the Electricity Act 2003.	**[15]**	**CO4**
15.	Explain salient features of "Approach-paper for tariff 2014-19".	**[15]**	**CO4**
16	What are main features of new Land-Acquisition Bill passed by parliament recently?	**[15]**	**CO5**
	SECTION D (Case Study)		
	Case Study Write in short 18 parts and 185 sections of the Electricity Act 2003	**[30]**	**CO3**