Course code: ENR 112 No. of credits: 2 L-T-P: 28-0-0 Learning hours: 28 Pro-requisite course code and title (if any): NA Department: Department of Energy and Environment Course instructor(s): Prof Atul Kumar/ Prof. V Contact details: avinch bhatia Course offered in: Semester 1 Course discusses and analyse the role of energy in the development of India. The focus of the course is on the conventional energy sources & their conversion technologies as well as the environmental impacts including global climate change. Course objectives Subramanian/ Dr. Avinch Bhatia To provide the course is to develop understanding for the following: Utilization of councymous like: coal, oil if antural gas, nuclear and hydro. Environmental implications due to energy generation and use. Course contents Module Topic L T Module Topic 2 1 1 Quality of Indian coals 2 2 2 1 Quality of Indian coals 2 2 2 1 1 Overview of The course is to develop understanding or poperties 2 2 2 1 1 1 1 1 1 1 1 1 1 1	Course title	: Conventional energy and environment	tal implicatio	ons							
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Course coordinator: Dr. Aviruch Bhatia Course instructor(s): Prof Adu Kumma? Prof. V Subramanian/ Dr. Aviruch Bhatia Contract details: aviruch.bhatia@terisas.ac.in Course offered in: Semester 1 Course description The course offered in: Semester 1 Course description The course offered in: Semester 1 Course description Course offered in: Semester 1 Course objectives The course of the courses is to develop understanding for the following: • Utilization of conventional energy sources like. coal. oil & natural gas, nuclear and hydro. • • Environmental implications due to energy generation and use. Coarse contents Module Topic L T Coal Basics 2 - Coal Utilization technologies 2 - 3 Uses of coal Coal utilization technologies 2 - 3 Uses of coal Coal utilization technologies 2 - 4 Environmental Aspects and Clean Use of Coal Coal utilization technologies 2 - 3 Uses of coal Coal utilization technologies 2 - 6 - - - -	Departmen	t: Department of Energy and Environme	ent								
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	Importance of hydropower private sector participation	4							
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 Assignment 	nents/Tutorials: 20%								
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• Test 2:	15%								
• Test 3:	50%								
Learning ou	itcomes								
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 To understand the energy systems. 									
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A combination of class room interactions, tutorials, assignments and projects									
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Recommended readings									
Rao. S and Parulekar B.B., "Energy Technology". Khanna Publishers									
Bernard R C	ooper and William A Ellingson, "The Science & Technology of Coal and coal utilization" Ed	ited, ISE	3N0-						
306-41436.8, Plennwell									
Pradip Kumar Das & Hrishikesh, "Petroleum and Coal", ISBN 81-7533-042-2, MD									
Deshpande, B G, "The World Of Petroleum"									
Yadav, M S	Yadav, M S, "Nuclear Energy and Power" SBS Publishers & Distributors Pvt. Ltd.								
Jack J Fritz, "Small and Mini Hydropwer system", ISBN 0-07-022470-6, MC Graw Hill									
Keference Books									
Pruss G Miller "Coal Energy System" ISBN 0-12-407451-1 Elsevier Academic Press									
William I J	afflar Datroloum Dafining ISBN 0 87814-776-4 Doppwall								
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Small Hydropower Initiative and Private Sector Participartion, Alternate Hydro Energy Centre, IIT Roorkee Charles Simeons, "Hydropwer-The use of water as an alternate source of energy", ISBN 0 08 023269 8 Pergamon press Douglas M Considine, Energy Handbook, Mc Graw Hill Editor in Chief- Cutler J Cleveland, "Encyclopedia of Energy", Elsever Academic Press Wiley Encyclopedia Series, Energy, Technology & Environment

Websites

coal.nic.in, worldcoal.org, petroleum.nic.in, dae.gov.in npcil.nic.in, powermin.nic.in nhpcindia.com Additional information (if any) Student responsibilities

Attendance, feedback, discipline: as per university rules.

Course reviewers

- 1. Mr. Surender Pratap, Director R & D, Petroleum Conservation and Research Association (PCRA), New Delhi
- 2. Dr. Ajay Kumar Singh, Central Institute of Mining and Fuel Research, Dhanbad
- 3. Dr. Sunil Singal, Senior Scientific Officer, Alternate Hydro Energy Centre, IIT Roorkee