29/05/2007

Short Term Training Course on
" Hydro Power Engineering (Civil)" for Teachers of Polytechnics in Uttarakhand
May 31–June 04, 2007

Time / Day	0900-1015	1015-1130		1130-1200	1200-1315	1315-1430	1430-1545	1545-1600	1600-1700	
May 31, 07	Registration	Inauguration	L1(1/2) MPS		L1(2/2) MPS		L2 AK	**TEA BREAK**	L3 SNS	
June 01, 07	L4 SKS	L5 AK			L6 RPS		L7 (1/4) GCG		L7 (2/4) GCG	
June 02, 07	L7 (3/4) GCG	L7 (4/4) GCG		**TEA BREAK**	L8 AKS		L9 (1/2) NS		L9 (2/2) NS	
June 03, 07	L10 (1/4) UCC	L10 (2/4) UCC			L11 (1/2) MKS		**Visit to Chilla Power House,** MKS/SS			
June 04, 07	L10 (3/4) UCC	L10 (4/4) UCC			Test		L11 (2/2) MKS	**TEA BREAK**	L12 DKG	Valedictory Function

Lecture: CCE Lecture Room

Stay, Breakfast, Lunch & Dinner at Continuing Education Guest House

Faculty:

AK	-	Shri Arun Kumar, Head, AHEC	NS	-	Shri Narender Singh, Advisor, Rehabilitation, THDC
AKS	-	Prof. A. K Saraf, Dept. of Earth Sciences	RPS	-	Dr. R. P. Saini, SSO, AHEC
GCS	-	Dr. Girish Chand Gaur, Consultant Dehradun	SKS	-	Shri S.K. Sangal, SSO, AHEC
MKS	-	Shri M.K. Singhal, SSO, AHEC	UCC	-	Prof U.C. Chaube Professor, WRDTC
MPS	-	Dr. M. P. Sharma, SSO, AHEC	SNS	-	Shri S. N. Singh, SSO, AHEC
			SS	-	Shri S. S. Patnaik, SRF, AHEC

(M.K. Singhal)
Course Coordinator

(ARUN KUMAR)
Course Director

HYDRO POWER ENGINEERING (CIVIL)
COURSE CONTENTS

Sl. No.	*Particulars*	Contact Hours
L-1	Renewable Energy Sources: Brief idea about Solar, Wind, Bio-mass, and Small Hydro. Potential of Renewable Energy Sources in India. Advantages of Renewable Energy Sources over Conventional Energy Sources.	2
L-2	Hydropower development in India and Uttaranchal State.	1
L-3	Hydropower Development: Sources of energy, Importance of electric power. Power Plants, Different Types of Power Plants, Importance of Hydropower Plant, and Merits of Hydropower Plant over Thermal & Nuclear power plant.	1
L-4	Site Investigations and Determination of power potential of any site.	1
L-5	Layout Plan of Different Hydropower Stations.	1
L-6	Brief idea about Generators and Turbines used in Major/Small/Mini/Micro Hydropower Stations. Installation of Generators and Turbines in civil engineering point of view and their maintenance.	
L-7	Investigation and Management of Landslide: Introduction to landslide and other mass movements, their mechanism and causes. Landslide identification, investigation and mapping. Landslide hazard zonation and risk mapping. Preventive/corrective measures of landslide control. Landslide instrumentation and monitoring. Dissemination of information, their use in disaster mitigation and management.	4
L-8	Use of geographical information system in landslide hazard mapping and database management.	1
L-9	Re-habilitation: Techno-economic survey of affected area. Survey of land for Rehabilitation of affected people. Rehabilitation Policy of Government.	2
L-10	Environmental Impact Assessment for Hydropower Projects: Environmental impact of canal, dams, hydropower generation. Environmental impact assessment methodology including statuary requirement & procedures for obtaining environmental clearance for hydropower Projects. Modeling & Forecasting of Environmental parameters including as an environmental management tours & other environmental survey techniques.	4
L-11	Hydropower Station: Brief idea about Design of Water conductor system for Major/Small/Mini/Micro Hydropower Stations.	2
L-12	Hydropower Stations in Tunnel.	1