

Government Polytechnic Asthawan, Nalanda
LECTURE PLAN

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Semester : IV				
Subject : Irrigation Engineering (1615505)				
Unit	Week	Lecture No (1 Hr Each)	Topic of Class & Discussions	Mode of Teaching
Unit 1 Introduction	1	1	Definition – Irrigation and irrigation engineering, advantages of irrigation, ill effects of over irrigation	Lecture /PDF /Video
		2	Types of irrigation project purpose wise and administrative wise	Lecture /PDF /Video
		3	Methods of irrigation	Lecture /PDF /Video
	2	4	Methods of irrigation	Lecture /PDF /Video
Unit 2 Hydrology	2	5	Definition of rainfall , rain gauge and rain gauge station ,	Lecture /PDF /Video
	2	6	Types of rain gauges (names only average annual rain fall and its calculation	Lecture /PDF /Video
	3	7	Types of rain gauges (names only average annual rain fall and its calculation	Lecture /PDF /Video
	3	8	Definition of run off , factor affecting run off, calculation of run off by run of coefficient	Lecture /PDF /Video
	3	9	Definition of run off , factor affecting run off, calculation of run off by run of coefficient	Lecture /PDF /Video
	4	10	Inglis' formula , Stranges and Binnie's tables and curves	Lecture /PDF /Video
	4	11	Maximum flood discharge and methods of calculation. Yeild and Dependable yield and methods of calculation.	Lecture /PDF /Video
	4	12	Maximum flood discharge and methods of calculation. Yeild and Dependable yield and methods of calculation.	Lecture /PDF /Video
Unit – 3 Water Requirement of Crops	5	13	Cropping seasons and crop in Maharashtra. Definition – Crop period, base period Duty & Delta ,	Lecture /PDF /Video
	5	14	Factors affecting Duty , relation between Duty Delta	Lecture /PDF /Video
	5	15	Base period Definition – CCA , GCA , IA,	Lecture /PDF /Video
	6	16	Intensity of irrigation time factor capacity factor.	Lecture /PDF /Video
	6	17	Problems on water requirement and capacity of canal	Lecture /PDF /Video
	6	18	Problems on water requirement and capacity of canal	Lecture /PDF /Video
	7	19	Modified Penman method .	Lecture /PDF /Video
	7	20	Assessment of irrigation water	Lecture /PDF /Video
Unit – 4 Investigation and Reservoir Planning	7	21	Survey for irrigation project data collected for irrigation project	Lecture /PDF /Video
	8	22	Area capacity curve	Lecture /PDF /Video
	8	23	Silting of reservoir	Lecture /PDF /Video
	8	24	Rate of silting , factors affecting silting	Lecture /PDF /Video
	9	25	Methods to control levels and respective storage in reservoir . Fixing control levels.	Lecture /PDF /Video
	9	26	Methods to control levels and respective storage in reservoir . Fixing control levels.	Lecture /PDF /Video

Unit	Week	Lecture No (1 Hr Each)	Topic of Class & Discussions	Mode of Teaching
Unit - 5 Dams And Spillways	9	27	Types of dams – Earthen dams and Gravity dams (masonry and concrete)	Lecture /PDF /Video
	10	28	Comparison of earthen and gravity dams with respect to foundation, seepage, construction and maintenance	Lecture /PDF /Video
	10	29	Earthen Dams – Components and their function	Lecture /PDF /Video
	10	30	Earthen Dams – Components and their function	Lecture /PDF /Video
	11	31	Typical cross section seepage through embankment and foundation	Lecture /PDF /Video
	11	32	Seepage control though embankment and foundation	Lecture /PDF /Video
	11	33	Methods of constructions, types of failure of earthen dams and remedial measures	Lecture /PDF /Video
	12	34	Gravity Dams Theoretical and practical profile	Lecture /PDF /Video
	12	35	Typical cross section, drainage gallery, joint in gravity dam, high dam and low dam	Lecture /PDF /Video
	12	36	Typical cross section, drainage gallery, joint in gravity dam, high dam and low dam	Lecture /PDF /Video
	13	37	Spillways-Definition, function, location and components.	Lecture /PDF /Video
	13	38	Emergency and services, ogee spillway	Lecture /PDF /Video
	13	39	Bar type spillway, discharge over spillway	Lecture /PDF /Video
	14	40	Spillway with and without gates.	Lecture /PDF /Video
Unit - 6 Bandhara , Precolation Tanks And LiftIrrigation	14	41	Advantages and disadvantages of bandharairrigation layout and component parts, solid and open bandhara	Lecture /PDF /Video
	14	42	Percolation Tanks – necessity and importance	Lecture /PDF /Video
	15	43	Selection of site. Layout of lift irrigation scheme.	Lecture /PDF /Video
	15	44	Irrigation department standard design and specification.	Lecture /PDF /Video
Unit – 7 (Diversion Head Works)	15	45	Weirs – components parts, function and types	Lecture /PDF /Video
	16	46	Weirs – components parts, function and types	Lecture /PDF /Video
	16	47	Layout of diversion head works with its components and their function	Lecture /PDF /Video
	16	48	Layout of diversion head works with its components and their function	Lecture /PDF /Video
	17	49	Canal head regulator, silt excluders and slit ejectors.	Lecture /PDF /Video
	17	50	Canal head regulator, silt excluders and slit ejectors.	Lecture /PDF /Video
	17	51	Barrages – components and their function	Lecture /PDF /Video
	18	52	Barrages – components and their function	Lecture /PDF /Video
	18	53	Difference between weir and barrage	Lecture /PDF /Video
	18	54	Irrigation department standard design and specifications	Lecture /PDF /Video
Unit – 8 Canals	19	55	CANALS – classification of canals according to alignment and position in the canal network	Lecture /PDF /Video
	19	56	CANALS – classification of canals according to alignment and position in the canal network	Lecture /PDF /Video
	19	57	Design of most economical canal section	Lecture /PDF /Video
	20	58	Design of most economical canal section	Lecture /PDF /Video
	20	59	Design of most economical canal section	Lecture /PDF /Video
	20	60	Canal lining – Definition, purpose, types of canal lining	Lecture /PDF /Video
	21	61	Advantages of canal lining properties of good canal lining material	Lecture /PDF /Video
	21	62	CD. works- different C.D	Lecture /PDF /Video
	21	63	Works, canal falls, escapes, cross regulators and canal outlets.	Lecture /PDF /Video
	22	64	Works, canal falls, escapes, cross regulators and canal outlets.	Lecture /PDF /Video