

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	3				1	1	
COURSE NAME	Irrigation Engineering												
CO Description	Explain Hydrology, its parameter and their estimation.												
LO Description	Describe hydrological cycle and measure rainfall with the help of rain gauges..												
SCHEME OF STUDY													
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1.	Hydrological cycle , types of precipitation, measurement of rainfall, automatic and non – automatic rain gauges , methods of estimating average rainfall, simple numerical problems	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	06	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal							
1	Theory exam	Students will be asked to explain Hydrological cycle, precipitation, measurement of rainfall, Types of rain gauges estimating average rainfall, simple numerical problems.	08	Question paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External							
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of external end term theory exam.													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	3				1	2	
COURSE NAME	Irrigation Engineering												
CO Description	Explain Hydrology, its parameter and their estimation.												
LO Description	Explain Runoff, its calculation and concept of water conservation techniques.												
SCHEME OF STUDY													
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Runoff, factors affecting runoff, catchment area and its characteristics, calculation of runoff , rainfall and runoff relationship, hydrograph and unit hydrograph, water shed management and rain water harvesting methods	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	07	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal							
1	Paper pen test	Students will be asked to explain Runoff , catchment area, relationship with rainfall , hydrograph, watershed management and rain water harvesting.	10	Test paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film.	Internal							
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of Internal Exam – Mid Semester Test-I													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	3				2	1	
COURSE NAME	Irrigation Engineering												
CO Description	Explain Irrigation and water requirements of crops.												
LO Description	Describe necessity of Irrigation, ill effects of over irrigation and methods of irrigation.												
SCHEME OF STUDY													
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Definition and necessity of irrigation, benefits of irrigation, possible ill effects of over irrigation ,types of irrigation, sources of irrigation water, methods of irrigation	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	04	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal							
1	Theory exam	Students will be asked to explainIrrigation, Method and advantage & disadvantage of irrigation.	05	Question paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External							
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of external end term theory exam.													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. 4
					C	0	3			2	
COURSE NAME	Irrigation Engineering										
CO Description	Explain Irrigation and water requirements of crops.										
LO Description	Explain the terms delta, duty, base period and establish relation between them.										
SCHEME OF STUDY											
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks				
1	Cropping seasons and crops in Madhya Pradesh and their water requirement, definition -crop period, base period, duty, delta, factors affecting duty, relationship between duty, delta and base period, available moisture and consumptive use, depth and frequency of irrigation with simple numerical problems	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	07	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil				
SCHEME OF ASSESSMENT											
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria		Resources Required	External / Internal				
1	Theory exam	Students will be asked to explain crop period, base period , duty, delta, factors affecting duty, relationship between duty, delta and base period with simple numerical problems	10	Question paper + Rating scale		Handouts, chalk board, PPT, text book, charts, video film.	External				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											
Part of external end term theory exam.											

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. 4
					C	0	3			2	
COURSE NAME	Irrigation Engineering										
CO Description	Explain Irrigation and water requirements of crops.										
LO Description	Calculate water requirement of crops and capacity of canal.										
SCHEME OF STUDY											
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks				
1	Definition: Gross commanded area, cultural commanded area, intensity of irrigation, time factor, capacity factor, kor – period, kor – depth, Paleo irrigation, outlet factor, crop ratio, cumec day, Root zone depth, crop rotation, simple problems on water requirement of crops and capacity of canal	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	07	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil				
SCHEME OF ASSESSMENT											
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria		Resources Required	External / Internal				
1	Theory exam	Students will be asked to explain different types of irrigation commanded area, various terminology related to water requirement of crop , capacity of canal and simple Numerical problems.	10	Question paper + Rating scale		Handouts, chalk board, PPT, text book, charts, video film.	External				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											
Part of external end term theory exam.											

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. 4
					<i>C</i>	<i>0</i>	<i>3</i>			3	
COURSE NAME	Irrigation Engineering										
CO Description	Explain investigations for reservoir planning and different types of dams.										
LO Description	Discuss the necessity of survey for irrigation structures and determine storage capacity of reservoir.										
SCHEME OF STUDY											
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks				
1	Introduction and types of reservoir, survey for irrigation project, application of GIS in planning reservoir, area capacity curve, zones of storage in reservoir, types of yield, capacity of reservoir, silting of reservoir, rate of silting, factors affecting silting. Method to control silting,	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	07	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil				
SCHEME OF ASSESSMENT											
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria		Resources Required	External / Internal				
1	Paper pen test	Students will be asked to explainreservoir, its planning , application of GIS, capacity and silting of reservoir , Method to control silting.	10	Test paper + Rating scale		Handouts, chalk board, PPT, text book, charts, video film.	Internal				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											
Part of Internal Exam – Mid Semester Test-II											

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	O	3				3	2	
COURSE NAME		Irrigation Engineering											
CO Description		Explain investigations for reservoir planning and different types of dams.											
LO Description		Explain the components of earthen dams and methods of constructions											
SCHEME OF STUDY													
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Types of dams, earthen dams- types, components and their function, typical cross section, methods of construction, types of failure of earthen dams and remedial measures	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	05	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal							
1	Theory exam	Students will be asked to explain different types of dams ,earthen dams its types, components, function ,failure types and remedial measures.	07	Question paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External							
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of external end term theory exam.													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	3				3	3	
COURSE NAME	Irrigation Engineering												
CO Description	Explain investigations for reservoir planning and different types of dams.												
LO Description	Describe Gravity dam with its component and spillways.												
SCHEME OF STUDY													
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Forces acting on gravity dam, typical cross section, modes of failure of gravity dam (concept only), theoretical and practical profile, high dam and low dam, drainage gallery, joint in gravity dam, Spillways- definition, function, location, component and its types.	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	07	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal							
1	Theory exam	Students will be asked to explain Forces acting on gravity dam, typical cross section, profile ,drainage gallery, joint , modes of failure and Spillways-function, components and its types	08	Question paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External							
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of external end term theory exam.													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	O	3				4	1	
COURSE NAME		Irrigation Engineering											
CO Description		Explain Diversion head works, weir- barrages and necessity of percolation tanks.											
LO Description		Describe diversion head works.											
SCHEME OF STUDY													
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Introduction of diversion head works, layout with its components and their function, weirs- components parts, function and types Barrages– components and their function, difference between weir and barrage, canal head regulator, silt excluders and silt ejectors	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	06	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal							
1	Theory exam	Students will be asked to explain diversion head works, layout with its components , function and types, Barrages and weirs with their function, difference between dams , canal head regulator, silt excluders and ejectors	08	Question paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External							
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of external end term theory exam.													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. 4
					C	0	3			4	
COURSE NAME	Irrigation Engineering										
CO Description	Explain Diversion head works, weir- barrages and necessity of percolation tanks.										
LO Description	Explain Bandhara irrigation, Necessity and importance of percolation tanks.										
SCHEME OF STUDY											
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks				
1	Bandhara irrigation layout and components, its advantages and disadvantages Percolation tank- Necessity and importance, selection of site, Layout of lift irrigation scheme.	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	05	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil				
SCHEME OF ASSESSMENT											
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria		Resources Required	External / Internal				
1	Paper pen test	Students will be asked to explain Bandhara irrigation layout and components, Percolation tank Layout of lift irrigation scheme.	05	Test paper + Rating scale		Handouts, chalk board, PPT, text book, charts, video film.	Internal				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											
Part of internal theory- Assignments/Seminars/Presentation											

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. 4
					C	0	3			5	
COURSE NAME	Irrigation Engineering										
CO Description	Explain classification of canals and Water logging problems.										
LO Description	Classify different types of canals and explain canal lining .										
SCHEME OF STUDY											
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks				
1	Classification of canals according to alignment and position in the canal network, piped canal system – definition and use . balancing depth, most economical canal section, cross section of irrigation canal, Canal lining – definition, purpose, types of canal lining, advantages of canal lining properties of good canal lining material	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	06	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil				
SCHEME OF ASSESSMENT											
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria		Resources Required		External / Internal			
1	Theory exam	Students will be asked to explain canals with its Classification, piped canal system , most economical canal section , Canal lining with its types and advantages.	08	Question paper + Rating scale		Handouts, chalk board, PPT, text book, charts, video film.		External			
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											
Part of external end term theory exam.											

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code			Course Code			CO Code	LO Code	Format No. 4
					C	0	3				5	2	
COURSE NAME		Irrigation Engineering											
CO Description		Explain classification of canals and Water logging problems.											
LO Description		Describe water logging with its preventions.											
SCHEME OF STUDY													
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks						
1	Water logging – its causes , effects and preventions, Reclamation of waterlogged areas, assessment of irrigation water.	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge	04	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil						
SCHEME OF ASSESSMENT													
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal							
1	Paper pen test	Students will be asked to explain Water logging its causes, effects, preventions and assessment of irrigation water.	05	Test paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film	Internal							
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)													
Part of internal theory- Assignments/Seminars/Presentation													

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME			Branch Code		Course Code		CO Code	LO Code	Format No. 4
					C	0	3				
COURSE NAME	Irrigation Engineering										
CO Description	Explain classification of canals and Water logging problems.										
LO Description	Explain different types of cross drainage works.										
SCHEME OF STUDY											
S. No.	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks				
1	Cross Drainage works - types , canal falls, escapes, cross regulators and canal outlets	Interactive classroom teaching, assignments, quiz, presentation	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge	04	00	Handouts, chalk board, PPT, text book, charts, video film.	Nil				
SCHEME OF ASSESSMENT											
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria		Resources Required	External / Internal				
1	Theory exam	Students will be asked to explain Cross Drainage works, cross regulators and canal outlets	06	Question paper + Rating scale		Handouts, chalk board, PPT, text book, charts, video film	External				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											
Part of external end term theory exam.											