Table: 1 Academic Curriculum for P.G. Diploma in WATER RESOURCES DEVELOPMENT (WRD)

Teaching Scheme					Contact Hours per Week			Exam. Duration (Hrs.)		Relative Weightage (%)				
S. No	SUBJECT CODE	COURSE TITLE	SUBJECT AREA	CREDITS	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1st YEAR - I SEMESTER (AUTUMN)														
1.	WRC-501	Design of Water Resources Structures	PCC	4	3	-	2	3	-	20-35	-	20-30	40-50	-
2.	WRC-503	Water Resources Planning and Management	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
3.	WRC-504	Applied Hydrology	PCC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
4.	WRC-508	Hydromechanical and Electrical Equipment	PCC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
5.	Please refer to Table 4	Program Elective - I	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
6.	Institute-level course	Social Science Course (SSC)	SSC	2	-	-	-	-	-	20-35	-	20-30	40-50	-
Sub Total				**19**										
1st YEAR - II SEMESTER (SPRING)														
1.	Institute-level course	Science, Technology, and Advance Research-tools (STAR)	STAR	3	-	-	-	-	-	20-35	-	20-30	40-50	-
2.	Please refer to Table 5	Program Elective Course -II	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
3.		Program Elective Course -III	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
4.		Program Elective Course – IV	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
5.		Program Elective Course - V	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
6.	WRC-700	Seminar	SEM	2	-	-	-	-	-	20-35	-	20-30	40-50	-
Sub Total				**17**										

Note: P.G. Diploma course in WRD shall be of One Year duration comprising of semesters I and II only, with a minimum credit of 36

Table 2: Academic Curriculum for P.G. Diploma in IRRIGATION WATER MANAGEMENT (IWM)

Teaching Scheme					Contact Hours per Week			Exam. Duration (Hrs.)		Relative Weightage (%)				
S.No	SUBJECT CODE	COURSE TITLE	SUBJECT AREA	CREDITS	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1st YEAR - I SEMESTER (AUTUMN)														
1.	WRC-503	Water Resources Planning and Management	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
2.	WRC-533	Design of Irrigation Structures and Drainage Works	PCC	4	3	-	2	3	-	20-35	-	20-30	40-50	
3.	WRC-536	On Farm Development	PCC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
4.	WRC-538	Principles and Practices of Irrigation	PCC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
5.	Please refer to Table 4	Program Elective - I	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
6.	Institute-level course	Social Science Course (SSC)	SSC	2	-	-	-	-	-	20-35	-	20-30	40-50	-
Sub Total				**19**										
1st YEAR - II SEMESTER (SPRING)														
1.	Institute-level course	Science, Technology, and Advance Research-tools (STAR)	STAR	3	-	-	-	-	-	20-35	-	20-30	40-50	-
2.	Please refer to Table 6	Program Elective Course -II	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
3.		Program Elective Course -III	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
4.		Program Elective Course – IV	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
5.		Program Elective Course - V	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
6.	WRC-700	Seminar	SEM	2	-	-	-	-	-	20-35	-	20-30	40-50	-
Sub Total				**17**										

Note: P.G. Diploma course in IWM shall be of One Year duration comprising of semesters I and II only, with a minimum credit of 36

Table 3: Academic Curriculum for P.G. Diploma in DRINKING WATER AND SANITATION (DWS)

Teaching Scheme					Contact Hours per Week			Exam. Duration (Hrs.)		Relative Weightage (%)				
S. No	SUBJECT CODE	COURSE TITLE	SUBJECT AREA	CREDITS	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1st YEAR - I SEMESTER (AUTUMN)														
1.	WRC-506	Rural and Urban Water Supply	PCC	4	3	-	2	3	-	20-35	-	20-30	40-50	-
2.	WRC-543	Drinking Water and Sanitation Sustainability	PCC	4	3	-	2	3	-	20-35	-	20-30	40-50	-
3.	WRC-546	Wastewater Engineering	PCC	3	2	-	2	3	-	20-35	-	20-30	40-50	
4.	WRC-548	Water sanitation, Hygiene, and Infrastructural Management	PCC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
6.	Please refer to Table 4	Program Elective - I	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
5.	Institute-level course	Social Science Course (SSC)	SSC	2	-	-	-	-	-	20-35	-	20-30	40-50	-
Sub Total				**19**										
1st YEAR - II SEMESTER (SPRING)														
1.	Institute-level course	Science, Technology, and Advance Research-tools (STAR)	STAR	3	-	-	-	-	-	20-35	-	20-30	40-50	-
2.	Please refer to Table 7	Program Elective Course -II	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
3.		Program Elective Course -III	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
4.		Program Elective Course – IV	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
5.		Program Elective Course - V	PEC	3	-	-	-	-	-	20-35	-	20-30	40-50	-
6.	WRC-700	Seminar	SEM	2	-	-	-	-	-	20-35	-	20-30	40-50	-
Sub Total				**17**										

Note: P.G. Diploma course in DWS shall be of One Year duration comprising of semesters I and II only, with a minimum credit of 36

Table 4: Programme Elective Courses : Semester I (WRD/IWM/DWS/P.G. Diploma) - (any one course)

S.No	Subject Code	Course Title	SUBJECT AREA	CREDITS	L	T	p	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	WRL-601	Open Channel Hydraulics	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
2.	WRL-602	Data analytics for Water Resources	PEC	3	2	-	2	2	1	20-35	-	20-30	40-50	-
3.	WRL-603	Smart Irrigation System	PEC	3	2	-	2	2	1	20-35	-	20-30	40-50	-
4.	WRL-604	Environmental Impact Assessment of Water Resources Project	PEC	3	3	-	-	3	-	20-35	-	20-30	40-50	-
5.	WRL-605	Circular Water Economy	PEC	3	3	-	-	3	-	20-35	-	20-30	40-50	-

Table 5: Programme Elective Courses for WRD : Semester – II

S.No	Subject Code	Course Title	SUBJECT AREA	CREDITS	L	T	p	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	WRL-611	Assessment of Water Resources Project	PEC	3	1	-	4	1	2	20-35	-	20-30	40-50	-
2.	WRL-612	Underground Structures and Tunnels	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
3.	WRL-613	System Design Techniques	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
4.	WRL-614	Sediment Transport in Rivers	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
5.	WRL-615	Geotechnical Engineering	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
6.	WRL-616	Hydropower and Appurtenant Works	PEC	3	3	-	2	3	-	20-35	-	20-30	40-50	-
7.	WRL-617	Earth and Rockfill Dams	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
8.	WRL-618	Masonry and Concrete Dams	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
9.	WRL-619	Irrigation Structures	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
10.	WRL-620	River Engineering	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
11.	WRL-621	Finite Element Methods	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
12.	WRL-622	Water Resources System Reliability	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
13.	WRL-623	Groundwater Hydrology	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
14.	WRL-624	Climate Change and Water Resources	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
15.	WRL-625	Substation and Transmission line Design	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
16.	WRL-626	Installation Maintenance and Testing of Hydro Generating Equipment	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
17.	WRL-627	Maintenance Management in Power Plants	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
18.	WRL-628	Power System Management	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
19.	WRL-629	Electrical Design of Hydro Power Station	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
20.	WRL-630	Power System Operation and Control	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
21.	WRL-631	Control and Instrumentation of Hydro	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
22.	WRL-632	Power System Analysis	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
23.	WRL-633	Power Systems Reliability	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
24.	WRL-634	Insulating Systems	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
25.	WRL-635	Planning and Design of Small Hydro Power Schemes	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
26.	WRL-636	Power Electronics Controlled Hydro-Electric Systems	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-

27.	WRL-637	Modelling and Simulation of Hydro-Electric Energy Systems	PEC	3	1	0	4	2	2	20-35	-	20-30	40-50	-
28.	WRL-638	Synchronous and Asynchronous Generators Laboratory	PEC	3	1	-	4	-	3	20-35	-	20-30	40-50	-
29.	WRL-639	Power Electronics Laboratory	PEC	3	1	-	4	-	3	20-35	-	20-30	40-50	-
30.	WRL-640	Control and Instrumentation Laboratory	PEC	3	1	-	4	-	3	20-35	-	20-30	40-50	-
31.	WRL-641	Design of Construction Job Facilities	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
32.	WRL-642	Construction Plant Machinery	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
33.	WRL-643	Air Conditioning and Ventilation	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
34.	WRL-644	Construction Techniques	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
35.	WRL-645	Soil and Agronomy	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
36.	WRL-646	Renewable Energy System Technology	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
37.	WRL-647	Water Quality Monitoring and Modeling	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
38.	WRL-648	Groundwater Development and Management	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
39.	WRL-649	Watershed Development and Management	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
40.	WRL-650	Remote Sensing and GIS Applications in Water Systems	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
41.	WRL-651	Sustainable Water Resources	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
42.	WRL-652	Ecohydrological Modeling and Sustainability	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
43.	WRL-653	Project Planning and Management	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
44.	WRL-654	Hybrid Renewable Energy System	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
45.	WRL-655	Rural and Urban Water Supply	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-

Table 6 - Programme Electives Courses for IWM : Semester – II

S.No	Subject Code	Course Title	SUBJECT AREA	CREDITS	L	T	p	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1	WRL-656	Performance Evaluation of Irrigation System	PEC	3	1	-	4	1	2	20-35	-	20-30	40-50	-
2	WRL-612	Underground Structures and Tunnels	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
3	WRL-613	System Design Techniques	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
4	WRL-614	Sediment Transport in Rivers	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
5	WRL-617	Earth and Rockfill Dams	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
6	WRL-620	River Engineering	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
7	WRL-624	Climate Change and Water Resources	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
8	WRL-645	Soil and Agronomy	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
9	WRL-646	Renewable Energy System Technology	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
10	WRL-647	Water Quality Monitoring and Modeling	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
11	WRL-648	Groundwater Development and Management	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
12	WRL-649	Watershed Development and Management	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
13	WRL-650	Remote Sensing and GIS Applications in Water Systems	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
14	WRL-651	Sustainable Water Resources	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-

15	WRL-652	Ecohydrological Modeling and Sustainability	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
16	WRL-655	Rural and Urban Water Supply	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
17	WRL-657	Operation Maintenance and Management of Irrigation Systems	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
18	WRL-658	Water and Land Laws	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
19	WRL-659	Rural Sociology and Irrigation Economics	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
20	WRL-660	Evaluation of Irrigation Project	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
21	WRL-661	Theory of Seepage	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
22	WRL-662	Cropping System Modeling	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
23	WRL-663	Environmental Impact of Irrigated Agriculture	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
24	WRL-664	Smart Irrigation Systems	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-

Table 7 - Program Elective Courses for Drinking Water and Sanitation : Semester – II

S.No	Subject Code	Course Title	SUBJECT AREA	CREDITS	L	T	p	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	WRL-665	WASH: Field methods and community engagement	PEC	3	1	-	4	1	2	20-35	-	20-30	40-50	-
2.	WRL-613	System Design Techniques	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
3.	WRL-614	Sediment Transport in Rivers	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
4.	WRL-646	Renewable Energy System Technology	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
5.	WRL-647	Water Quality Monitoring and Modeling	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
6.	WRL-648	Groundwater Development and Management	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
7.	WRL-649	Watershed Development and Management	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
8.	WRL-650	Remote Sensing and GIS Applications in Water Systems	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
9.	WRL-651	Sustainable Water Resources	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
10.	WRL-652	Ecohydrological Modeling and Sustainability	PEC	3	2	-	2	3	-	20-35	-	20-30	40-50	-
11.	WRL-666	Drinking Water for Low-Income Societies	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
12.	WRL-667	Wastewater and Fecal Sludge Management	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
13.	WRL-668	Resilience, Shocks, and Engineering	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
14.	WRL-669	Management and Operation of Water Utilities	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
15.	WRL-670	Water and Wastewater Engineering	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-
16.	WRL-671	Flow Hydraulics and Urban Drainage	PEC	3	2	1	-	3	-	20-35	-	20-30	40-50	-

Table 8: Social Science courses (SSC) offered by the department

S. NO.	SUBJECT CORE	COURSE TITLE	SUBJECT AREA	CREDITS	L	T	p	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1	WRS-501	Water and Society	SSC	2	2	-	-	2	-	20-35	-	20-30	40-50	-
2	WRS-502	Policy & Strategies for disaster Risk Reduction	SSC	2	2	-	-	2	-	20-35	-	20-30	40-50	-

Table 9: Science, Technology, and Advanced Research-tools (STAR) courses offered by the department

S. NO.	SUBJECT CORE	COURSE TITLE	SUBJECT AREA	CREDITS	L	T	p	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1	WRT-501	Artificial Intelligence (AI) & Machine Learning (ML) for Water Resources	STAR	3	2	-	2	2	1	20-35	-	20-30	40-50	-
2	WRT-502	Automation in Water Resources Management	STAR	3	2	-	2	2	1	20-35	-	20-30	40-50	-