	V (Diploma Wing ) Bhop	(	SCHEME F		NING	Branch Co	ode	Сог	ourse Co	de	CO Code	LO Code		
RGPV	/ (Diplc	oma Wing ) Bhopa	al 🦷				C 03	;	3	0	1	1	1	Format No. <b>4</b>
							C 05	;	5		-	-	-	
COURS	SE NAME	HYDRAULICS												
CO Des	scription	To measure pressure surfaces.	: using v	arious press	sure measur	ring devices a	nd to ca	lculate	e hyc	drost	tatic	press	sure o	on different
LO Des	cription	Explain the terms rela	ated wi	th Hydraulic	cs and comr	pute propertic	es of flui	d with	give	en d	ata.			
		1			SCHEME O	JF STUDY								
S. No.		Learning Content		Method of teaching		cription of T-L Process	Teach Hrs.	Pra /Tut	act. t Hrs.	. '	LRs R	equire	ed	Remarks
1	mechanics hydrodyna <b>Physical p</b> Mass dens Specific gr Compress viscosity –	I terms used in Hydraulics –flu cs, hydraulics, hydrostatics and namics, application of hydrauli <b>properties of fluid</b> nsity, Weight density, Specific gravity, Surface tension and ca sibility, Viscosity, Newton's law – Dynamic and kinematics viso Real liquids	nd Ilics. c volume, capillarity, aw of	Interactive classroom teaching, assignments, quiz, presentation	the con provide s, the stu will con n. and giv	er will explain intents and le handouts to udents; teacher induct a quiz ve assignments ctice their edge.	06	0		vi	Text bo video lo chalk b	ecture		NIL
				S	CHEME OF A	SSESSMENT								
S. No.		nod of Description	on of Asse	essment	Maximum Marks	Passing	Criteria		Re	sour	rces F	Requir	ed	External / Internal
1		emester am Student will be Define/discuss in hydraulics ar various physica fluid/liquids Compute prope with given data	terms used evance, ties of	10	Test Paper +	Rating sca				ts, chalk board, PPT, ook, charts, video film.			, Internal	
			ADDITI		UCTIONS FO	R THE HOD/ FA	ACULTY (	IF ANY)	)					
						ster theory exa								

			SCHEME FO	R LEARNING	Branch	Code		Course C	Code	CO Code	LO Code	
RGPV	/ (Diplo	oma Wing ) Bhopal	OUTC	COME	C 0	3	3	0	1	1	2	Format No. <b>4</b>
COURS	E NAME	HYDRAULICS									1	
CO Des	cription	To measure pressure using v	arious pressure m	easuring devices and to	o calcula	te h	ydrost	atic p	ressu	re on	differ	ent surfaces.
LO Des	cription	Calculate pressure using var	ious pressure meas	suring devices Piezome	ter/Ut	ube	manor	neter	r/Utı	ube di	fferen	tial manometer
			SC	CHEME OF STUDY								
S. No.		Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.		Pract Tut Hi		LRs F	Require	ed	Remarks
1	PIPES: Definition Concept of Variation Types of p absolute p Conversion other. Devices for Piezomete pressure g Explain an using diffe U tube diffe	on of pressure head of one liquid in t or pressure measurements in pipes - er, U-tube manometer, Bourdon's		Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.		0		\ \		ook, lecture board.		<b>VIL</b>

			SCHEME OF A	SSESSMENT		
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory exam	Student will be asked to define/explain pressure/ its variation with depth /concept of pressure head / Tyoes of pressure. Describe principle/ working of pressure measurement devices, Simple numerical problems on conversion of pressure head and calculation of pressure using various pressure measuring devices.	10	Test Paper + Rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External
		ADDITIONAL INS	TRUCTIONS FOI	R THE HOD/ FACULTY (IF A	NY)	· 
		Par	t of end semes	ter theory exam		

	RGPV (Diploma Wing ) Bhopal	SCHE	EME F	OR LEARN	ING	Brar	Branch Code			ourse Co	ode	CO Code	LO Code			
KGP			ing ) Bhopai		OU	TCOME		С	0	3	3	0	1	1	3	Format No.
COURSI	E NAME	HYDRA	ULICS				I	I			_		_			
CO Deso	cription	To mea surface	asure pressure usi es.	ıg various	pressi	ure measuri	ng devices a	nd to	o cal	cula	te hy	dros	tatic	press	ure o	n different
LO Desc	ription	Measu manon	re pressure using neter	various pre	essure	measuring	devices Piezo	ome	ter/	Utι	ıbe m	nano	mete	er/Ut	ube (	differential
						SCHEME OF	STUDY									
S. No.		Learn	ing Content		thod o aching		ption of T-L Process	Tea Hr			Pract. ut Hrs	5.	LRs R	equire	ed	Remarks
1	head by Pie 2. Measure tube differ	Measurements of pressure and pressure ead by Piezometer, U-tube manometer Measurement of pressure difference by U- be differential manometer. Study of Bourdon's gauge		J- hands of practice	onstration, from lab s on demons cice, lab procedu nments experim Student assignm			-		06		b b v	oard, ook, c	lm, and	ĸt	<b>VIL</b>
					SC	HEME OF AS	SESSMENT									
S. No.	Metho Assess		Description of	Assessmen	t	Maximum Marks	Passing	Crite	ria		R	esoui	rces R	equir	ed	External / Internal
1	Practical test in LaboratoryStudent will be asked lab experiments, tak and report results.					Pressure N Apparatus						easure	ement		External/ Internal	
			AD		NSTRU	CTIONS FOR	THE HOD/ FA	CULI	TY (IF	AN	Y)					

In external practical exam any of the practical mentioned in LO's can be assessed. Internal evaluation of the lab-work is to be done by evaluating remaining practicals.

	PV (Diploma Wing ) BhoRSE NAMEHYDRAULICSescriptionTo measure pressure of the scriptionescriptionCompute Total pressure		Dhanal	SCHEME	FOR LEAP	RNING	Bra	anch Co	de	0	Course Co	ode	CO Code	LO Code	
KGP		ima wing j	впораг	OL	JTCOME		<b>C</b>	0	3	3	0	1	1	4	Format No. <b>4</b>
COURS	SE NAME	HYDRAULICS	I										_		
CO Des	scription	To measure pre	essure using va	rious pressure me	easuring devic	ces and to calculate	ate hy	ydros	tatic	press	ure or	n diffe	rent su	rfaces	•
LO Des	cription	Compute Total p	pressure and cen	tre of pressure for	horizontal/Ver	tical/inclined surf	aces								
		1			SCHEME C	OF STUDY									
S. No.	HYDROSTATIC PRESSURE : Hydrostatic pressure at point Pascal's law			Method teachin		cription of T-L Process	_	ach Irs.		Pract. Tut Hr		LRs R	equire	ed	Remarks
1	Hydrostat Pascal's la Pressure of Total hydr pressure l center of inclined ir Determin pressure	DSTATIC PRESSURE : static pressure at point		r of	the co provid s, the stu will co n. and gi	er will explain ntents and e handouts to udents; teacher nduct a quiz ve assignments ctice their edge.	6		0		b b v	board, book, c	uts, cha PPT, te: harts, ilm, anc nual.	¢t	<b>VIL</b>
				S	CHEME OF A	SSESSMENT									1
S. No.		od of Disment	Description of	Assessment	Maximum Marks	Passing	Crite	eria		R	esou	rces F	Requir	ed	External / Internal
1	Theory e	xam cent	ne/ discuss To	law/ pressure tal pressure and ire on various	08	Test Paper +	Ratir	ng sca	le				t board arts, vio		External

			Solve simple numer pressure & center of p											
	1		ADDI	TIONAL INSTR	UCTIONS FO	R THE HOD/ F	ACULT	Y (IF A	NY)					1
						ter theory exa						со	LO	
RGP\	/ (Diplo	ma W	ing ) Bhopal	SCHEME	-	NING	_	h Code	3	Course Co		Code	Code <b>1</b>	Format No. <b>4</b>
CUIPS	SE NAME	HYDRA		UL	JTCOME		L	0 3	5	U	1	2	L	
	cription		undamentals of fluid	low with help	of continuity	y equation and	d Bern	oulli's	theore	em.				
	cription	Differer	ntiate various types of	flows.										
					SCHEME O	F STUDY								
S. No.		Learni	ng Content	Method of teachingDescription of T-L ProcessTeach Hrs.P P T							LRs Ro	equire	d	Remarks
1	Concept of Gravity flo Types of f and non-u	ENTALS OF FLUID FLOW :		Interactive classroom teaching, assignments quiz, presentation	Teache the con provide the stud will con n. and giv	r will explain itents and handouts to dents; teacher iduct a quiz e assignments tice their dge.	03	0	0		ext bc ideo le halk b	ectures		IIL
				S	CHEME OF A	SSESSMENT								
S. No.		od of sment	Description of As	sessment	Maximum Marks	Passing	Criter	а	R	esour	ces R	equire	ed	External / Internal
1	Theory e	xam	Student will be asked to		05	Test Paper +	er + Rating scale					board, ts, vide		External

	Define Reynold's number / explain its significance.											
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												
Part of end semester theory exam												

CD'	V (Dinla	ma Win	ig ) Bhopal	SCHEME	FOR LEAF	RNING	Brar	ch Coo	le	C	ourse Co	ode	CO Code	LO Code	· · · · /
Gri			g ) Dilupai	OL	UTCOME		<b>C</b>	0	3	3	0	1	2	2	Format No. <b>4</b>
COURS	SE NAME	HYDRAU	ILICS												
CO Des	scription	Apply fu	indamentals of fluid	flow with help	of continu	ity equation and	d Berr	oul	li's tł	neore	em.				
LO Des	cription	Calculate	e flow parameters u	sing continuity	equation /	Bernoulli's theo	orem.								
		1			SCHEME	OF STUDY									
S. No.		Learnir	ng Content	Method teaching		scription of T-L Process	Tea Hr	-		Pract. ut Hr	s	LRs R	equir	ed	Remarks
1	Continuity Various fo potential, Bernoulli's limitations Loss of he Applicatio	orms of ener kinetic, & p s theorem, i s. ad and mod	for fluid flow. rgies present in fluid flor pressure energy. its assumptions and dified Bernoulli's theore ulli's theorem.	assignments quiz,	the co provio s, the st will co n. and g to pra	her will explain ontents and de handouts to tudents; teacher conduct a quiz give assignments actice their vledge.	06		0		v		ook, ecture ooard.		NIL
				S	CHEME OF	ASSESSMENT									
S. No.		nod of sment	Description of A	ssessment	Maximum Marks	Passing	Criter	а		F	Resou	rces F	Require	ed	External / Internal
1	Theory ex		Students will be aske Define discharge Explain continuity eq flow.		10	Test Paper +	rating	sca	le				t board arts, vi		, External

Discuss various forms of energies present in fluid flow. Explain Bernoulli's theorem, it's assumptions/limitations. Calculate flow parameters applying continuity equation and Bernoulli's									
equation with given data.									
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)									
Part of end semester theory exam									

				SCHEME !		NING	Branc	۱ Code	e	Cr	ourse Co	ode	CO Code	LO Code	
KGPV	י (טוקוט)		ing ) Bhopal	οι	JTCOME		с	)	3	3	0	1	2	3	Format No. <b>4</b>
COURS	SE NAME	HYDRAU	JLICS												
CO Des	scription	Apply fu	undamentals of fluid	d flow with help	of continuity	/ equation and	Berno	bull	i's th	eore	m.				
LO Dese	cription	Perform	n experiments relate	ed to fundament	tals of fluid flo	w									
					SCHEME OF	F STUDY									
S. No.		Learni	ng Content	Method teaching		iption of T-L Process	Teac Hrs			ract. ut Hrs		LRs R	equire	ed	Remarks
1	flow.	·	nent to study types of	Lab demonstratio hands on practice, lab assignments	on, from lab demonst procedur experime Student assignme these ex	ents. will conduct lab ent based on operiments.			04		b b vi	oard, I ook, cl	ilm, and	xt	NIL
S. No.	5. No. Method of Assessment Description of Assessment				CHEME OF AS Maximum Marks	Passing Criteria Resources Required					d	External / Internal			

1	Lab Expe	riment	Student will be asked to experiments, take obse report results.	•							apparatus apparatus		External / Internal
			ADDITI	ONAL INSTRUCT	TIONS FOR THE HOD/ FA	ACULTY (I	FANY	()					
	rnal pract ting remai		• •	entioned in LO'	s can be assessed. Inter	nal evalu	ation	of the	∍ lab-	-work	is to	be do	ine by
	- / - • •			SCHEME FO	<b>R LEARNING</b>	Branch Co	de	Coι	urse Coo	de	CO Code	LO Code	
RGPV	/ (Diplo	ima W	'ing ) Bhopal	OUT	COME	<b>C</b> 0	3	3	0	1	3	1	Format No. <b>4</b>
COURS	SE NAME	HYDRA	ULICS			,							
CO Des	cription	To appl	ly basic principles of hyd	draulics in pipe	flow.								
LO Des	cription	Calcula	te major head loss / min	nor head losses	in pipes/ size of equival	ent pipe.							
				S	CHEME OF STUDY								
S. No.		Learn	ing Content	Method of teaching	Description of T-L Process	Teach Hrs.		ract. ut Hrs.		.Rs Re	equire	d	Remarks
1	FLOW OF LIQUID THROUGH PIPES : Major head loss in pipes due to friction and its calculation by Darcy-Weisbach Equation, Use of Nomograms Minor loss of head in pipe flow- loss of head due to sudden Contraction, sudden expansion, at entrance and exit of pipes and in various pipe fittings. Hydraulic gradient line and Energy gradient line Pipes in series and parallel Equivalent pipe – Dupuit's equation Simple Numericals		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.	10	0		vi	ext bo ideo le halk bo	ectures		ΝL	

		S	CHEME OF ASS	SESSMENT				
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing (	Criteria	Reso	ources Required	External / Internal
1	Theory exam	Students will be asked to Explain major loss of head/ minor losses of head Differentiate hydraulic gradient line and energy gradient line Describe pipes in series/parallel Solve simple numerical on head loss	10				ts, chalk board, PPT, ook, charts, video film.	External
		ADDITIONAL INSTR	UCTIONS FOR	THE HOD/ FA	CULTY (IF /	ANY)		
		Part c	of end semeste	er theory exa	m			

	// <b>D</b> '			SCHEME	FOR LEAF	RNING	В	ranch Co	de	Co	ourse Co	de	CO Code	LO Code	
RGP	/ (Dipio	ma wi	ng ) Bhopal	οι	JTCOME		С	0	3	3	0	1	3	2	Format No. <b>4</b>
COURS	SE NAME	HYDRAU	JLICS					1		_					
CO Des	scription	To apply	v basic principles of	hydraulics in pi	pe flow.										
LO Des	cription	Explain	water hammer and	siphon in pipe	flow										
	1				SCHEME OF STUDY										
S. No.		Learnii	ng Content	Method teachin		ription of T-L Process		each Hrs.		ract. ut Hrs	j.	LRs R	equire	ed	Remarks
1.		Learning Content ater hammer in pipes – cause, effects and medial measures whon		Interactive classroom teaching, assignments quiz, presentation	the con provid s, the stu will co n. and giv	er will explain ntents and e handouts to udents; teacher nduct a quiz ve assignments ctice their edge.	03				v		ook, ecture oard.		NIL
	·			S	CHEME OF A	SSESSMENT									
S. No.	Meth Assess		Description of A	ssessment	sessment Maximum Pa			eria	Res			<b>Resources Required</b>			External / Internal
1.	Quiz / Ass	Assignment Students will be aske		ed to	05								board rts, vid		Internal

		Explain the w phenomenon/it's ca Explain provision of Describe water siph	surge tank										
		ADI	DITIONAL INSTR	UCTIONS FO	R THE HOD/ F	ACULTY	(IF A	NY)					
				Part of te	rm work								
			SCHEME	FOR LEAF	RNING	Branch	Code		Course Co	ode	CO Code	LO Code	
RGPV	' (Diplo	oma Wing ) Bhopal		JTCOME		с (		3 3	0	1	3	3	Format No.
COURS	E NAME	HYDRAULICS									1		
CO Des	cription	To apply basic principles of	hydraulics in pi	pe flow.									
LO Desc	cription	Calculate discharge in a pip	e for the given o	lata using Ve	enturimeter an	d deter	mine	Hydra	ulic c	oeffic	ients c	of orif	ice.
		1		SCHEME C	OF STUDY								
S. No.		Learning Content	Method teachin		ription of T-L Process	Teac Hrs		Pract. Tut Hr		LRs R	equire	ed	Remarks
1	Venturim Measurin	e measuring device for pipe flow leter – construction & working. Ig discharge for a tank using orifice coefficients of orifice	Interactive classroom teaching, assignments quiz, presentation	the con provide s, the stu will con n. and give	er will explain ntents and e handouts to udents; teacher nduct a quiz ve assignments ctice their edge.	06	0		v	ext bo ideo le halk b	ectures		NIL
			S	CHEME OF A	SSESSMENT								
S. No.		Description of Descri	Assessment	Maximum Marks	Passing	Criteria	1	R	esou	rces R	Require	ed	External Internal

1 T	Theory exam	Student will be asked to Describe construction/working of venturimeter Discuss orifice and its hydraulic coefficients Simple numerical on calculation of discharge with given data for a venturimeter/ hydraulic coefficient of an orifice.	08	Test Paper + rating scale	Handouts, chalk board, PPT, text book, charts, video film.	External
				R THE HOD/ FACULTY (IF AN ster theory exam	NY)	

		SCHEME FOR	R LEARNING	Branch Co	de	Co	ourse Co	de	CO Code	LO Code	
סוקוט) י	oma wing ) Bhopai	OUTC	OME	C 0	3	3	0	1	1 3 4		Format No.
E NAME	HYDRAULICS		'	I						1	1
cription	To apply basic principles of hy	draulics in pipe f	low.								
ription	Determination of Darcy's frict	ion factor of a pip	be and hydraulic coeffic	ients for	giver	n vent	turim	eter	and o	rifice.	
	1	SC	CHEME OF STUDY								
	Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.			. I	LRs R	equire	d	Remarks
given pipe 2. Determ a given Ve 3. Determ	e. Nination of coefficient of discharge for Enturimeter. Nination of hydraulic coefficients for	Lab demonstration, hands on practice, lab assignments	Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on		06		b b vi	oard, I ook, cl deo fi	PPT, tex narts, lm, and	t	
	1. Determ given pipe 2. Determ a given Ve 3. Determ	(Diploma Wing ) BhopalE NAMEHYDRAULICScriptionTo apply basic principles of hyriptionDetermination of Darcy's friction	(Diploma Wing ) BhopalOUTCENAMEHYDRAULICSEriptionTo apply basic principles of hydraulics in pipe filterriptionDetermination of Darcy's friction factor of a pipeComplexSecond Second Sec	ConstraintOUTCOMEENAMEHYDRAULICSstriptionTo apply basic principles of hydraulics in pipe flow.riptionDetermination of Darcy's friction factor of a pipe and hydraulic coefficSCHEME OF STUDYLearning Content1. Determination of Darcy's friction factor for given pipe.2. Determination of coefficient of discharge for a given Venturimeter.Lab practice, lab asignmentsTeacher with support from lab staff will demonstrate the practice, lab assignments3. Determination of hydraulic coefficients for sharp edge orifice.Determination of hydraulic coefficients for sharp edge orifice.Lab process	(Diploma Wing ) BhopalOUTCOMEC0NAMEHYDRAULICSriptionTo apply basic principles of hydraulics in pipe flow.riptionDetermination of Darcy's friction factor of a pipe and hydraulic coefficients forSCHEME OF STUDYLearning ContentMethod of teaching1. Determination of Darcy's friction factor for given pipe.Lab demonstration, hands on processTeacher with support from lab staff will demonstrate the procedure of lab assignmentsTeacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct labI	(Diploma Wing ) BhopalOUTCOMEC03ENAMEHYDRAULICSrriptionTo apply basic principles of hydraulics in pipe flow.rriptionDetermination of Darcy's friction factor of a pipe and hydraulic coefficients for giverSCHEME OF STUDYLearning ContentMethod of teachingDescription of T-L ProcessTeach ProcessProcessHrs./Tu1. Determination of Darcy's friction factor for given pipe.LabTeacher with support from lab staff will06062. Determination of coefficient of discharge for a given Venturimeter.J. Determination of hydraulic coefficients for sharp edge orifice.LabTeacher with support from lab staff will063. Determination of hydraulic coefficients for sharp edge orifice.Student will conduct labImage: Student will conduct lab06	(Diploma Wing ) BhopalOUTCOMEC033ENAMEHYDRAULICSrriptionTo apply basic principles of hydraulics in pipe flow.rriptionDetermination of Darcy's friction factor of a pipe and hydraulic coefficients for given vertSCHEME OF STUDYLearning Content1. Determination of Darcy's friction factor for given pipe.2. Determination of coefficient of discharge for a given Venturimeter.3. Determination of hydraulic coefficients for sharp edge orifice.3. Determination of hydraulic coefficients for4. Determination of hydraulic coefficients for5. Determination of hydraulic coefficients for5. Determination of hydraulic coefficients for6. Determination of hydraulic coefficients for7. Determination of hydraulic coefficients for7. Determination of coefficient of discharge for a given Venturimeter.8. Determination of hydraulic coefficients for9. Determination of hydraulic coe	(Diploma Wing ) BhopalOUTCOMEC0330E NAMEHYDRAULICStriptionTo apply basic principles of hydraulics in pipe flow.riptionDetermination of Darcy's friction factor of a pipe and hydraulic coefficients for given pipe.1. Determination of Darcy's friction factor for given pipe.Method of teachingDescription of T-L ProcessTeach Hrs.Pract. /Tut Hrs.I1. Determination of Darcy's friction factor for given pipe.Lab demonstration, hands on practice, lab assignmentsTeacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab06H	(Diploma Wing ) BhopalOUTCOMEC03301E NAMEHYDRAULICStriptionTo apply basic principles of hydraulics in pipe flow.riptionDetermination of Darcy's friction factor of a pipe and hydraulic coefficients for given venturimeter.Learning ContentMethod of teachingDescription of T-L ProcessPract.Pract.LRs References of the demonstration, hands on practice, lab a given Venturimeter.1. Determination of coefficients of discharge for a given Venturimeter.LabTeacher with support from lab staff will demonstrate the procedure of lab experiments.06Handour book, ch video fil lab man staff will lab man st	SCHEME FOR LEARNING OUTCOMECourse Codecode(Diploma Wing ) BhopalSCHEME FOR LEARNING OUTCOMECourse Codecodecode(Diploma Wing ) BhopalBhopalSCHEME OF STUDYC033013E NAMEHYDRAULICSTo apply basic principles of hydraulics in pipe flow.Determination of Darcy's friction factor of a pipe and hydraulic coefficients for given venturineterSCHEME OF STUDYVenturineterVenturineterC033013SCHEME OF STUDYSchemen of Darcy's friction factor for given pipe.Method of teachingDescription of T-L ProcessTeach Hrs.Pract. /Tut Hrs.LRs Require book, charts, video film, and lab manual.1. Determination of Darcy's friction factor for given pipe.Lab demonstration, from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab06Handouts, chall book, charts, video film, and lab manual.	Branch CodeCourse CodeNAMEHYDRAULICSState minition of Darcy's friction of Darcy's friction factor of a pipe and hydraulic coefficients for teachingPrecessPract.Course CodeCourse CodeCourse CodeCourse CodeCourse CodeCourse CodeCourse CodeCourse CodeCourse CodeCourse CodeTo apply basic principles of hydraulics in pipe flow.SCHEME OF STUDYLearning ContentMethod of teachingPrecessPract. Hrs.Learning ContentCourse Code1. Determination of Darcy's friction factor for given pipe.Course Code

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Lab Experiment	Student will be asked to perform lab experiments, take observations and report results.		Rating scale/ Rubrics	<ol> <li>Pipe friction apparatus</li> <li>Venturimeter Apparatus</li> <li>Apparatus for determination of hydraulic coefficients for sharp edge orifice</li> </ol>	External / Internal
		ADDITIONAL INSTR	UCTIONS FO	R THE HOD/ FACULTY (IF A	NY)	
	rnal practical exan ting remaining pra	n any of the practical mentioned in cticals.	LO's can be a	ssessed. Internal evaluation	on of the lab-work is to be do	ne by

	/ (Diplo	oma Wing ) Bhopal	SCHEME FO	R LEARNING	Branch C	ode	Ca	ourse Co	de	CO Code	LO Code	<b>/</b>
			OUTC	COME	C 0	3	3	0	1	4	1	Format No. <b>4</b>
COURS	SE NAME	HYDRAULICS										
CO Des	cription	To determine fluid flow para	ameters in Open ch	nannel flow								
LO Des	cription	Calculate velocity and discharg trapezoidal channel sections.	ge using Chezy's / Ma	anning's equation and pr	operties	of mos	st ecoi	nomic	al cha	annel s	ectior	n for rectangular/
		<u>.</u>	S	CHEME OF STUDY								
S. No.		Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.		ract. ut Hrs		LRs R	equire	d	Remarks
1	Types of c purposes of artificia Geometrie	ROUGH OPEN CHANNEL : channels- artificial & natural, of artificial channel, Different shape al channels. cal properties of channel section – ea, wetted Perimeter, hydraulics	es 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	10	0		v	ext bo ideo le halk b	ectures		VIL

	calculation of discharch	-	CC111	to practi knowled	ge.				
S. No.	Method of Assessment	Description of Assessmen	t M	aximum Marks	SESSMENT Passing	Criteria	Resc	ources Required	External / Internal
1	Theory exam	Student will be asked to Classify channels. Define geometrical properties channel sections. Calculate discharge through an o channel by Chezy's/manni formula. Solve simple numerical on r economical rectangular/ trapezo channel section.	open ing's nost	12	Rating scale	e/ Rubrics		ts, chalk board, PPT, ook, charts, video film.	External
		ADDITIONAL II	NSTRUCT	TIONS FOR	THE HOD/ FA	CULTY (IF A	NY)		
		F	Part of ei	nd semeste	er theory exa	m			

Diplome Wing \ Dhenel	SCHEME FO	R LEARNING	Branch C	ode	C	ourse Co	de	CO Code	LO Code	
Diploma Wing ) Bhopal	OUTC	COME	<i>C</i> 0	3	3 0 1			4	2	Format No.
NAME HYDRAULICS										
iption To determine fluid flow par	ameters in Open ch	nannel flow.								
ption Explain specific energy diagram	n and hydraulic jum	p.								
	S	CHEME OF STUDY								
Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.		Pract. ut Hrs	s.	LRs R	equire	ed	Remarks
pecific energy diagram, Froud's number and ts significance. Critical, sub-critical and upercritical flow in channel lydraulic jump its occurrence in field, uses o nydraulic jump	classroom teaching,	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz and give assignments to practice their knowledge.	03	0		v	ext bo ideo l halk b	ecture		NIL
			to practice their	to practice their knowledge.	to practice their knowledge.	to practice their knowledge.	to practice their knowledge.	to practice their knowledge.	to practice their knowledge.	to practice their knowledge.

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Quiz / Assignment	Students will be asked to Describe specific energy diagram Differentiate critical. Subcritical and supercritical flow Explain occurrence / uses of hydraulic jump	05	Rating scale/ Rubrics	Handouts, chalk board, PPT, text book, charts, video film.	Internal
		ADDITIONAL INSTR	UCTIONS FO Part of ter	R THE HOD/ FACULTY (IF AN rm work	NY)	

(Diplome Wing) Phonel	SCHEME FOR	<b>R LEARNING</b>	Branch Co	ode	c	Course Co	de	CO Code	LO Code	
' (Diploma Wing) Bhopal	OUTC	OME	<i>C</i> 0	3	3	0	1	4	3	Format No. 4
ENAME HYDRAULICS			i							
cription To determine fluid flow param	neters in Open ch	annel flow.								
ription Explain discharge / velocity m	easuring devices.									
	SC	CHEME OF STUDY								
Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.		Pract. <sup>-</sup> ut Hrs		LRs Re	equire	d	Remarks
Discharge measuring devices – Triangular and rectangular notches, Weirs Velocity measurement devices - Floats, current meter and Pitot tube	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	0		vi	Fext bo video le chalk bo	ectures		IIL
		presentation.	presentation. and give assignments to practice their knowledge.	presentation. and give assignments to practice their knowledge.	presentation. and give assignments to practice their	presentation. and give assignments to practice their knowledge.				

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	Resources Required	External / Internal
1	Theory Exam	<ul> <li>Explain use of notches / weirs</li> <li>Differentiate notch and weir</li> <li>Solve simple numerical problems on a rectangular/triangular channel.</li> <li>Describe velocity measurement device</li> </ul>	07		Handouts, chalk board, PPT, text book, charts, video film.	External
				R THE HOD/ FACULTY (IF AN ter theory exam	NY)	

		ome Wing \ Dhenel	SCHEME FOF	R LEARNING	Branch Co	ode	c	Course Co	de	CO Code	LO Code	
KGPV		oma Wing ) Bhopal	COME	<i>c</i> 0	3	3	0	1	4	4	Format No.	
COURS	SE NAME	HYDRAULICS		`	ł					·		·
CO Des	cription	To determine fluid flow par	rameters in Open ch	annel flow.								
LO Desc	cription	Determination of coefficier	nt of discharge for gi	iven rectangular or triar	ngular ne	otch.						
			SC	CHEME OF STUDY								
S. No.		Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.		Pract. ut Hrs		LRs R	equire	ed	Remarks
1		coefficient of discharge for given lar or triangular notch.	Lab demonstration, hands on practice, lab assignments	Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on these experiments.		02		b b v	ooard, oook, c	ilm, and	xt	NIL
			_	SCHE	these experiments. SCHEME OF ASSESSMENT							

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing Criteria	<b>Resources Required</b>	External / Internal
1	Practical test in Laboratory	Student will be asked to perform lab experiments, take observations and report results.			Rectangular/Triangular notch apparatus	External / Internal
		ADDITIONAL INSTR	UCTIONS FO	R THE HOD/ FACULTY (IF AN	Y)	
	rnal practical exam ting remaining prac	n any of the practical mentioned in cticals.	LO's can be a	ssessed. Internal evaluation	n of the lab-work is to be do	ne by

			SCHEME FOR LEARNING		Branch Co	de	Course Co	ode		LO ode		
RGPV (Diploma Wing ) Bhopal		Ουτα	OUTCOME		3 3	0	1	5	1 Format No.			
COURSE NAME CO Description LO Description		HYDRAULICS										
		To select a suitable hydraulic pump for various applications. Describe construction and working of centrifugal pump /Reciprocating pump and recognize selection criteria of hydraulic pumps.										
S. No.		Learning Content	Method of teaching	Description of T-L Process	Teach Hrs.	Pract /Tut H		LRs Red	quired	Remarks		
1	HYDRAULIC PUMPS: Pumps - Definition and types. Suction head, delivery head, static head and manometric head. Centrifugal pump - component parts and their functions, principle of working, priming. Reciprocating pump - component parts and working.		Interactive classroom teaching, assignments, quiz,	Teacher will explain the contents and provide handouts to the students; teacher will conduct a quiz		06	v	ext boo ideo lec halk boa	tures,	NIL		

	submersible pump and Jet pump. Selection and choice of pump.			to practice their knowledge.				
		S	SCHEME OF AS	SESSMENT				
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Passing	Criteria	Reso	urces Required	External / Internal
1	Mid semester exam	Students will be asked to Classify pumps Explain various heads Describe construction/working principle of centrifugal / reciprocating pump. Write criteria for selection of pump.	10	Rating scale	e/ Rubrics			Internal
		ADDITIONAL INSTR		THE HOD/ FA	CULTY (IF AI	NY)		
		P;	art of mid sem	nester exam				