RG	PV (Diploma	a Wing ) Bhopal	SCHEME FOR L OUTCOM	–	Brai	nch (	Code	Con	urse (	Code	CO Code	LO Code	Format No. 4
					C	0	2	3	0	3	1	1	
COURSI	E NAME	CHEMICAL ENGINEERI	NG STOICHIOMETRY										
CO Des	cription	Know concept and us	e of units, dimensions and o	conversion facto	ors								
LO Des	cription	use system of units	for the given physical qua	antities and con	istants.								
			S	CHEME OF S	STUDY								
S. No.	Learni	ng Content	Teaching –Learning Method		ption of Torocess	·L		Teach Hrs.		Pract. 'ut Hr	II V c	Require	ed Rem
1	CGS, MKS of units derived que physical que gravitational value in common country and their	and system of units, , FPS and SI system fundamental and nantities. Units of nantities, concept of l constants and its different system, onstants, coefficients values, density, vity, API and Baume	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will contents and to students. T conduct assig quiz/tutorial t practice their	provide has Teacher will gnments/ to make stu	ndout l idents	ts	4	3		Han chal PPT boo	, t	

## SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximu m Marks	Resources Required	External / Internal
1	Pen Paper test/Theory Exam	Student will be asked to explain different system of units	10	(Test paper + Rating scale) and	internal/External
				(Question paper +Rating scale)	

R(	GPV (Dipl	oma Wing ) Bhor	sch sch	EME FOR LEARNIN	NG B	ranch Co	ode	Cou		CO Code	LO Code	Format No. 4
C <b>B</b> (	Ğ <b>Ŗ</b> YgDipl ∆ME	oma Wing ) Bhor CHEMICAL ENGIN	SCH bal EERING STOICHIOMETI	EME FOR LEARNIN	NG C	0	2	3 0	3	1	2	Format No. 4
CO Des	cription	Know concept as	nd use of units, dime	nsions and conversion	factors							
LO Des	cription	Convert the units	from one system to	another system.								
				SCHEME (	OF STUDY							
S. No.	Lear	rning Content	Teaching – Learning Method	Description of T	-L Process	Teach Hrs.		Pract. /Tut Hrs.		LRs Req	uired	Remarks
1	calculation	n factor of units, to convert unit of antities in different	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will expla contents and provide to students. Teacher conduct assignment quiz/tutorial to mal practice their known	de handouts er will ats/ ke students	2	4			douts, ch d, PPT, t c.		
	I		I	SCHEME OF A	ASSESSMEN'	T						
S. No.	Meth	od of Assessment	Descriptio	n of Assessment	Maximum Marks	1		Resourc	es Re	quired		External / Internal
1	Pen Paper	test/Theory Exam	Student will be a value of a quant system of unit to	ity from one	10	1,		+ Rating	-	*		External
			ADDITIONAL	INSTRUCTIONS FO	R THE HOD	/ FACUI	LTY	(IF ANY	)			
				Nil								

RGPV (Diplon	na Wing ) Bhopal	SCHEME FOR LEARNING OUTCOME	Bra	nc	h Co	de	C	ou	rse C	ode	Code	Code	Format No. <b>4</b>
			C		0	2	3		0	3	2	1	
COURSE NAME	CHEMICAL ENGINEERIN	NG STOICHIOMETRY	'			<u>'</u>							
CO Description	Apply the concept of	mole, mass and volume for various chemical	lengineer	ing	proce	esses							

#### SCHEME OF STUDY

			SCHEME OF STUL	71			
S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
	Mole concept, conversion of mass of substance to mole, atomic weight, molecular weight and equivalent weight	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	02	03	Handouts, chalk board, ppt, text book	

#### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Pen Paper test/Theory Exam	Student will be asked to convert mass into mole, equivalent weight and vice versa	10	(Test paper + Rating scale) and (Question paper +Rating scale)	Internal

#### ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

**LO Description** Solve numerical problems on mole concept.

R	RGPV (Diploma Wing ) Bhopal  COURSE  CHEMICAL ENGINEERIN	oal		FOR LEARNING		Branc	ch C			urse C	ode	CO Code	LO Code	Format No. 4	
							C	0	2	3	0	3	2	2	
	URSE ME	CHEMICAL ENGINE	ERING STO	DICHIOMETRY											
CO Des	scription	Apply the concept of	of mole, ma	ass and volume fo	or various chemica	l enginee	ring pi	roce	esses.						
LO Des	scription	Calculate composi	ition of gi	ven mixture and	l solutions.										
		1			SCHEME O	F STUD	Y								
S. No.	Lear	rning Content		ng –Learning Method	Description o Process		Teac Hrs		Pra /Tut		I	LRs I	Required		Remarks
1	compositi weight pe fraction, r mole fract percent ar fraction, r and norma Numerica stoichiom mass relat	of expressing the on of mixture reent, weight mole percent and tion, volume notility, molarity ality of solution. I problems. etric constants, tion in chemical calculation based elation	teaching demonst	ve classroom, ration, quiz, ents, tutorial.	Teacher will ex the contents and provide handou students. Teach will conduct assignments/ quiz/tutorial to students practic their knowledge	ts to er make e	06		06				, chalk T, text bo	ook,	
				\$	SCHEME OF AS	SSESSN	1ENT	ı							
S. No.	Metho	od of Assessment	D	escription of A	ssessment	Maxiı Maı				Re	source	es Re	quired		External / Internal
1	Pen Pape	er test/Theory Exam		will be asked to ition of mixture		10	)	1,	Гest pa Questic	•	_		*		External
			ADDIT	IONAL INSTR	RUCTIONS FOR	R THE I	HOD/	FA	CULT	TY (IF	ANY	)			
					Nil					- (		<u>/                                      </u>			

RG	PV (Diplo	oma Wing ) Bhopa	SCHEME FOR OUTCO		В	ranch (	Code 2	Cor	urse C	Code 3	CO Code	LO Code	Format No. 4
	JRSE ME	CHEMICAL ENGINEE	RING STOICHIOMETRY									1	
CO Des	cription	Understand ideal g	gas laws and their application	n in chemical e	engineerin	ig opera	tions a	nd pro	ocesses	s			
LO Des	cription	Understand behavio	our of ideal gas by knowing the	e laws of gases.									
				SCHEME O	F STUDY	7							
S. No.	Lear	rning Content	Teaching –Learning Method	Description Proce		Teach Hrs.		act. 'ut rs.	]	L <b>R</b> s F	Required	I	Remarks
1	Boyle's universal Hypothes	r of ideal gases law, Charles law, gas law, Avagadre's es, partial pressure, iw, Amagal's law.	Interactive classroom teaching, demonstration, quiz, assignments, tutorial.	Teacher will the contents provide hand students. Tea will conduct assignments/ quiz/tutorial students pract their knowled	and louts to acher to make	04	02			,	, chalk F, text bo	ook,	
			SC	HEME OF AS	SSESSMI	ENT							
S. No.	Metho	od of Assessment	Description of Asse	essment	Maxim Mark			Re	source	es Rec	quired		External / Internal
1	Pen Pape	er test/Theory Exam	Student will be asked to elaws and their applications		10		Test pap Questio	-	_		*		External
			ADDITIONAL INSTRUC	CTIONS FOR	R THE H	OD/ FA	CULT	Y (IF	ANY	7)			
				Nil									

R	RGPV (Dir	oloma Wing ) Bhopal	SCHEME FOR L		Bran	ch Code		Cou	rse Co	ode	CO Code	LO Code	Format No. 4
	` •	. 87 <b>1</b>	OUTCON	Æ.	C	0	2	3	0	3	3	2	
	URSE AME	CHEMICAL ENGINEERING STO	OICHIOMETRY										1
CO De	scription	Understand ideal gas laws a	and their application in che	mical engineer	ing operat	tions and	proces	ses					
LO Des	scription	Apply ideal gas law for cal-	culation of parameters in d	ifferent state.									
			SC	CHEME OF ST	ΓUDY								
S. No.	Lea	rning Content	Teaching – Learning Method	-	ption of T rocess	Γ-L	Tea Hr		Prac /Tu Hrs	ıt	LR Re	s quired	Remark
1	solving pro	Conditions, its application in oblems, concept of cy of mole percent and	Interactive classroom teaching, demonstration, quiz,	Teacher will e contents and p handouts to str	rovide	2	05		4		Handon board, text bo	•	k

# their knowledge. SCHEME OF ASSESSMENT

Teacher will conduct assignments/ quiz/tutorial to make students practice

assignments, tutorial.

volume percent of gases mixture.

<b>S.</b> 1	No. Method of Assessment	<b>Description of Assessment</b>	Maximum Marks	Resources Required	External / Internal
1	Pen Paper test/Theory Exam	Student will be asked to apply idal gas law at different conditions	10	(Test paper + Rating scale) and (Question paper +Rating scale)	External

ŀ	RGPV (Di	ploma Wing ) Bhop	al " Taran	OR LEARNING	Branc	h Code	Cou	ırse C	ode	CO Code	LO Code	Format No. 4
		6 · · · · · · · · · · · · · · · · · · ·	OUI	CCOME	C	0 2	3	0	3	4	1	
	URSE AME	CHEMICAL ENGINEER	ING STOICHIOMETRY	'						'		'
CO De	scription	Apply material bala	nce concept in common unit	operations and unit prod	esses.							
LO Des	scription	Prepare block diag	ram/process flow diagram	for commonly used un	operation	ons and	unit pro	cesse	s with	respect to	mass ba	alance
				SCHEME OF STU	D <b>X</b> 7							
				DOILD OF DEC	UΥ							
S. No.	Lea	rning Content	Teaching –Learning Method	Description of T- Process		Teach Hrs.	Pra /Tu Hr	ut	Ι	LRs Requir	ed	Remarks

#### SCHEME OF ASSESSMENT

their knowledge.

assignments/ quiz/tutorial to make students practice

diagram preparation

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Pen Paper test/Theory Exam	Student will be asked explain law conservation of mass in industrial context	10	(Test paper + Rating scale) and (Question paper +Rating scale)	Internal

RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING		Branch Code			de Course Code			Code	Code	Format No. 4			
	( <u>-</u>	,		OUTCOME		C	0	2	3	0 3		4 2			
	COURSE NAME CHEMICAL ENGINEERING STOICHION		NG STOICHION	ETRY							1				
CO Description Apply material balance concept in			nce concept in	t in common unit operations and unit processes.											
LO Des	cription	Apply material bala	nce concept to	derive relationship amo	ong materia	al inflov	w, outflo	ow and	l trans	forma	ation a	and solve	common	related problem	
				SCHEM	IE OF STU	JDY									
S. No.	S. No. Learning Content		Teaching – Learning Method		iption of T-L Process			each Hrs.	Pract. /Tut Hrs.		LRs Required		Remarks		
1	Processes involving no chemical reactions processes involving chemical reactions stoichio metric balance, concept of limiting and excess reactants, Tie and Key component, Overall balance, individual component balance, percentage conversion ,percent yield. Simple by-pass, recycle and purging operations, simple calculation on material balance for some common processes.		Interactive classroom teaching, demonstration, quiz, assignments, tutorial.	classroom Teacher will explain contents and providing handouts to student		vide ents. duct nake	15		10		Handouts, chalk board, PPT, text book, charts.				
	1			SCHEME (	F ASSES	SMEN'	T			<u> </u>					
S. No. Method of Assessment Descripti		tion of Assessment Maximum Mar		ırks	Resources Required Ex			Exterr	nal / Internal						

**SCHEME FOR LEARNING** 

Pen Paper test/Theory Exam

**Branch Code** 

CO

**Course Code** 

(Test paper + Rating scale) and

(Question paper +Rating scale)

LO

External

20

Student will be asked to apply

material balances in actual plant

practice problems

RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING OUTCOME		Branch Code		Course Code		CO Code	LO Code	Format No. 4			
			00100	MIE	C	0	2	2 3 0 3 5		5	1		
COURSE NAME CHEMICAL ENGINEERING STOICHIOMETRY													
CO Description Understand concept of energy balance and its application.													
LO Des	scription	Prepare process flow diag	gram for various unit	operations and p	rocesses	with re	spect to	o ener	gy bal	ance.			
				SCHEME OF	STUDY	•							
S. No.	Lear	ning Content	Teaching – Learning Method	Description of Process			Tea Hr	-	Pra /Tu Hr	ıt	LRs Requ	ıired	Remarks
1	Concept of	fenergy balance. Law of	Interactive	Teacher will exp	olain the		04		03		Handout	S.	

to students. Teacher will

quiz/tutorial to make students practice their knowledge.

conduct assignments/

PPT, text

book, charts,

thermophysics, physical properties

of matter, heat capacity, Latent

Energy balance flow diagram for

some common chemical processes.

heat:

teaching,

tutorial.

demonstration,

quiz, assignments,

#### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Pen Paper test/Theory Exam	Student will be asked to explain energy balance in industrial context	10	(Test paper + Rating scale) and (Question paper +Rating scale)	External

F	RGPV (Diploma Wing ) Bhopal		pal		IE FOR LEARNIN OUTCOME			ch Co	ode 2	Course Code  3 0 3		Code	LO Code 2	Format No. 4	
	COURSE CHEMICAL ENGINEERING STOIC			CHIOMETRY				0		3	U	)   3	5		
CO De	CO Description Understand concept of energy balance and its application														
LO Des	scription	Calculate heat of													
					SCHEME OF	STUDY									
S. No.	Lear	Teaching I earning Description of T.I. Teac Pract.		LRs Req	uired	Remarks									
1	law of the Standard heat of for	emistry, Hess's rmochemistry, neat of reactions mation, heat of n, calculation of action	teaching, demonstra	e classroom ation, quiz, ats, tutorial.	Teacher will explain contents and provide to students. Teacher conduct assignment quiz/tutorial to make practice their known	e handouts r will cs/ e students	e 07 03 Handouts, board, PPT, book, charts, udents		, PPT,	halk text					
					SCHEME OF AS	SESSMEN	T							,	
S. No.	Metho	od of Assessment	T.	Description of	Assessment	Maxim Mark				Re	esou	urces	Required		External / Internal
1	Pen Paper	test/Theory Exam		will be asked chemistry	to apply laws of	of 10 (Test paper + Rating scale) and (Question paper +Rating scale)					External				
			ADDI	ΓΙΟΝΑL INS	TRUCTIONS FOR	THE HOD	) F	ACUI	LTY	(IF A	NY	)			1
					Nil										

RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING	Branch Code		<b>Course Code</b>			CO Code	LO Code	Format No. 4	
		OUTCOME		0	2	3	0	3	5	3	
COURSE NAME	CHEMICAL ENGINEERING STOIC	HEMICAL ENGINEERING STOICHIOMETRY									
<b>CO Description</b>	Understand concept of ener	Understand concept of energy balance and its application									
LO Description	O Description Carry out combustion calculations										
	·		TIDX/								

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching –Learning Method	Description of T-L	Teach Hrs.	Pract. /Tut	LRs Required	Remarks
			Process		Hrs.		
1	Fuel and its classification, block	Interactive classroom	Teacher will explain	10	8	Handouts, chalk	
	diagram of combustion unit with respect	teaching,	the contents and			board, PPT, text	
	to matrial balance and energy balance.	demonstration, quiz,	provide handouts to			book, charts.	
	Calorific values of fuel, Net calorific	assignments, tutorial.	students.				
	value and gross calorific value of fuel,		Teacher will				
	simple calculation on calorific		conduct				
	values.determine theoritical and excess		assignments/				
	air required for combustion, C/H ratio of		quiz/tutorial to make				
	fuel, theoritical and excess air, simple		students practice				
	combustion calculation		their knowledge.				

#### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Pen Paper test/Theory Exam	Student will be asked to carry out combustion calculations	30	(Test paper + Rating scale) and (Question paper +Rating scale)	External