FORM 3

IV semester Chemical Engineering

OCBC SYLLABUS

SUBJECT

CHEMICAL TECHNOLOGY II

CO 1	Identify raw materials required for the manufacturing of specific chemical.	Hoursofstudy	Marks	
LO 1	To describe the technology adopted to produce saturated and unsaturated oil.	26		Α
	Oil Industry	8	10	
Conter	Difference between oil, fats and waxes			
	Preparation of raw materials for processes:			
	Refining			
	Bleaching			
	Major engineering problems of oil industries and their remedies			
	Economics.			
	By products and their uses.			
LO 2	To analyze the sample of oil	10	10	С
	Oil Industry			
	Preparation of raw materials for processes:			
	Extraction of oil			
	Hydrogenation of oil			
	Major engineering problems of oil industries and their remedies			
	Economics.			
LO 3	To determine the total fatty matter of soap	4	10	В
	Soap Industry			
	Manufacturing of soap and detergents			
	Physical and chemical properties of soap			
	Types of soaps.			
	Process description and flow chart of soap			
	Additives to soap in present practices and their function.			
	Major engineering problems			
	Uses and economics.			

LO 4	Apply knowledge of latest trends in soaps and detergent industries.	4	10	D
	Detergent Industry			
	Manufacturing of synthetic Detergents			
	types of detergents(quick wash 'top load 'front load etc)			
	Raw material and their selection.			
	Cleaning mechanism of soap and detergents.			
	Physical and chemicalproperties			
	Process description and flow chart			
	Major engineering problems			
	Consumption pattern and economics			

CO 2	Use latest technology for the manufacture of paper and dyes.	26		
LO 1	Convert the trees cellulose into usable pulp cellulose form.	16	10	А
	Introduction to pulp and paper.			
	Pulp			
	Pulping method Trees and quality of pulp from them.			
	Manufacture of pulp			
	Different processes adopted produce pulp and their comparison.			
	Physical and chemical properties			
	Process description and flow chart			
	Major engineering problems Uses and economics			
LO 2	Describe the techniques to form different qualities of paper.	6	10	Α
	· · · ·			
	Paper			
	Types of paper product Physical and chemical properties			
	Process description and flow chart			
	Description of fillers and components added to improve whiteness			
	strength and other properties with their functioning.			
	Recycling process of waste paper and its economics.			
	Major engineering problems			
	Uses and economics Consumption pattern and future scope of pulp and paper industries in view			
	of digitalization.			
LO 3	Apply basic knowledge of common fabricates and hair dyes.	4	10	В
	Dyes and Intermediate			
	Introduction			
	Classification of dyes			
СО	Manufacturing of some common dyes for fabric and hair.	26		
3	Apply the chemical reactions process conditions requirement for manufacturing polymer product.	20		
LO 1	Describe process of polymerization.	6	10	В
	Describe process of polymerization.			
	Polymerization Technology			
	Principles of polymerization			
	Types of polymerization and difference between them. Mechanism of polymerization			
	Methods of polymerization			
	Difference amongst monomer, polymer and resin			
	Difference amongst the fiber, filament and thread.			
LO 2	Select proper process conditions for getting maximum yield of	8	10	Α
	rubber			
	Rubber Industry Difference between natural and synthetic rubber			
	Compounding of rubber.			
	Manufacturing of Styrene-Butadiene Rubber (SBR)			
	Physical and chemical properties			
	Process description and flow chart			
	Major engineering problemsand economics			
	Vulcanization of rubber Processing of Rubber Latex			
	Rubber Reclaiming			
	nasser neoranning	I		

	T	T	Γ
To prepare phenol formaldehyde , urea formaldehyde and Nylon 6.	12	10	С
Plastic Industry			
Classification of plastic			
Introduction, uses, properties and recognition of polymer plastics like:-			
Nylon, LDPE, HDPE, PP, PET,PU, PVC, PVDC, ABS, PS AND Teflon			
Use some common industrial solvents appropriately.	18		
Prepare and use commonly used industrial solvents in the laboratory.	6	10	А
Industrial Solvents			
process description, major engineering problems, economics,			
Apply basic knowledge to identify the importance of the industrial solvents.	12	10	С
consumption pattern and industrial importance for the manufacturing of the following industrial solvents			
Methanol			
·			
Accide dela	24		
Annels, the besign entrainles of about its longing outing for the grand setting of	- '		
some agro based products.			
Prepare commonly used insecticides and pesticides in the laboratory.	12	10	D
Agro based Products and Explosives			
Basic principle, raw material, reactions, flow diagram, process description,			
major engineering problems, economics, consumption pattern and			
pesticides			
·			
·			
• •			
· ·			
Describe production of sugar crystals from cane sugar.	6	10	A
Sugar Industry			
Sugar Industry			
Sugar Industry Physical and chemical properties			
	Plastic Industry Classification of plastic Introduction, uses, properties and recognition of polymer plastics like:- Nylon, LDPE, HDPE, PP, PET,PU, PVC, PVDC, ABS, PS AND Teflon Use some common industrial solvents appropriately. Prepare and use commonly used industrial solvents in the laboratory. Industrial Solvents Industrial Solvents: basic principle, raw material, reactions, flow diagram, process description, major engineering problems, economics, Apply basic knowledge to identify the importance of the industrial solvents. consumption pattern and industrial importance for the manufacturing of the following industrial solvents Methanol Acetone N-Hexane Ethyl alcohol Acetic acid Apply the basic principles of chemical engineering for the production of some agro based products. Prepare commonly used insecticides and pesticides in the laboratory. Agro based Products and Explosives Basic principle, raw material, reactions, flow diagram, process description, major engineering problems, economics, consumption pattern and industrial importance for the manufacturing of the following.	Plastic Industry Classification of plastic Introduction, uses, properties and recognition of polymer plastics like:- Nylon, LDPE, HDPE, PP, PET, PU, PVC, PVDC, ABS, PS AND Teflon Use some common industrial solvents appropriately. Prepare and use commonly used industrial solvents in the laboratory. Industrial Solvents Industrial Solvents basic principle, raw material, reactions, flow diagram, process description, major engineering problems, economics, Apply basic knowledge to identify the importance of the industrial solvents. consumption pattern and industrial importance for the manufacturing of the following industrial solvents Methanol Acetone N-Hexane Ethyl alcohol Acetic acid 24 Apply the basic principles of chemical engineering for the production of some agro based products. Prepare commonly used insecticides and pesticides in the laboratory. Agro based Products and Explosives Basic principle, raw material, reactions, flow diagram, process description, major engineering problems, economics, consumption pattern and industrial importance for the manufacturing of the following. pesticides melathion Beta-Hexachlorocyclohexane (BHC) Parathion sulphos Explosives Tri Nitro Toluene (TNT) Nitroglycerine Research Department Explosive (RDX) fire crackers	Plastic Industry Classification of plastic Introduction, uses, properties and recognition of polymer plastics like:- Nylon, LDPE, HDPE, PP, PET, PU, PVC, PVDC, ABS, PS AND Teflon Use some common industrial solvents appropriately. Prepare and use commonly used industrial solvents in the laboratory. Industrial Solvents Industrial Solvents: basic principle, raw material, reactions, flow diagram, process description, major engineering problems, economics, Apply basic knowledge to identify the importance of the industrial solvents. Consumption pattern and industrial importance for the manufacturing of the following industrial solvents Methanol Acetone N-Hexane Ethyl alcohol Acetic acid 24 Apply the basic principles of chemical engineering for the production of some agro based products. Prepare commonly used insecticides and pesticides in the laboratory. Agro based Products and Explosives Basic principle, raw material, reactions, flow diagram, process description, major engineering problems, economics, consumption pattern and industrial importance for the manufacturing of the following. pesticides melathion Beta-Hexachlorocyclohexane (BHC) Parathion sulphos Explosives Tri Nitro Toluene (TNT) Nitroglycerine Research Department Explosive (RDX) fire crackers

LO 3	Process agriculture based starch production	6	10	Α
	Starch Industry Physical and chemical properties Process description and flow chart Major engineering problems Uses and economics			

Where

A --- Theory exam

B--- Internal Assessment

C --- Internal practical assessment

D --- Practical examination

List of Practicals

S.No.	NAME OF EXPERIMENT	CO	LO
1	Determine Iodine value of oil	1	2
2	Determine acid value of Oil	1	2
3	Determine saponification value of Oil.	1	2
4	Determine TFM (Total fatty matter) of soap	1	3
5	Prepare Azo dye and calculate its yield.	1	4
6	Prepare acid dyes and calculate its yield.	1	4
7	Prepare basic dyes and calculate its yield.	1	4
8	Prepare Phenol formaldehyde	3	3
9	Prepare Urea formaldehyde	3	3
10	Synthesize Nylon-6	3	3
11	Identification of methanol.	4	2
12	Identification of ethanol.	4	2
13	Identification of acetic acid.	4	2

RGPV ((Diploma V	Wing) Bhopal	E FOR LEARNI	NG OUTCOME		Branch	Code	e	Cou	ırse Co	ode	CO Code	LO Code	Format No. 4
						\overline{C}	0	2				1	1	
COU NA		CHEMICAL TECHNOLO	OGY – II		,	1		1					'	'
CO Des	scaription	Identify raw materia	ls required for the manuf	acturing of specific	chemic	al.								
LO Des	cription	To describe the techn	ology adopted to produce	saturated and uns	aturated	d oil.								
			SCHEME OF	STUDY										
S. No.	Learning	Content	Teaching –Learning Method	Description of Process	f T-L	Teach Hrs.		Pract. Fut Hr		LRs R	equire	ed	Re	emarks
1	Oil Industry Difference between oil, fats and waxes Preparation of raw materials for processes: Refining Bleaching Major engineering problems of oil industries and their remedie Economics. By products and their uses.		Interactive classroom teaching, demonstration, quiz, assignments, tutorial.	Teacher will exp the contents and provide handout students. Teache conduct assignm quiz/tutorial to r students practice knowledge.	ts to er will nents/ make	11 /			PPT, text book.				rd,	
			SCHEME OFASS	ESSMENT										
S. No.	Method o	of Assessment	Description of Assess	ment	aximu Marks		Re	esource	es Re	equirec	d			External / Internal
1	Theory E	xam	Theory questions re learned content will be university question	e asked in the	10		Question paper					External		
	'	ADDITIONAL IN	STRUCTIONS FOR T	THE HOD/ FAC	ULTY	(IF AN	Y)							'
			Nil											

RGPV	(Diploma	Wing) Bhopal	E FOR LEA	RNING OUTCOM	IE	Branc	ch Cod	Δ .	Cours Code	se		CO Code	LO Code	Format No. 4
						C	0	2				1	2	
COUR: NAME		CHEMICAL TECHNOL	OGY – II											'
CO Des	scription	Identify raw material	s required for manufac	cture of specific chemi	ical.									
LO Des	scription	To analyze the sam	ple of oil											
			SCHEME (OF STUDY										
S. No.	Learning		ing –Learning Method	iption of T-L Pro		'each Hrs.		act. t Hrs.	LRs	Req	uire	ed	Re	marks
1	processes: Extraction Hydrogena Major engi	of oil stion of oil neering problems of es and their remedies	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. Teacher will conduct lab assignments to make students practice their knowledge. Teacher will demonstrate the procedure of lab experiments		10	04		Handouts, chalk board, PPT, textbook.lab					
			SCHEME OF A	ASSESSMENT										
S. No.	Method	of Assessment	Description of Ass	sessment	aximun Marks	n	Reso	urces	Requi	red				External / Internal
1	Laborato	ry Test by observation	en Examiner will ask reading and then ca him and will asses result	alculate in front of	10		Ratin	ng Scal	е					External
		ADDITIONAL I	NSTRUCTIONS FO	OR THE HOD/ FAC	CULTY (IF AN	Y)							
			N	il										

RGPV (Diploma Wing) Bhopal		E FOR LEARNING	G OUTCOME	Branch Code			Course Code	CO Code	LO Code	Format No	
					C	0	2		1	3	
COUR: NAME		CHEMICAL TECHNO	DLOGY – II		'				'		
CO Des	scription	Identify raw materi	als required for manufactu	re of specific chemica	l.						
LO Des	scription	To determine the t	otal fatty matter of soap								
			SCHEME	OF STUDY							
S. No.	Learnin	g Content	Teaching –Learning Method	Description of T-L Process		Tea	ch Hrs	Pract. /Tut Hrs.	LRs Required	l Rema	rks
	Soan Indi	ıctrv	Interactive	Teacher will explain	n the	04		04	Handouts cha	1k	

o. Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
Soap Industry Manufacturing of soap and detergents Physical and chemical properties of soap Types of soaps. Process description and flow chart of soap Additives to soap in present practices and their function. Major engineering problems Uses and economics.	Interactive classroom teaching, demonstration, quiz, assignments, tutorial Lab assignments, presentation, lab demonstration, hands on practice.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	04	04	Handouts, chalk board, charts,	

1.2.1

S. No.	Method of Assessment	Description of Assessment	aximum Marks	Resources Required	External / Internal
1	Paper Pen Test	Theory question (including simple numerical problem) related to the learned content will be asked in the test paper	10	Test Paper + Rating Scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

RGPV (Diploma W	ing) Bhopal	E FOR LEAR	NING OUTCOM	IE Bran	ch Co	ode	C	ourse C	ode	CO Code	LO Code	Format No. 4
					C	0)	2			1	4	
OURSE NAME	E	CHEMICAL TECHNOLOGY	′-II		'	'		·			'	'	
CO Des	cription	dentify raw materials re	quired for manufacture	of specific chemica	al.								
O Des	cription A	Apply knowledge of la	test trends in soaps an	nd detergent indust	tries.								
			SCHEME OF S	STUDY									
S. No.	Learning (Content	ing –Learning Method	iption of T-L Pr	ocess	l'eac Hrs.		/	Pract. Fut Hrs	S.	LRs Re	quired	Remarks
1	types of det load 'front l' Raw materia Cleaning me detergents. Physical and Process des or engineer	of synthetic Detergents tergents(quick wash 'top oad etc) al and their selection. echanism of soap and		Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutor to make students practitheir knowledge. Teach will conduct lab assignments to make students practice their knowledge. Teacher will demonstrathe procedure of lab experiments		04	s. / Tut Hrs.		PT, text				
			SCHEME OF ASSI										
S. No.	Method of	Assessment D	escription of Assessr		Maximun Marks	n l	Resc	ources	Requir	ed			External / Internal
1	observation reading him a		ading and then calcul	ner will ask to students to take g and then calculate in front of id will asses correctness of result		10 Ra		Rating Scale					Internal
		ADDITIONAL INST	RUCTIONS FOR T	THE HOD/ FACU	JLTY (IF	ANY	<u> </u>						
			Nil										

RGPV (SPV (Diploma Wing) Bhopal			E FOR LEARNING	OUTCOME	Brancl	ı Coc	de	Co	urse Co	ode	CO Code	LO Code	Format No. 4
	(F	··· g / = ·F ··-				C	0	2				2	1	
COU		CHEMICAL TECHNO	DLOGY – I	I		'						'		
CO Des	cription	Use latest technol	ogy for t	he manufacture of pa	per and dyes.									
O Des	cription	Convert the trees	cellulose	into usable pulp cell	ulose form.									
				SCHEME OF STU	J DY									
S. No.	Learning	g Content		ing –Learning Method	iption of T-I	Process	Геас	h Hr	C	act. ut Hrs.	LF	Rs Requir	ed	Remarks
1	Introduction to pulp and paper. Pulp Pulping method Trees and quality of pulp from them. Manufacture of pulp Different processes adopted produ pulp and their comparison. Physical and chemical properties Process description and flow chart Major engineering problems Uses and economics engineering problems.		them. produce	Interactive classroom teaching, demonstration, quiz, assignments, tutorial.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutoria to make students practic their knowledge.		16		01			andouts, cand, PPT, ok,		
			SC	CHEME OF ASSES	SMENT									
5. No.		of Assessment		ription of Assessmen		Maximum Marks	R	esou	rces l	Require	ed			External / Internal
1	Theory E	xam	conte	ry questions related to ent will be asked in the cion paper		10	Q	uesti	on pa	per				External
		ADDITIONAL	INSTRU	JCTIONS FOR THI	E HOD/ FAC	ULTY (IF A	. NY)							
				Nil										

RGPV	(Diploma	a Wing) Bhopal	E :	FOR LEARNING O	OUTCOME	Branc	h Cod	e	Cou	rse Codo	e CO Code	LO Code	Format No. 4
	` •	3 / 1				C	0	2			2	2	
COUI NAM		CHEMICAL TECHNO	DLOGY – II					·				·	
CO Des	scription	Use the latest tech	nology for the	manufacture of paper	and dyes.								
O Des	scription	Describe the techn	iques to form	different qualities of pa	aper.								
			SCH	EME OF STUDY									
S. No.	Learnin	g Content		Teaching – Learning Method	Descript Pr	ion of T ocess	Γ-L	Teach Hrs.		Pract. /Tut Hrs.	LRs Re	quired	Remarks
1	Physical a Process of Description added to other pro- Recycling economic Major en Uses and Consump	es of paper product sical and chemical properties ess description and flow chart cription of fillers and components ed to improve whiteness strength and er properties with their functioning. It is process of waste paper and its nomics. Or engineering problems and economics cumption pattern and future scope of and paper industries in view of		demonstration, quiz, assignments, tutorial.	Method Teacher wil			06	1		Handou board, c lab.	,	
			SCHEM	E OF ASSESSMEN								L	
S. No.	Method	of Assessment	Description	on of Assessment	laximı Mark		Resou	irces R	equire	ed			ernal / ternal
1	Theory I	Exam	learned co	estions related to the ntent will be asked in question paper	the 10		Quest	ion pap	er			Ex	ternal
	A	ADDITIONAL IN	STRUCTIO	ONS FOR THE HOD) FACULT	Y (IF A	ANY)						
				Nil									
			E FC	OR LEARNING OU'	ГСОМЕ	Brancl	ı Code	. (Course	e Code	CO Code	LO Code	e

	JRSE ME	CHEMICAL TECHNOL	OGY – II							
CO De	scription	Use latest technolog	y for the manufacture of pa	per and dyes.						
LO De	scription	Apply basic knowled	ge of common fabricates an	d hair dyes.						
			SCHEME OF S	STUDY						
S. No.	Learning (Content	ing –Learning Method	iption of T-L F	rocess	leach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks	
1	Dyes and Int Introduction Classification manufacturin dyes for fabr	n of dyes ng of some common	Interactive classroom teaching, demonstration, quiz, assignments, tutorial. lab demonstration	and provide har	nduct assignments make students	04	board, PPT, to			
			SCHEME OF ASS	ESSMENT						
S. No.	Method o	f Assessment	Description of Assessi	ment	laximum Marks	Resources	Required	n	ternal	
1	Paper Pen	Test	Theory question (inc numerical problem) is learned content will be test paper	related to the	10	Test Paper	+ Rating Scale	Ir	nternal	
		ADDITIONAL I	NSTRUCTIONS FOR T	HE HOD/ FAC	CULTY (IF ANY)			·		
			Nil							

RGPV	(Diploma	Wing) Bhopal		E FOR LEA	ARNING OUTCOM	_		h Code		Course Co	ode	CO Code	LO Code	Format No. 4
						C	<u>'</u>	0	2			3	1	
COURS NAME		CHEMICAL TECHNOLO	.OGY - II											
CO Des	scription	Apply the chemical	l reaction	s process cond	ditions requirement f	for manufa	cturii	ng poly	mer j	product.				
LO Des	scription	Describe process of	of polyme	rization.										
				SCHEME O	F STUDY									
S. No.	Learning	ng Content	Lea	ching – arning lethod	Description Proce			Tea Hrs		Pract. /Tut Hrs.	LRs	s Require	ed	Remarks
1	1 Unit-3.0 Polymerization Technology Principles of polymerization Types of polymerization and difference between them. Mechanism of polymerization Methods of polymerization Difference amongst monomer, polymer and resin Difference amongst the fiber, filament and thread.		teaching demonst assignme	tve classroom f, tration, quiz, ents, tutorial. onstration	and provide handout Teacher will conductorial.		outs to students. luct assignments/ ake students			01	boar	Handouts, c board, PPT, book, charts.la		
			SC	HEME OFA	SSESSMENT									
S. No.		of Assessment	Descri	iption of Asses	ssment	Maximur	n Ma	rks	Res	ources Requ	uired		Ex	ternal / Internal
1	Paper Per	n Test			d content will	10			Test	t Paper + Ra	ting S	cale	Int	ernal
		ADDITIONAL T	INSTRU	CTIONS FO	R THE HOD/ FAC	CULTY (I	FAN'	r)						

Nil

RGPV	(Diploma	Wing) Bhopal	E FOR LEARNING	GOUTCOME	Branc	h Code	9	Course	e Code	CO Code	LO Code	Format No. 4
		<i>57</i> 1			C	0	2			3	2	
OURSI NAME		CHEMICAL TECHNOLOG	Y – I I									'
CO Des	scription	Apply the chemical rea	actions process condition	ns requirement fo	or manufa	acturing	g polym	er produ	ıct.			
LO Des	cription	Select proper process	conditions for getting ma	aximum yield of	rubber.							
			SCHEME OFST	UDY								
S. No.	Learning	g Content	ing –Learning Method	iption of T-L P	rocess		leach Hrs.		Pract. 'ut Hrs.	LRs Re	quired	Remarks
1	Learning Content Rubber Industry Difference between natural and synthetic rubber Compounding of rubber. Manufacturing of Styrene-Butadiene Rubber (SBR) Physical and chemical properties Process description and flow chart Major engineering problems and economics Vulcanization of rubber Processing of Rubber Latex Rubber Reclaiming		demonstration	to students. Teaconduct assignm quiz/tutorial to r practice their kn	ovide han cher will nents/ nake stud	dents	08	01		Handout board, P text boo charts,	PT,	
			SCHEME OFASSES	SSMENT	N/							E-41/
S. No.	Method	of Assessment	Description of Assessme	ent	Maxim Mark		Resour	ces Rec	quired			External / Internal

10

External

Question paper

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IFANY)

question paper

Theory Exam

Theory questions related to the learned

content will be asked in the university

RGPV	(Diploma '	Wing) Bhopal		E FOR LEA	RNING OUTCOME	E Bran	ch Coo	le	Cour	se Cod	e CO Code	LO Code	Format No. 4
						C	0	2			3	3	
COU NA		CHEMICAL TECHNO	DLOGY –	II							·	·	
CO Des	scription				itions requirement for		ing pol	lymer	produ	ct.			
LO Des	cription	To prepare pheno	l formal	ldehyde , urea for	maldehyde and Nylon	6.							
				SCHEME OF	STUDY								
S. No.	Learning	g Content	ing –L	earning Method	iption of T-L Proces	SS	leach Hrs.	Pra /Tu Hr		LRs	Require	d	Remarks
1	Introducti properties polymer p LDPE, HDF	tion of plastic	teachin quiz, as tutorial demons	ssignments, l. lab stration	Teacher will explain contents and provide students. Teacher will assignments/ quiz/tut make students practic knowledge. Teacher conduct lab assignments tudents practice their knowledge	handouts to ill conduct corial to ce their will ents to make	12	08		boar	douts, d, PPT, x, charts,	chalk text	
			S	SCHEME OF AS	SESSMENT	L .							
S. No.		of Assessment		scription of Asses		laximum Marks	R	esou	rces R	equired			External / Internal
1	Laborato	ry Test by observat	reac		culate in front of him	10	R	ating	Scale				External
		ADDITIONAL	INSTR	RUCTIONS FOR	THE HOD/ FACUI	TY (IF AN	Y)						
				Nil									

RGPV (Diploma Wing) Bhopal		E FOR LEAR	NING OUTCOME	Branc	Branch Code (Course Code		LO Code	Format No. 4
									4	1	
COURSE NAME	CHEMICAL TECHNO	DLOGY – II							1		
CO Description	Use some commo	n industrial solvents approp	oriately.								
LO Description	Prepare and use co	mmonly used industrial solve	nts in the laboratory.								
		SCHEME OF S	TUDY								
S No Loornin	a Contont	ing -Learning Method	iption of T-L Pro	cess	Feach	. ıcı	t./Tut	r D	e P oguiro	J	Domorks

S. No.	Learning Content	ing –Learning Method	iption of T-L Process	leach Hrs.	ct. /Tut Hrs.	LRs Required	Remarks
1	Unit-4.0 Industrial Solvents Industrial Solvents: basic principle, raw material, reactions, flow diagram, process description, major engineering problems, economics,	Interactive classroom teaching, demonstration, quiz, assignments, tutorial. lab demonstration	contents and provide		02	Handouts, chalk board, PPT, text book, charts	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	[aximum Marks	Resources Required	External / Internal
1		Theory questions related to the learned content will be asked in the university question paper	10	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

nil

RGPV	GPV (Diploma Wing) Bhopal		E FOR LEARNI	ING OUTCOME	Branch	Cod	e	Course Co		CO Code	LO Code	Format No. 4	
	` 1	87 1			C	0	2			4	2		
COU NA		CHEMICAL TECHNOL	OGY – II	'					,		1		
CO Des	scription	Use some common	industrial solvents appropri	iately.									
LO Des	scription	Apply basic knowle	edge to identify the importa	nce of the industrial solv	ents.								
			SCHEME OF ST	UDY									
S. No.	Learning	Content	Teaching –Learning Method	Description of T-L Process	Teac Hrs.			act. Hrs.	LRs Re	quired		Remarks	
l	importanc		Fermentation process and its importance in chemical	Teacher will explain th contents and provide handouts to students.	e 12		()8		ts, chalk xt book, c			

Teacher will conduct

quiz/tutorial to make

students practice their

assignments/

knowledge.

SCHEME OF ASSESSMENT

industrial solvents

Methanol

Acetone

N-Hexane

Acetic acid

Ethyl alcohol

S. No.	Method of Assessment	Description of Assessment	aximum Marks	Resources Required	External / Internal
1		Examiner will ask to students to take reading and then calculate in front of him and will asses correctness of result	10	Rating Scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nil

RGPV (Diploma Wing) Bhopal		E FOR				Branch Code		Course Code		CO Code	LO Code Fo	Forma	at No. 4	
COURSE CHEMICAL TECHNOLOGY –					GY – II	<u> </u>	0	2			5	1		
·	cription	Apply the basic princip	les of chemical	engineering for the p	production o	f some ag	ro based	d produ	cts.					
LO Des	cription	Prepare commonly us			the laborate	ory.								
			SCHE	ME OFSTUDY										
S. No.	Learnin	g Content		ing –Learning Method	iption o			leach Hrs.		Pract. /Tut Hr		Rs Requi	red	Remarks
	b Basic pr diagram, problems industrial following pesticides melathion Beta-Hex parathion sulphos Explosive Tri Nitro T Nitroglyce Research fire crack	s n achlorocyclohexane (BH n s Foluene erine Department Explosive (R	actions, flow or engineering on pattern and ufacturing of th	classroom teaching, demonstrat eion, quiz, assignment s, tutorial.	contents handout Teacher assignm quiz/tute students knowled will con assignm	prial to m practice lge. Teac duct lab ents to m practice	vide ents. duct ake their her	12	02			ndouts, o		
	l		SCHEME	OFASSESSMEN	$\overline{\mathbf{T}}$									1
S. No.	Method	of Assessment		of Assessment	M	laximum Marks	Res	sources	Requ	ired			Exter Inter	

1	Laboratory Test by observation	Examiner will ask to students to take reading and then calculate in front of him and will asses correctness of result	10	Rating Scale	Internal			
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)								

RGPV (Diploma Wing) Bhopal OURSE NAME CHEMICAL TECHNOLOGY – II			E FOR LEARNING OUTCOME		Brancl	Branch Code			Course Code		LO Code	Format No. 4	
						\boldsymbol{C}	0	2			5	2	-
			DLOGY – II			'					'		
CO Description		Apply the basic principles of chemical engineering for the production of some agrobased products.											
LO Des	cription	Describe producti	on of suga	ar crystals from cane									
S. No. Learnin		g Content ing –L		-Learning Method iption of		L Process Teach			Pract. Fut Hrs.	LRs	Require	ed	Remarks
	propertie Process d chart Major eng	nd chemical	teaching demons	ive classroom g, tration, quiz, nents, tutorial.	Teacher will contents and handouts to so Teacher will assignments/ to make stude their knowled	provide tudents. conduct quiz/tutoria ents practice		02		Hand PPT		alk board	
			SC	HEME OFASSES	SMENT								
S. No.	Method	of Assessment	Desci	ription of Assessme	nt	Maximum Marks	Reso	urces	Required	l			External / Internal

Theory Exam 1	Theory questions related to the learned content will be asked in the university question paper	10	Question paper	External
ADDITIONAL IN	STRUCTIONS FOR THE HOD/ FAC	ULTY (IF ANY		

RGPV (Diploma Wing) Bhopal		E FOR LE	CARNING OUTCOME	Brancl	Branch Code		Course Code		CO Code	LO Code	Format No. 4	
× 1						0	2			5	3	
COURSE NAME CHEMICAL TECHNOLOGY – II												
CO Desc	cription	Apply the basic princip	les of chemical engir	neering for the production of	some agro	bas	sed pr	oducts	i.			
LO Description Process agriculture based starch production.												
			SCHEME (OF STUDY								
S. No.	Learning) L ANIENI	g –Learning ethod	iption of T-L Process	leach Hrs.		Pra /Tu Hrs	ıt	LRs Re	quired		Remarks

1	Starch Industry	Interactive	Teacher will explain the	06	01	Handouts, chalk board,		
	Physical and chemical	classroom teaching,	contents and provide			charts, video film, .		
	properties	demonstration,	handouts to students.					
	Process description and flow	quiz, assignments,	Teacher will conduct					
	chart	tutorial.	assignments/ quiz/tutorial					
	Major engineering problems		to make students practice					
	5.4.5 Uses and economics		their knowledge.					

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	laximum Marks	Resources Required	External / Internal
1	Theory Exam	Theory questions related to the learned content will be asked in the university question paper	10	Question paper	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

Nli