# RAJIV GANDHI PROUDYOGIKI VISHVAVIDYALAYA (DIPLOMA WING) BHOPAL P05 DIPLOMA IN PRODUCTION ENGINEERING PART A: - PROCESS OF CURRICULUM DEVELOPMENT

#### LIST OF IDENTIFIED PROFESSIONAL ROLES

- 1. To apply knowledge of mathematics, science, and engineering.
- 2. To design and conduct experiments, as well as to analyze and interpret data.
- 3. To design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- 4. To function on multidisciplinary teams.
- 5. To identify, formulate, and solve engineering problems.
- 6. To understand professional and ethical responsibility.
- 7. To communicate effectively.
- 8. To understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- 9. To engage in lifelong learning.
- 10. To use the techniques, skills, and modern engineering tools necessary for engineering practice.

## LIST OF SELECTED TERMINAL BEHAVIORS

- 1. To apply knowledge of mathematics, science, and engineering.
  - TB-1 Make use of quality management and statistical quality control techniques.
  - TB-2 Explain management, materials management and its techniques
- 2. To design and conduct experiments, as well as to analyze and interpret data. NIL
- 3. To design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
  - TB-1 Use work study techniques to improve organizational Process.
  - TB-2 Make use of quality management and statistical quality control techniques
  - TB-3 Explain management, materials management and its techniques.
- 4. To function on multidisciplinary teams. NIL
- 5. To identify, formulate, and solve engineering problems NIL
- 6. To understand professional and ethical responsibility. NIL
- 7. To communicate effectively. NIL
- 8. To understand the impact of engineering solutions in a global, economic, environmental, and societal context. NIL
- 9. To engage in lifelong learning.
  - TB-1, Use work study techniques to improve organizational Process
  - TB-2, Explain Material Handling Systems and Plant Layout.
  - TB-3, Make use of quality management and statistical quality control techniques.
  - TB-4, Explain Production planning and control
  - TB-5, Explain management, materials management and its techniques
- 10. To use the techniques, skills, and modern engineering tools necessary for engineering practice. NIL

## **COs FOR SELECTED TERMINAL BEHAVIORS**

- To apply knowledge of mathematics, science, and engineering. TB-1, Explain Production planning and control CO2: Calculate time estimates using CPM, PERT techniques CO3: Use a SQC technique for process control of a given application
- 2. To design and conduct experiments, as well as to analyze and interpret data. NIL
- 3. To design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability. NIL
- 4. To function on multidisciplinary teams. NIL
- 5. To identify, formulate, and solve engineering problems. NIL
- 6. To understand professional and ethical responsibility. NIL
- 7. To communicate effectively. NIL
- 8. To understand the impact of engineering solutions in a global, economic, environmental, and societal context.NIL
- 9. To engage in lifelong learning.
  - TB-1, Use work study techniques to improve organizational Process.
  - CO2: Use an appropriate time study, work measurement technique in a given
  - TB-2, Explain Material Handling Systems and Plant Layout
  - CO2: Prepare a plant layout for a given layout problem
  - TB-3, Explain management, materials management and its techniques

C05: Determining the Manufacturing Sequence and Prepare the documents for process planning

10. To use the techniques, skills, and modern engineering tools necessary for engineering practice.NIL

#### CO GROUPING AND COURSE FORMATION

#### **COURSE NAME: - Industrial Engineering & Quality Control (601)**

(Total 100 Hrs. Total 100 Marks)

## LIST OF COs:-

CO1: Use work study techniques to improve organizational Process. (20Hrs, 20 marks)

CO2: Explain Material Handling Systems and Plant Layout. (20Hrs, 20 marks)

CO3: Make use of quality management and statistical quality control techniques. (20Hrs, 20 marks)

C04: Explain Production planning and control. (20Hrs, 20 marks)

C05: Explain management, materials management and its techniques. (20Hrs, 20 marks)

## LOs FORMATION

## COURSE NAME: - Industrial Engineering & Quality Control (601) (Total 100 Hrs. Total 100 Marks)

#### List of COs and Los

#### CO1: Use work study techniques to improve organizational Process. (20hrs, 20 marks)

- LO1: Use relevant recording techniques for a given process to calculate productive and non-productive time with justification. (10Hrs, 10 marks)
- LO2: Use an appropriate time study, work measurement technique in a given situation (10Hrs, 10 marks)

### CO2: Explain Material Handling Systems and Plant Layout. (20hrs, 20 marks)

- LO1 Select a material handling system for a given application. (10Hrs, 10 marks)
- LO2: Prepare a plant layout for a given layout problem (10Hrs, 10 marks)

### CO3: Make use of quality management and statistical quality control techniques. (20hrs, 20 marks)

LO1 Describe quality management and its techniques. (10Hrs, 10 marks)

LO2: Use a SQC technique for process control of a given application. (10Hrs, 10 marks)

### CO4: Explain Production planning and control. (20 Hrs, 20 marks)

LO1: Explain functions and elements of PPC (10Hrs, 10 marks)

LO2: Calculate time estimates using CPM, PERT techniques. (10Hrs, 10 marks)

#### CO5: Explain management, materials management and its techniques (20Hrs, 20 marks)

LO1: Describe management, its principles, and functions. (10Hrs, 10 marks) LO2: Explain inventory control techniques for a given application (10Hrs, 10 marks)

D GDU	<i>(</i> <b>21</b> 1											
RGPV Bhopa	(Diploi l	ma Wi	ng)	COL	JRSE PLAN		For	mat -2			Sheet No 1/1	).
Cour	rse Nam	ne	Industr	ial Eng	gineering & Qu	ality C	ontrol	Seme	ester		SIXTH	[
Branch	PR EN	ODUC IGINE	CTION ERING		Course Code	601	No. of	Cos	05	N	o. of LOs	10
Total H Teachin Learnin	rs. of ng g	100	Total Marks	100	Total no. of Assessments		Types Assess	of sments		I As	No. of External sessments	
			D	ESCRI	PTION OF OU	TCOM	ES				T-L Hrs.	Max Mark s
CO 1	P0560	11	Use Wor	rk Stud	•	20	20					
	PO560	)111	Use relevent	vant recover ve and n		10	10					
Los	PO560	)112	Use an agiven sit	ppropria uation		10	10					
CO 2	P0560	12	Explain Measure	Materia es.	al Handling Syst	ems, Pl	ant Layo	out and S	afety		20	20
	PO560	0121	Select a	material	handling system	for a give	ven appli	cation.			10	10
Los	PO560	0122	Prepare a	a plant la	ayout for a given	layout p	roblem				10	10
CO 3	P0560	13	Make us techniqu	e of qua ies.	ality managemer	nt and s	tatistical	quality o	contro	1	20	20
	PO560	0131	Describe	quality	management and	its tech	niques				10	10
Los	PO560	0132	Use a SQ	QC techr	nique for process	control	of a giver	applicat	ion.		10	10
CO 4	P0560	14	Explain	Produc	tion planning an	d contr	ol.				20	20
Los	PO560	)141	Explain	function	s and elements of	PPC					10	10
	PO560	0142	Calculate	alculate time estimates using CPM, PERT techniques.								10
CO 5	P0560	15	Explain	manag	ement, materials	manag	ement ar	nd its tec	hniqu	es.	20	20
Los	PO560151Describe management, its principles, and functions.1								10	10		
LUS	PO560	0152	Explain i	inventor	ry control techniq	ues for a	ı given ap	plication			10	10

#### PART B: - CURRICULUM OF PRODUCTION ENGINEERING

RGPV (DIPL WING) BHO	GPV (DIPLOMAOCBC CURRICULUM FOR THE COURSEFORMAT- 3/ING) BHOPALCOURSE						Sh	eet No. 1/3			
Branch	PROD	UCTI	ON ENGINEER	ING	Semest	er		SIXTH			
Course Code	601		Course Name		Industrial E Quality Cor	ngineeı ntrol	ring &	Teach Hrs	Marks		
CO 1	Use Wo	ork Stu	ıdy techniques to	improv	e organizationa	al proce	sses.	20	20		
LO 1	Use rel product	levant i ive and	ecording technique l non-productive ti	es for a me with	given process to justification.	o calcula	ite	10	10		
CONTENT	Method work, R process Travel c of Motio	Study Recordi chart, chart, I on Eco	r: Definition, obje ng techniques: class flow process cha Micro-motion Stud nomy.	ectives, ssificatio art, mul ly, Therl	basic procedure on, and introduc tiple activity ch oligs, Two hand	es using etion of c nart, flo process	g 5W tech different te w diagran s chart/SIN	nique. Se echniques is, string IO Chart.	election of : operation diagrams, Principles		
Method of Assessment		Paper pen test									
LO 2	Use an a situation	se an appropriate time study, work measurement technique in a given 10 10									
CONTENT	Work M procedu work c Samplir Perform calculat advanta	Measur ire. Storycle, and ng. mance tion of iges an	ement: Definition op watch time stud methods of time rating, standard rat basic time, stan d limitations.	, proceed ly, types measur ting, rati dard tir	lure of work n s of stop watch, ement, Definiti ing scales, rating ne. Synthesis 1	easuren qualifie on of 1 g factors nethod-	nent. Time ed and rep PMTS, M s, Allowan meaning,	e Study: resentativ IM, MO ces- purp data, co	definition, e workers, ST, Work oose, types, ompilation,		
Method of Assessment				P	aper pen test						
CO 2	Explain Measur	n Mate res.	rial Handling Sys	stems, P	lant Layout an	d Safet	y	20	20		
LO 1	Select a	n mater	ial handling systen	n for a g	iven application	1.		10	10		
CONTENT	Materia handling Materia	ll Hand g syste ll, class	ling: Importance a m, objectives, func ification and selec	nd its ef ctions, A tion of 1	fects on produc Analysis: Justific naterial handlin	tivity, re ation of g equipr	equirement need, Loc nent.	t of good cation, Ty	material pe of		
Method of Assessment					Paper pen test						
LO 2	Prepare	a plan	t layout for a giver	n layout	problem.			10	10		
CONTENT	Plant La layout, F Shop La plant loc	yout: I Factors yout ad	mportance and its ef affecting plant layou vantages and limitat	ffects on it, types of tions of e	productivity, req of layout, Process ach type of layou	uirement , Product t, selection	t of a good , Fixed post on of layou	layout. E ition, Cellu t, factors a	ffect of bad ular and Job iffecting the		
Method of Assessment		Paper pen test									

RGPV (DIPL WING) BHC	IPLOMA HOPALOCBC CURRICULUM FOR THE COURSEFORMAT- 3Sheet No. 2/3										
Branch	PROD	UCTI	ON ENGINEERING	Semest	er		SIXTH				
Course Code	601		Course Name	Industrial E Quality Cor	nginee ntrol	ring &	Teach Hrs	Marks			
CO 3	Makeu	ise of o	quality management and	statistical qual	ity cont	rol technio	ques.				
LO 1	Describ	e qual	ity management and its tec	chniques			10	10			
CONTENT	Quality design, rework KAIZE	Mana and qu and 1 N, 5S.	gement: Meaning of qua uality of conformance. Co repair, quality circle. Co Introduction to ISO 9000,	lity, classification oncept of reliabit oncept of Tota ISO 14000.	on, qua lity, Cos l Quali	lity charac st, Quality ty Manage	eteristics, Assuran ement, S	quality of ce, Cost of ix Sigma,			
Method of Assessment		Paper pen test									
LO 2	Use a S	QC teo	chnique for process contro	l of a given appl	ication.		10	10			
CONTENT	Statistic natural frequen calculat Normal toleranc Charts f Attribut constru- revised	cal Qua variati cy dis ions. Curve ce, pro- for var tes: Li ction, values	ality Control: definition, is importance to qua stribution, measures of e: Definition, characteristic iccess capability and their iables, construction, interpretation of X and R char interpretation and use of a of mean, and control limit	inspection and c lity control, basic central tendend cs, calculation of r calculation. Corretation and use rts, Meaning an p- chart, c- charts ts and their calculation	uality c ic tools cy and of area u control of X an d use c art, np-c ulation	control, con of SQC ar dispersion under norm Charts for d R Charts of attribute chart. Need	ncept of nd their a n, their nal curve Variable s. Control s, their a d of calc	variability, pplication, need and , statistical es: control Charts for dvantages, ulating the			
Method of Assessment			Ι	Paper pen test							
CO 4	Explain	ı Prod	uction planning and con	trol.			20	20			
LO1	Explain	functi	ions and elements of PPC				10	10			
CONTENT	Types of Quantit Product Schedu	of Prod y (EE ion P ling; D	luction: Mass, Batch and J BQ) Production Planning lanning and Control; Pr Dispatching and Controlling	ob Order Produc g and Control: e planning; M g	tion; Cl Introc ethods	naracteristi luction; M of forecas	cs; Econo Iajor fu sting; Ro	omic Batch nctions of outing and			
Method of Assessment	Paper pen test										
LO 2	Calcula	te time	e estimates using CPM, PE	RT techniques.			10	10			
CONTENT	Concep Technic	t of N que (PI	etworking- Critical Path ERT).	Method (CPM)	and Pro	ogram Eva	luation a	nd Review			
Method of Assessment	Paper pen test										

RGPV (E WING) I	DIPLO BHO	OMA PAL	(	OCBC CURRICULUM FOR THE COURSE				Sheet No. 3/3		No.	
Branch		PROD	UCTI	ON ENGINEERING	Semest	er		S	IXTH		
Course Co	ode	601		Course Name	Industrial E Quality Cor	ngineeı ıtrol	ring &	<b>T</b>	each Hrs	Μ	larks
CO 5		Explain	n mana	agement, materials mana	gement and its	techniq	ues.		• •		• •
			20 20								
LO 1		Describ	escribe management, its principles, and functions. 10 10								
CONTEN	ЛТ	Definiti Functio Line an	ion of ons of d staff	Management; Adminis Manager; Types of Orgar and committee type; Direc	tration; Organi nization: Line, S cting.	zation; Staff, Ta	Principles aylor's Put	re :	of Ma functio	nage nal	ement; types;
Method of	f			F	aper pen test						
Assessme	nt										
LO 2		Explain	inven	tory control techniques for	a given applica	tion			10		10
CONTEN	ЛТ	Materia quantity invento	aterial Management: Introduction, function, purchase systems, stock turn-over, ordered antity, EOQ. Inventory need of inventory control, Safety stock, different techniques of ventory control, ABC analysis- VED Analysis (simple treatment only).								
Method of Assessme	f nt	Paper pen test									

RGI Wi	RGPV (DiplomaSCWing) BhopalLIOO		EME FOR ARNING TCOME	Branch Code P05	Course Code 601	CO 01	LO <mark>01</mark>	]	Format No. 4
COUR	RSE NAME	Industri	al Engineerii	ng and Quality	y Control				
CO De	escription	Use Wor	k Study techn	iques to impro	ve organizat	ional proc	cesses.		
LO De	escription	Use relevent non-prod	vant recording luctive time w	g techniques for with justification	r a given pro n.	cess to ca	lculate	produc	tive and
			SCH	HEME OF STU	JDY		1		
SNo. Learning Content Teaching/ Descrip   Learning of T-L   Method Process   Method Study: Definition, Traditional					Teach Hrs.	Pract. /Tut Hrs.	LRs Requi	red	Remarks
1	Method Study: Definition, objectives, basic procedures using 5W technique. Selection of work, Recording techniques: classification and introduction of different techniques: operation process chart, flow process chart, flow diagrams, string diagrams, Travel chart, Micro-motion Study, Therbligs, Two hand process chart/SIMO Chart. Principles of Motion Economy.		Teacher will explain the contents. Teacher will conduct Progressive test/ give Assignment	10		Hando Book.	ut,		
			SCHEM	IE OF ASSES	SMENT				
S. No	Method of Assessment	E A	Description of Assessment	f	Maximum Marks	Resou Requ	urces ired	Exter Inter	mal / nal
1 Paper pen test/ For the given learning of Students write answer questions				g content, er of	10	Progres test/ semest exam/	ssive End ter	Intern /Exte	nal ernal
	ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)								

CO1	:LO2										
RG W	PV(Diploma ing) Bhopal	SCHE LEAF OUTO	ME FOR NING COME	Branch Code P05		Course Code 601	C( 01	0 1	LO <mark>02</mark>	For No	mat <mark>5. 4</mark>
COU	JRSE NAME	Indust	rial Enginee	ring and Qu	ıali	ty Control	1				
CO	Description	Use W	ork Study tec	hniques to in	mpi	rove organi	izatio	onal pro	cesses		
LO	Description	Use an	appropriate t	ime study, w	vorl	k measuren	nent	techniq	ue in a gi	iven si	tuation
			SCH	HEME OF S	STU	JDY					
S No.	Learning Conte	nt	Teaching– Learning Method	Description of T-L Process		Teach Hrs	. ] / ]	Pract. /Tut Hrs.	LRs Required	l	Rema rks
1	Work Measu Definition, proced work measurement Study: definition, pro Stop watch time types of stop qualified and repres workers, work methods of measurement, Defin PMTS, MIM, MOST Sampling. Performance standard rating, scales, rating Allowances- purpose calculation of basi standard time. Sy method- meaning, compilation, advanta limitations.	rement: ure of . Time ocedure. study, watch, entative cycle, time ition of C, Work rating, rating factors, e, types, c time, ynthesis data, ges and	Traditional Lecture method	Teacher wi explain th content Teacher will conduct Progressive test/quiz	ll ne e	10			Handou Book,	ıt,	
			SCHEM	IE OF ASS	ES:	SMENT					
S. No	Method of Assessment	of t	<b>M</b>	aximum Marks	Re Re	esource equired	S	Ex / In 1	ternal iterna		
1 Paper pen test/ For the given learning content, Students write answer of questions						10	Pro	gressiv En nester e	e test/ d exam	Inter /Exte	nal ernal
	ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)										

CO2:LO1

RGP Bhop COU CO I	V (Diploma Wing al RSE NAME Description	) SCHEME F LEA G OU E Industrial Engin	SCHEME FOR Brand LEARNIN Cod G P05 OUTCOM E ndustrial Engineering and Qua Explain Material Handling System			CO Code <mark>02</mark> Layout.	LO Code <mark>01</mark>	e	Format No. 4
LOD	Description	Select a material	nandling	system for	a given ap	plication.			
			SCHEM	E OF STU	DY				
S. No.	Learning Content	Teaching– Learning Method	De	scription of T-L Proces s	Teach Hrs.	Pract. /Tut Hrs.	LF Requ	Rs ired	Rema rks
1	Material Handl Importance and effects on productive requirement of genetical hand system, objective functions, Analy Justification of ne Location, Type Material, classifical and selection material hand equipment.	ing: Interactive its classroom vity, lecture method good Handout, ling video display, ves, tutorials visis: eed, of tion of ling	Teach expla conte provi hando stude Teacl condo Progr test/a	her will ain the ents and de out to out to out to out to ents. her will uct ressive ssignment	10		Hando Book	ut,	
		SCI	IEME C	F ASSESS	SMENT				
S. No	Method of Assessment	Descrip Assess	tion of ment	Ν	/laximum Marks	Resour Requir	ed	Exte Int	ernal / ernal
1 Paper pen test For the given lead content, Student answer of question				9	10	Progress Test pap End semeste exam	ive per/ r	er/ /External	
	ADDITI	ONAL INSTRU	CTIONS	FOR THE	HOD/ FA	CULTY (	IF ANY	<i>(</i> )	

CO2:LO2

RO	GPV (Diploma Wing) Bho JRSE NAME	pal Indu	SCHEME FO LEAI ING OUT ME Istrial Enginee	RN Code P05 CO ring and Qua		Course Code 601	CO Code <mark>02</mark>	LO Cod 02	e	Format No. 4
CO	Description	Expl	ain Material Ha	ndlir	ng System	is, and Plant	t Layout.			
LOI	Description	Prep	are a plant layo	ut foi	r a given l	ayout probl	em			
			SCI	HEM	IE OF ST	TUDY				
S.Learning ContentTeaching- LearningDescription of T-LTeach Hrs.Pract.LRs RequiredRema rksNo.MethodProcessHrs./Tut Hrs.Requiredrks									Rema rks	
1	Plant Layout: Impo and its effects productivity, requin of a good layout. of bad layout, F affecting plant of types of layout, Pr Product, Fixed po Cellular and Job Layout advantage limitations of each of layout, selecti layout, factors affi the plant location	ortance on rement Effect Pactors ayout, rocess, sition, Shop s and n type on of Fecting	Traditional Lecture method	Tea exp lear out	cher will blain the rning come.	10		Hando Book.	ut,	
	• • • •		SCHEM	ME C	OF ASSE	SSMENT				
S. No	Method of Assessment		Descriptio Assessme	on of ent		Maximum Marks	Resour Requir	rces red	Ex In	ternal / iternal
1	Paper pen test	For	or the given ontent, Stude nswer of questi	lea nts ons	arning write	10	End sem exam	nester	Intern /Exte	nal ernal
	ADD	ITIOI	NAL INSTRUC	CTIC	ONS FOR ANY)	THE HOD	/ FACUL	ГҮ (IF		
	/11(1)									

# CO3:LO1

RGP Bhop COU	V (Diploma Wing al RSE NAME Description	g) Ind Mal	SCHEME FOI LEARNING OUTCOME ustrial Engined ke use of quality	R Brand Cod P05 ering and Q	ch e ual nt a	Course Code 601 ity Contro	CO Code 03 DI	LO Cod 01 control	le	Format No. 4
LOI	Description	Des	scribe quality ma	anagement a	nd i	its techniqu	ues.			
	I		SC	HEME OF	ST	UDY				
S. No.	Learning Content		Teaching– Learning Method	Description of T-L Process	on	Teach Hrs.	Pract. /Tut Hrs.	L) Requ	Rs uired	Rema rks
1	Quality Managem Meaning of qua classification, qua characteristics, qua of design, and qua of conforma Concept of reliabi Cost, Qua Assurance, Cost rework and rep quality circle. Com of Total Qua Management, Sigma, KAIZEN, Introduction to 9000, ISO 14000.	ent: lity, ality ality ality nce. lity, ality of pair, cept ality Six 5S. ISO	Traditional Lecture method	Teacher wi explain the contents to students.	11	10	-	Hando Book	out,	
			SCHE	ME OF ASS	SES	SMENT				
S. N	Method of Assessment		Descripti Assessm	on of ent	N	/laximum Marks	Resour Requir	rces red	Ext In	ternal / ternal
1 Paper pen test For the given learning content, Students write answer of questions						10	End semeste exam	r	Interr /Exte	nal rnal
	ADDI	ITIO	NAL INSTRU	CTIONS FO	DR '	THE HOI	D/ FACUL	TY (IF		
	ANY)									

# CO3:LO2

RGP	RGPV (Diploma Wing) S   Bhopal S   COURSE NAME Indus		FOR Br NG C ME I	ranch Code P05	Course Code 601	CO Code <mark>03</mark>		LO ode )2	OFormatleNo. 42	
COU	RSE NAME	Industrial Engin	neering and	d Qual	ity Contro	1				
COI	Description	Make use of qua	lity manage	ement a	nd statistic	al quality	y control	techni	ques	
LOI	Description	Use a SQC techn	ique for pr	ocess c	ontrol of a	given ap	plication	•		
			SCHEME	OF ST	UDY					
S. No.	Learning Co	ntent	Teaching Learning Method	g g	Descripti on of T- L Process	Tea ch Hrs	Pract. /Tut Hrs.	LRs Requi	ire	Re ma rks
1	Statistical Quality ( inspection and quality of variability, natri importance to quality tools of SQC and frequency distribut central tendency an need and calculation Normal Curve characteristics, cal- under normal tolerance, process of calculation. Contr Variables: control C construction, interprix and R Charts. ( Attributes: Limitatic charts, Meaning and their advantages interpretation and u chart, np-chart. Nee- revised values of their set of their limits and their calculation	Control: definition, ty control, concept rral variation, its ity control, basic their application, ton, measures of d dispersion, their s. : Definition, culation of area curve, statistical apability and their rol Charts for harts for variables, etation and use of Control Charts for on of X and R I use of attributes, , construction, se of p- chart, c- I of calculating the nean, and control llation.	Traditiona Lecture n + Assign Quiz	al nethod ment +	Teacher will explain the content s to student s.	10	-	Hand Book	out, s	
		SCI	HEME OF	ASSES	SSMENT					
S. No	Method of Assessment	Descrij Assess	ption of sment	M	laximum Marks	Resou Requ	urces ired	E	Externa Interna	al / al
1 Paper pen test For the giv content, Stu answer of qu			en learnir dents wri estions,	ng ite	10	Assign d seme exam	ment/En ester	Inte /Ex	ernal ternal	
	ADDITI	ONAL INSTRU	CTIONS F	OR TH	E HOD/ F	FACULT	TY (IF A	NY)		

# CO4:LO1

RGP Bhop	RGPV (Diploma Wing) SCH Bhopal LEA OU'		HEME FOR Br ARNING C JTCOME P trial Engineering and		n Con Co 6	urse ode 01	CO Code <mark>04</mark>	LO Cod <mark>01</mark>	le	<mark>ormat</mark> No. 4
COU	RSE NAME	Industria	al Engineering	g and Qua	lity Co	ntrol				
COI	Description	Explain I	Production plan	nning and o	control.					
LOI	Description	Explain f	functions and e	lements of	PPC.					
			SCHE	ME OF ST	ΓUDY					
S. No.	Learning Co	ontent	Teaching – Learning Method	Descripti T-L Proc	on of ess	Tea ch Hrs	Pract. /Tut Hrs.	L] Re d	Rs equire	Rem a rks
1Types of Production: Mass, Batch and Job Order Production; Characteristics; Economic Batch Quantity (EBQ) Production Planning and Control: Introduction; Major functions of Production Planning and Control; Pre planning; Methods of forecasting; Routing and Scheduling; Dispatching and			Traditiona l Lecture method	Teacher explain contents. Teacher conduct Progressi test/ Assignme	will the will ve give ent	10		Har	ndout ook	
			SCHEME	OF ASSE	ESSME	NT				
S. N	o Method of Assessment		Description of Assessment	f	Maxin Marl	num ks	Resourc Require	es d	Exte Inte	ernal / ernal
1	Paper pen test	For the content answe	the given learning nt, Students write er of questions.		10		Progressiv Test pape End semester exam	ve er/	Interna /Extern	ıl nal
	ADDITI	ONAL IN	STRUCTION	S FOR T	HE HO	D/ FA	CULTY (I	F AN	(Y)	

CO4:LO2

RGPV (Diploma Wing) Bhopal			SCHEME FOI LEARNING OUTCOME	R Brand Cod P05	ch e	Course Code 601	CO Code <mark>04</mark>	LO Cod <mark>02</mark>	e F	ormat No. 4		
COURSE NAME Industrial Engineering and Quality Control												
COI	Description	Exp	Explain Production planning and control.									
LOI	Description	Calc	Calculate time estimates using CPM, PERT techniques.									
SCHEME OF STUDY												
S. No.	Learning Content		Teaching– Learning Method	Description of T-L Process		Teac h Hrs.	Pract. /Tut Hrs.	LRs Required		Rema rks		
1	Concept of Networking- Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT).		Traditional Lecture method	Teacher will explain the contents. Teacher will conduct Progressive test		10		Handout, Book				
SCHEME OF ASSESSMENT												
S.No	Method of Assessment		Descriptio Assessme	on of ent	n of Ma nt N		Resources Required		External / Internal			
1	Paper pen test	Fo c a	or the given ontent, Studen nswer of questi	learning nts write ons.		10	Progressi Test pap End semester exam	ve Internal er/ /External		l al		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)												

# CO5:LO1

RGPV (Diploma Wing) Bhopal		g) SC LE OU	SCHEME FOR LEARNING OUTCOME		Course Code 601	CO Code <mark>05</mark>	LO Code <mark>01</mark>	e Fo	ormat No. 4		
COU	COURSE NAME Industrial Engineering and Quality Control										
CO Description Explain management, materials man						and its techr	niques.				
LO Description Describe management, its principles, and functions.											
SCHEME OF STUDY											
S. No.	Learning Content		Teaching- Learning Method	Description on of T-I Process	i Teac L h Hrs.	Pract. /Tut Hrs.	LRs Requ	uired	Rem a rks		
1	IDefinition of Management; Administration; organization; Principles of Management; Functions of Manager; Types of Organization: Line, Staff, Taylor's Pure functional types; Line and staff and committee type; Directing.		Traditional Lecture method	Teacher will explain th contents students	10 ne to	-	Handout, Book				
			SCHEME	OF ASSE	ESSMENT		1				
S. N	S. No Method of Descript Assessment Assessr			f	Maximum Marks	Resources Required		External / Internal			
1	Paper pen test	For cont ansv	the given le ent, Students ver of questions	earning write	10	Progressive Test paper/ End semester exam		Internal /External			
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF .ANY)											

CO5:LO2

Bhopal	OUTCOME	Code P05	Coc 60	le 1	Code 05	Code	e	No. 4			
COURSE NAME     Industrial Engineering and Quality Control											
CO Description E	Explain management, materials management and its techniques.										
LO Description F	Explain inventory co	plain inventory control techniques for a given application									
SCHEME OF STUDY											
S. Learning No. Content	Teaching– Learning Method	Description T-L Process	of Te Hi	ach s.	Pract. /Tut Hrs.	LRs Rec d	quire	Rema rks			
1 Material Management Introduction, function purchase systems, store turn-over, ordered quantity, EOO Inventory need inventory control Safety stock, different techniques of invento control, ABC analysis VED Analysis (simp treatment only).	nt: n, ck ed Q. of bl, ry vis- ole	Teacher will explain the contents to students	l 1	0	-	Handout, Book,					
SCHEME OF ASSESSMENT											
S. No Method of Assessment	Description Assessmen	n of nt	Maxim Marks	um S	Resources Required		External / Internal				
1 Paper pen test	For the given learning content, Students write answer of questions.		10		Progressive Test paper/End semester exam		Internal /External				
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											

### **Reference Books:**

- 1. Learning Package on Industrial Management Publisher: TTTI, Bhopal.
- 2. CPM and PERT Principles and Applications by L.S. Shrinath
- 3. Industrial Engg. and Management By O.P.Khanna, Khanna Publisher.
- 4. Industrial Organization and Management, By K.K.Ahuja
- 5. Modern Production Operation Management, By Buffa, Willey Eastern Ltd. (latest edition)
- 6. Production Operation Management, By Goel B.S., Pragati Prakashan.
- 7. Introduction to work study by ILO, Geneva Pub. Oxford & IBH Publishing co. Pvt. Ltd
- 8. Industrial Engineering By S. C. Saxena Pub J. K. Publishing
- 9. Industrial Engineering & Management by O. P. Khanna
- 10. Introduction to Industrial Engineering by Philip Hicks (McGraw Hills)
- 11. Learning Package in Industrial Engineering by TTTI, Bhopal

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