RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR SOFTWARE ENGINEERING	FORMAT-	Sheet No. 1/4		
Branch	Branch Computer Science and Engineering/Information Technology					
Course Code	502	Course Name	SOFTW ENGINE			
Course Outcome 1	_	in the concept of Software Engineering with are development models and Project Planning.	Hrs	Marks		
Learning Outcome	Under	estand Basics of S/W Engineering.	08	10		
Contents		re characteristics, Classification & Myths, S/W E Components, application, process, methods, tools.	Engineering I	Definition,		
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 1					
Learning Outcome 2	Classi	fy S/W Development Models.	09	10		
Contents		Process Capability Maturity Model, Life Cycle ental, spiral, RAD, prototyping, object oriented V				
Method of Assessment		Question Paper -External- RGPV End Sem Tl	heory Exam	2		
Learning Outcome 3		nstrate Project Planning with Resource gement.	08	10		
Contents	Project Planning Objectives, Software project estimation & technique Decomposition techniques, Estimation models, Scheduling, Staffing, S/Configuration & Risk management.					
Method of Assessment		Question Paper-Internal Progressive	Γest-I			
Course Outcome 2		rate the Software Requirement Analysis and ication with their techniques.	Hrs	Marks		
Learning Outcome 1	Identi	fy S/W Requirements and Specification.	09	10		
Contents	Analysis principles, system specification, software requirement specification functional and Non-functional specifications, S/W Prototype Specification.					
Method of Assessment		Question Paper-Internal Progressive T	est-II			
Learning Outcome 2	Organ	nize data and operations with data modeling.	09	10		

Contents	Data modeling-process, types, importance, advantages & Disadvantages, Data flow diagrams-components, Symbols Rules, levels, Examples.						
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 3						
Learning Outcome	Utilize Data Modeling techniques.	07	10				
Contents	ER Diagram, Structured analysis & Data dictionary.						
Method of Assessment	Question Paper -External- RGPV End Sem Th	eory Exam 4	1				
Course Outcome 3	nterpret S/W Design process, methods & Object Driented concepts. Hrs						
Learning Outcome 1	Discuss Design Concepts.	12	10				
Contents	Design Process, Objectives, Principles, Concepts, Effective concurrency, Coupling & Cohesion, Design Documentation		ntion,				
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 5						
Learning Outcome 2	Categorize Design Methodologies.	05	10				
Contents	Architectural Design- Process & Optimization, Procedural	Design-Too	ls.				
Method of Assessment	Internal Lab Test Practical Observat	ion.					
Learning Outcome	Extend Analysis & Design to Object Oriented Concept.	07	10				
Contents	Object Oriented Concepts, Unified Modeling language with Diagram, Use Case Diagram, Class Diagram, Sequence Diagram, State Chart Diagram, Data Flow Diagram, Elements Of Object Modeling, Object Oriented Analysis, Domain Analysis and OOA Process.						
Method of Assessment	Internal Lab Test Practical Observat	ion.					
Course Outcome 4	Illustrate Fundamental of Software Testing Implementation, Maintenance and Quality Management.		Marks				
Learning Outcome 1	Explain Fundamental of Software Testing.	13	10				

Contents	Software Testing Fundamentals: Principles & objective	s, V model	. Testing					
	Methodology: Unit Test, Integration Test, Functional test		_					
	Acceptance test, White Box & Black Box testing technique	ues Gray bo	x testing					
	Retesting and Regression testing, Debugging & reliability Analysis.							
Method of Assessment	Question Paper -External- RGPV End Sem Theory Exam 6							
Learning Outcome 2	Examine Software Reliability and Quality Management.	09	10					
Contents	Software Reliability And Quality Management: Concepts of S/W Quality Control and Assurance, Software Reliability, ISO 9000 & 9001, Standard SEI - CMM.							
Method of Assessment	Question Paper -External- RGPV End Sem The	eory Exam '	7					
Learning Outcome 3	Conclude Software Implementation and Maintenance.	06	10					
Contents	Characteristics reverse engineering, maintenance process of maintenance cost	ss model, es	stimation					
Method of Assessment	Internal –Term Work Assignment.							
Course Outcome 5	Develop Major Project Synopsis with Detailed Layout.	Hrs	Marks					
Learning Outcome 1	Decide Project with their requirement.	06	10					
Contents	Objective of the Project, Title and Team Formation	n, Guide A	llotment,					
	Information Gathering, Literature Survey, Software, Har	dware and	Resource					
	Requirements.							
	Note-Make use of CO1 (LO1, LO2 & LO3) and CO2 (L	.O1).						
Method of Assessment	External Lab Test Observation							
Learning Outcome 2	Identify Analysis and Design of the Project.	06	10					
Contents	Detailed Analysis & Design by using different tools like Data Flow Diagramets E-R Diagram, Class and Sequence Diagram etc. Note-Make use of CO2 (LO2 & LO3) and CO3 (LO1, LO2 & LO3).							
Method of Assessment	External Lab Test Observation							

Learning Outcome 3	Build Synopsis Document of Major Project.	06	10		
Contents	Synopsis Document typed with word count between including Clear Picture/View of Project, Scope/Area, Tec Used, Limitations and Conclusion.	500 and 70 chnology and	00 words d Method		
Method of Assessment	External Lab Test Observation				

TEXT BOOKS:

Roger S. Pressman, Software Engineering A Practitioner's Approach, McGraw Hill.

REFERENCE BOOKS:

- Software engineering A Precise Approach by Pankaj Jalote's ,Wiley India.
- Software Engineering: A Practitioner's Approach by Bruce R. Maxim & Roger S. Pressman.
- Software Engineering Tenth Edition By Ian Sommerville.
- Rajib Mall, Fundamental of Software Engineering, PHI.
- Software Engineering by Kassem A. Saleh J.Ross Publishing.
- Ron Patton, Software Testing, BPB.
- Gazzi, Fundamental of Software Engineering, PHI.
- Maryhauser Anneliese Von, Software Engineering Methods Management.
- Rajaraman V, Analysis and Design of Information System, PHI.

RGPV (Diploma Wing) Bhopal OUTCOME SOFTWARE ENGINEERING CO Description Explain the concept of Software Engineering with Software development models and Project Planning. Understand Basics of S/W Engineering.

SCHEME OF STUDY

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S. No.	Learning Content	Teaching -Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Myths, S/W Engineering Definition, Need, Components, application, process, methods,	method + Tutorial +Handout + Videos +Assignments + Quiz	Teacher will explain the contents and provide handout to students. Teacher will conduct quiz to make students practice their knowledge	08		Handouts /Chalk Board/Paper - Pen/Videos + ppt / Books / E- Contents	

SCHEME OF ASSESSMENT

S. No	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	For the given content student will be asked need of Software Engineering and their methods	10	Question/Test Papers /quiz questions	External

SCHEME OF STUDY

S. No.		Teaching -Learning	Description of T-L		Pract. /Tut		Remarks
	Learning Content	Method	Process	Hrs.	Hrs.	LRs Required	
1	S/W Process Capability Maturity Model	1	Teacher will explain	09	0	Handouts	NIL
	Life Cycle Models -water fall, incremental		the contents and			/Chalk	
	spiral, RAD, prototyping, object oriented V	+Handout + Videos	provide handout to			Board/Paper -	
	and fourth generation model.	+Assignments + Quiz	students.			Pen/Videos +	
			Teacher will			ppt / Books / E-	
			conduct quiz to			Contents	
			make students				
			practice their				
			knowledge				
							l

SCHEME OF ASSESSMENT

S	. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	1	RGPV End Sem Theory Exam 2	For the given content student will be able to select and adopt best S/W Life Cycle model.	10	Question/Test Papers /quiz questions	External

RGPV (Diploma Wing) Bhopal

SCHEME FOR LEARNING OUTCOME

Branch Code	Course Code	CO Code	LO Code
C04	502	1	3

Format No. **4**

COURSE NAIVIE SUFT WARE ENGINEERING	COURSE NAME	SOFTWARE ENGINEERING
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CO Description Describe the concept of Software Engineering with Software development models and Project Planning.

LO Description Demonstrate Project Planning with Resource management.

SCHEME OF STUDY

S. No.	Learning Content	Teaching -Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Project Planning Objectives,	+Handout + Videos +Assignments + Quiz	Teacher will explain the contents and provide handout to students. Teacher will conduct quiz to make students practice their knowledge	08	•	Handouts /Chalk Board/Paper - Pen/Videos + ppt / Books / E-Contents	NIL

SCHEME OF ASSESSMENT

S. No	o. Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Progressive lest-l	For the given content student will be Plan their Project	10	Question/Test Paper /quiz questions	Internal

Format No. **SCHEME FOR LEARNING** LO Code **Branch Code** Course Code CO Code **RGPV (Diploma Wing) Bhopal C04** 2 502 1 4 **OUTCOME** SOFTWARE ENGINEERING **COURSE NAME** CO Description Elaborate the Software Requirement Analysis and Specification with their techniques. LO Description Identify S/W Requirements and Specification. **SCHEME OF STUDY** Pract. **Teaching - Learning Description of** Teach LRs S. No. **Learning Content** /Tut Hrs. Remarks Method **T-L Process** Hrs. Required Traditional Lecture Teacher will Handouts NIL 1 09 0 Analysis principles, system specification, software requirement specifications, functional and Non-method + Tutorial explain the /Chalk +Handout + Videos contents and Board/Paper functional specifications, S/W Prototype Specification. Pen/Videos + +Assignments + Quiz provide handout ppt / Books / to students. Teacher will E-Contents conduct quiz to make students practice their knowledge **SCHEME OF ASSESSMENT** External / **Method of Assessment** S. No. **Maximum Marks Resources Required Description of Assessment** Internal For the given content student will be Analyze **Question/Test Paper Progressive Test-II** requirement 1 software 10 Internal /quiz questions specifications for their Project

RGP\	V (Diplo	oma Wing) Bhopa	SCHEME FO	OR LEARN	NING	Br	anch Code C04	Course Code	co Code	LO Code	Format No.
COURS	SE NAME	SOFTWARE ENGINEER	RING								
CO Des	cription	Elaborate the Software	Requirement Analysis	s and Specif	ication v	vith their t	echniques.				
LO Desc	cription	Organize data and oper	rations with data mod	eling.							
			9	SCHEME OF	STUDY						
S. No.		Learning Content	Teaching -Learning Method	Description Proce		Teach Hrs.	Pract. /Tut Hrs.	LRs Req	uired	R	temarks
1	importance, advantages 8		method + Tutorial ow + Handout + Videos ols + Assignments + Quiz	nethod + Tutorial the contents		09	0	Handouts /Chalk Board/Paper - Pen/Videos + ppt / Books / E- Contents			
			SCH	EME OF ASS	SESSMEI	NT					
S. No.	Metl	nod of Assessment	Description of Asses	ssment	_	imum arks	Resource	es Requir	ed	Exterr	nal / Internal
1	RGPV End Sem Theory Exam 3		For the given contention vill be able to select a best S/W Life Cycle mo	and adopt	1	10	Question/Test Papers /quiz questions		/quiz	E	external
			ADDITIONAL INSTRUC	TIONS FOR	THE HO	D/ FACULT	Y (IF ANY)				

RGP\	/ (Diplo	oma Wing) Bhop	oal So	CHEME FOR LEA OUTCOME		Branch Code	Course Cod 502	e CO Code	LO Code	Format No.
COURS	SE NAME	SOFTWARE ENGINEE	RING		'		1	-		
CO Desc	cription	Elaborate the Softwar	e Require	ment Analysis and Sp	ecification with t	heir techi	niques.			
O Desc	ription	Utilize Data Modeling	technique	es.						
				SCHEME	OF STUDY					
S. No.		Learning Content	Teaching - Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Req	Juired	Remarks	
1	ER Diagram, Structured analysis & Data dictionary.		method + Tutorial explain the +Handout + Videos contents and +Assignments + Quiz provide hand to students. Teacher will conduct quiz make studer		contents and provide handout to students. Teacher will conduct quiz to make students practice their	07	0	Handouts /Chalk Board/Paper - Pen/Videos + ppt / Books / E-Contents		NIL
				SCHEME OF	ASSESSMENT					
5. No.	o. Method of Assessment Descri		otion of Assessment	Maximum	Marks	Resou	rces Requir	ed	External / Internal	
1	RGPV En	d Sem Theory Exam 4	•	given content stude ole to make structur			Question/Test Papers /quiz questions		External	

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

for their project

Format No. **SCHEME FOR LEARNING** LO Code **Branch Code Course Code** CO Code **RGPV (Diploma Wing) Bhopal** C04 502 3 4 **OUTCOME** COURSE NAME | SOFTWARE ENGINEERING Interpret S/W Design process, methods & Object Oriented concepts. CO Description LO Description **Discuss Design Concepts.**

SCHEME OF STUDY

S. No.	Learning Content	Teaching - Learning Method	Description of T- L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Design Process, Objectives, Principles, Concepts, Effective Modularization, concurrency, Coupling & Cohesion, Design Documentation.	method + Tutorial +Handout + Videos +Assignments + Quiz	Teacher will explain the contents and provide handout to students. Teacher will conduct quiz to make students practice their knowledge	12		Handouts /Chalk Board/Paper - Pen/Videos + ppt / Books / E- Contents	NIL

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1		For the given content student will be able to adopt basic Design Concepts.		Question/Test Papers /quiz questions	External

RGP'	V (Diplo	oma Wing) Bhopal	SCHEME I	FOR LEAF JTCOME	RNING		ch Code	Course Code	CO Code	LO Code	Format No.
COUR	SE NAME	SOFTWARE ENGINEERI	NG		·						•
CO Des	cription	Interpret S/W Design pro	ocess, methods & C	Object Orient	ted concepts.						
O Des	cription	Categorize Design Metho	odologies.								
				SCHEME O	F STUDY						
S. No.	ı	Learning Content	Teaching - Learning Method	· •	ion of T-L cess	Teach Hrs.	Pract. /Tut Hrs.	LRs Red	quired	Ro	emarks
1		tural Design- Process & otion, Procedural Design-	Quiz	contents a handout to st Teacher will	nd provide udents. conduct quiz dents practice	-	05	Handouts Board/Pa Pen/Vide / Books Contents	per -		
			sc	CHEME OF A	SSESSMENT		_			_	
S. No.	Me	thod of Assessment	Description of As	ssessment	Maxim Mark	•	Resour	ces Requ	ired	Extern	al / Internal
1	Lab Te	st Practical Observation and viva voce.	For the given cont will be asked Design Process		Classify 10 Lab File			Question quiz ques	•	Ir	nternal

SCHEME FOR Branch Code Course Code CO Code LO Code Format No. 4 **RGPV (Diploma Wing) Bhopal** C04 502 3 3 LEARNING OUTCOME SOFTWARF FNGINFFRING **COURSE NAME** CO Description Interpret S/W Design process, methods & Object Oriented concepts. LO Description Extend Analysis & Design to Object Oriented Concept. **RGPV (Diploma Wing) Bhopal Teaching -Learning Description of T-L** Pract. **LRs Required** Teach S. No. Remarks /Tut Hrs. **Learning Content** Method Hrs. **Process** Lecture Teacher will explain the Handouts /ChalkNIL **Unified** Traditional Obiect Oriented Concepts. 0 07 1 Modeling language with Diagram, Use method + Tutorial contents and provide Board/Paper Case Diagram, Class Diagram, Sequence + Handout + Videos handout to students. Pen/Videos + ppt Diagram, State Chart Diagram, Data Flow +Assignments + Quiz Teacher will conduct Books / quiz to make students Contents Diagram, Elements Of Object Modeling, practice their Object Oriented Analysis, Domain Analysis knowledge and OOA Process. **SCHEME OF ASSESSMENT** External / S. No. **Method of Assessment Description of Assessment Maximum Marks Resources Required** Internal For the given content student will **Practical** File/Question/Test Lab Test be asked to Extended Object 1 10 Internal Observation and viva voce. Paper /quiz questions **Oriented Concepts**

SCHEME FOR LEARNING CO Code LO Code Format No. 4 **Branch Code** Course Code **RGPV** (Diploma Wing) Bhopal **C04** 502 4 **OUTCOME** SOFTWARE ENGINEERING **COURSE NAME** CO Description Illustrate Fundamental of Software Testing, Implementation, Maintenance and Quality Management. LO Description **Explain Fundamental of Software Testing.** SCHEME OF STUDY Description of Teaching -Pract. /Tut LRs **Learning Content** Learning S. No. T-L Process Teach Hrs. Remarks Required Hrs. Method Software & Traditional will Handouts 1 **Testing Fundamentals: Principles** Teacher 13 O NIL objectives, V model. Testing Methodology: Unit Test, Lecture method + explain /Chalk the Integration Test, Functional testing, System Testing, Tutorial +Handout contents Board/Paper and Videosprovide Pen/Videos + Acceptance test, White Box & Black Box testing ppt / Books / +Assignments +handout to techniques Gray box testing, Retesting and Regression E-Contents students. testing, Debugging & reliability Analysis. Teacher will conduct quiz to make students practice their knowledge **SCHEME OF ASSESSMENT** External / S. No. **Method of Assessment Description of Assessment Maximum Marks Resources Required** Internal For the given content student **Question/Test** will be asked Fundamental of **RGPV End Sem Theory Exam 6** 10 1 Papers /quiz External **Software Testing questions**

RGPV (Diploma Wing) Bhopal SC		SCHEME FOR OUTC		NG Branch Cod		Course Code	CO Code LO C	2 F	ormat No. 4	
	E NAME	SOFTWARE ENGINEERING Illustrate Fundamental of So		plementation, Main	tenance an	d Qualit	y Managem	ent.		
O Desc	ription	Examine Software Reliabilit	y and Quality Mana	gement.						
			sc	HEME OF STUDY						
S. No.		Learning Content	Teaching - Learning Method	Description of T-L Process		Teach Hrs.	Pract. /Tut Hrs.	LRs Req	uired	Remarks
1	Manager Control	ment: Concepts of S/W Q	tware method + rd SEI +Handout +	Teacher will expontents and providents to students. Teacher will conductorial condu	ct quiz to	09		Handouts /Chalk Board/Pa Pen/Vide ppt / Boo Contents	per os +	NIL - -

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	RGPV End Sem Theory Exam 7	For the given content student will be asked Reliability And Quality Assurance of Software		Question/Test Papers /quiz questions	External

RGPV	/ (Diplo	oma Wing) Bho	opal SCI	HEME FOR LEA	RNING	Branch Cod	de Co	ourse Code 502	CO Code	LO Code	Format No. 4
COURS	E NAME	SOFTWARE ENGIN	IEERING								
CO Desci	ription	Illustrate Fundamer	ntal of Softwar	e Testing, Implemen	tation, Main	tenance and	d Qualit	ty Manag	ement.		
.O Descr	ription	Conclude Software	Implementatio	on and Maintenance	•						
		L		SCHEME (OF STUDY						
5. No.		Learning Conter	nt	Teaching -Learning Method	Description Proc		Teach Hrs.	Pract. /1 Hrs.	Γut LRs I	Required	Remarks
1		ristics reverse tenance proces nation of maintenan	ce cost	method + Tutorial +Handout + Videos +Assignments + Quiz	handout to stu	nd provide udents. conduct quiz ents practice		0	Boar Pen/	louts /C d/Paper Videos + ooks / ents	- ppt
	l			SCHEME OF A	ASSESSMENT	•		1			
S. No.	Metho	od of Assessment	Description	n of Assessment	Maxii	mum Marks	3	Resoui	rces Req	uired	External / Internal
1	1 Term Work be asked to		be asked to a	content student will bout estimation of ost of S/W Project	of 10			Assignments/Question /Test Paper /qui questions		estion /quiz	Internal
	1		ADDITION	AL INSTRUCTIONS FO	DR THE HOD/	FACULTY (I	F ANY)				

RGP\	/ (Diplo	oma Wing) Bh	opal	SCI	HEME FOR LEAR OUTCOME	NINC	â	Branch Code C04	Course 502	CO Code	LO Code	Format No.
COURS	SE NAME	SOFTWARE ENGI	NEERING									
CO Desc	cription	Develop Major Pro	ject Syno _l	psis w	vith Detailed Layout.							
LO Desc	ription	Decide Project with	n their req	uirer	ment.							
		1			SCHEME O	F STUD	Υ					
S. No.		Learning Conte	nt		Teaching -Learning M		•	ion of T-L cess	Teach Hrs.	ct. /Tut Hrs.	LRs Require	Remarks
1	Objective of the Project, Title and Team Formation, Guide Allotment, Information		Traditional Lecture met Tutorial +Handout + ' +Assignments + Quiz	Videost F S T C r F	he cont	contents and de handout to ents. her will uct quiz to e students ice their		Handouts /Chalk Board/Pap -Pen/Vide + ppt Books / Contents	Make us of CO (LO1, LO2 & LO3) an CO2 (LO1).			
	•				SCHEME OF A	SSESSN	/IENT	·				
S. No.	Metho	od of Assessment	Desc	riptic	on of Assessment		Maxir	num Marks	3	Resour Requir		External / Internal
1	Lab Test Observation and be asked to a		content student will bout Objective of the Team Formation and uirements.			Lab Manual/Questic Paper /quiz questions/Vi-V		uestion quiz	External			

RGP\	/ (Diplo	oma Wing) Bho	opal	E FOR LEAR OUTCOME	NING	Branch Code C04	Course 50		Code LO Co	de F	ormat No.
COURS	SE NAME	SOFTWARE ENGIN	IEERING			1		l	l		
CO Desc	cription	Develop Major Proj	ject Synopsis with Det	tailed Layout.							
LO Desc	ription	Identify Analysis an	d Design of the Proje	ct.							
				SCHEME O	F STUD	Υ					
S. No.		Learning Cor	ntent	Teaching -Lea Method	•	Description of T-I	Teach Hrs.	Pract. / Hrs.		Rs uired	Remarks
1		Diagram, E-R Diagra		method +	Tutorial Videos Quiz	Teacher will explai the contents an provide handout to students. Teacher wi conduct quiz to make student practice the knowledge	d o III o s	06	Pen/V	'Paper deos Books	Make use of CO2 & LO3) and LO2 & LO3).
				SCHEME OF A	SSESSIV	1ENT			<u>.</u>		•
S. No.	Metho	od of Assessment	Description of As	ssessment		Maximum Mark	S	Resourc	ces Requir		External / Internal
1	Lab Tes	t Observation and	For the given conter be asked to abo Analysis & Design Con	out Extended		10		Pap	Lab al/Questic per/quiz ions/Vi-Va		External
	1		ADDITIONAL INST	TRUCTIONS FO	R THE H	IOD/ FACULTY (IF	ANY)	1		l	

		Course Cod	de CO Coo	ode LO Code	Format No.
	Teach Hrs.		ract. ıt Hrs. I	LRs Requir	red Remarks
06	0	0	Bo Pe	Handouts Board/Paper Pen/Videos - Books / E-Co	- + ppt /
I					
Resou		Res	sources f	Required	External / Internal
Lab Manual/Question Paper /quiz questions/Vi-Va			anual/Q Paper /	External	
	NY)	IY)		Manual/0 Paper	Manual/Question Paper /quiz