Data Science -VI Sem

R	GPV (Dip	loma Wing)	SCHEME FOR	LEARNI	NG		Branch Cod	e	c	ourse Co	de	CO Code	LO Code	
	Bh	opal		OUTCO	OME		С	0	4				1	1	Format No. 4
COUF	RSE NAME	Data Science													
CO-1 D	escription	Explain the	basic Cor	cepts of Data Sc	ience.										
LO-1 D	escription	Explain the	basic co	oncepts of Data	Science	and it	s ap	plicat	tion	s.					
				SC	HEME OF S	TUDY									
S. No.	L	earning Content	t	Teaching –Learning Method	Descript T-L Pro	tion of ocess	Теа	ch Hrs.	Р	ract. Hrs	/Tut 5.	LR	Rs Req	uired	Remarks
1.1	 1.1 Introduction to Data Science, Evolution of Data Science Data Science Roles Stages in a Data Science Project Applications of Data Science in various fields 			Method Teacher will ia Traditional Lecture method + Handout Teacher will explain the contents and provide handouts to students. ia Image: State sta			08					Har	ndout		
				SCHEN	ME OF ASSE	ESSMEN	Т								
S. No.	Method o	f Assessment	Desc	cription of Assessm	ent I	Maximu	um M	larks		Reso	ource	s Req	Juired		External / Internal
	Paper pen (End Seme	test ster Exam)	Students w science bas life cycle ar	ill be asked to explain c sics,roles,data science and applications of Data	data project 1 Science .	10			Test Paper		External				

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV	RGPV (Diploma Wing) Bhopal		al SCHEME	SCHEME FOR LEARNING		Branch Code	Course Code		CO Cod	e	LO Code	Format No. 4
COUR	SE NAME	Data Science				0 4						
CO-1 D	escription	Explain the basic	Concepts of Data	a Science.								
LO -2De	escription	Demonstrate th	e concepts of D	ata Mining.								
				SCHEME OF ST	JDY							
S. No.	Lea	rning Content	Teaching –Learning Method	Description of T-L Process	Teach Hr	s. Pract. J	/Tut	LI	Rs Requ	iire	ed	Remarks
1.2	Definition Technique Applicatic Data minir	nitions of data mining iniques of data mining lications of data mining mining steps Traditional Lecture method + Handout contents and provide handouts to students.										
			9	SCHEME OF ASSES	SMENT							
S. No.	No.Method of AssessmentDescription of AssessmentMaximum MarksResources RequiredExI						External / Internal					

Paper pen test (End Semester Exam)	A Student will be asked to define data mining, techniques and applications of data mining.	10	Test Paper	External
	ADDITIONAL INST	RUCTIONS FOR THE HOD/ FA	CULTY (IF ANY)	

RGF	PV (Diplo	ma Wing) Bhopa	SCHEN	ME FOR LEARNING OUTCOME	Brar	nch Code 0 4	Course Code	CO Code 1	LO Code 3	Format No. 4
CO	URSE NAME	Data Science								
CO-1	Description	Explain the basic (Concepts of Da	ata Science.						
LO-3	Description	Discuss Data Wa	rehousing ar	nd online analytical p	rocessir	ng				
		'		SCHEME OF STUDY						
S. No.	Lear	rning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tu Hrs.	t LRs	Requir	ed	Remarks
1.3	 1.3 Definition Architecture Data warehouse models : enterprise warehouse, data mart, virtual warehouse 		Traditional Lecture method	Teacher will explain the contents and provide a Lab manual to the students. Teacher will provide guided practice to apply pointers and structures in a given situation.	-	8	Handou	ut		

	 Data on multic mode snowf consto OLAP of the state of the	cube : limensional data l, schemas (star lakes, fact ellations) operations	a 'S,										
					SCHEME OF		IT						
S. No.	Method	of Assessment	Descrip	otion of	Assessment	Maximu Marks	um s	Reso	ources R	equir	ed		External / Internal
	Internal Pa (Progressiv	per pen test e test -I)	Students will warehouse ar operations	be asked rchitectur	to explain data e & models, OLTF	⁵ 10		Pa	aper per	n test			Internal
			ADDITIC	ONAL IN	STRUCTIONS	FOR THE HOI	d/ Facul	TY (IF ANY)				
	/ (Dinlon	aa Wing \ Ph	S	CHEN	1E FOR LEA	ARNING	Bran	ch Code	Course Co	ode	CO Code	LO Code	1
KGP	יסוקוט) א	ha wing j Bho	opai		ΟυτςοΜΙ	Ε	С	0 4			2	4 F	ormat No. 4
COUI	RSE NAME	Data Science											
CO-2 D	escription	Describe vari	ous statis	tical c	oncepts.								
LO-4 De	Description Explain various Data objects and attri					ute types							
	SCHEN					OF STUDY							
S. No.	S. No. Learning Content Teaching Method			Teaching -Learning Method	Descriptio Proce	n of T-L ss	Teach Hrs.	Prac /Tut H	t. Irs.	LRs R	equired	Remarks	

2.1	Data objects and attribut what is attributes, nomin ordinal, numerical, discre continuous attributes	e types: al, binary, te and	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	06		Handout	
	·		SCHEME O	FASSESSMENT			:	
S. No.	Method of Assessment	ent Description of Assessment Maximum Resources Required					External / Internal	
	End Semester Exam	Student will be different data t	asked to identify ypes	10	Test Paper			External
	1	ADDITIO	NAL INSTRUCTIONS	FOR THE HOD/ FACU	LTY (IF ANY)		

RGPV (Diplom	na Wing) Bhopal	SCHEME FOR LEARNING OUTCOME	Branch Code		Branch Code Course Code		de	CO Code 2	LO Code 5	Format No. 4
COURSE NAME	Data Science							I		

CO-2 D	escription	Describe vari	ious statistical conco	epts.						
LO-5 De	escription	Illustrate var	rious Statistical tech	niques						
	SCHEME OF STUDY									
S. No.	Learn	ing Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks		
2.2	Basic Sta Description measuring tendency median, percentile the disper (range, que variance,	tistical ons of Data- og the central (mean, mode and e), measuring ersion of data juartiles, standard	Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	-	08	Handout			

	deviation, and interquartile range)										
		SCHEME OF	ASSESSMENT								
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal						
	End Term Exam	Students will be asked to calculate central tendency measures and dispersion of data for a given problem.	10	Test Paper	External						
	ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)										

DCDV/(Diplome Wing) Dhenel		SCHEME FOR LEARNING	В	ranch Coo	le	Course Co	de	CO Code	LO Code	
KGPV (Diplor	ia wing j Bhopai	OUTCOME C 0						2 6		Format No. 4
COURSE NAME	Data Science									

CO-2 D	escription	Describe	various statistica	l concepts.				
LO-6 De	escription	Recall th	e concepts of pr	robability				
				SCHEME OF STUDY				
S. No.	Learnin	g Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks

2.3	Concept of probability Methods of assigning probability (classical, relative frequency and subjective) Probability terminology (experiment, event, elementary event, sample space, mutually exclusive events, independent events), collectively exhaustive events, complementary events)	Traditional Lecture method	Teacher will explain the c provide handout to stude	ontents and ents.	8		Handout	
			SCHEME OF	ASSESSMENT				
S. No.	Method of Assessme	nt Descripti	on of Assessment	Maximum Marks		Resources R	equired	External / Internal
	End Term Exam	Student will be probability for a	asked to calculate a given problem	10		Test Pa	per	External

			ADDITIO	NAL INSTRUCTIONS	FOR THE HOD/ FA	CULTY (IF A	NY)						
RGPV	/ (Diplon	na Wing) Bh	opal SC	HEME FOR LEA	ARNING	Branch Code	Course Code	CO Code 2	LO Code 7	Format No. 4			
COUR	SE NAME	Data Science			I								
CO-2 D	escription	Describe vario	us statistica	tistical concepts.									
LO-7 De	escription	Use Appropri	ate Python	Libraries to Mar	nage a Dataset.								
	SCHEME OF STUDY												
S. No.		Learning Conter	nt	Teaching –Learning Method	Description of T- Process	L Teach Hrs.	Pract. /Tut Hrs.	LRs Rec	luired	Remarks			
2.4	2.4 Setup Python IDE (Jupyter, Pycharm, Google Colab (Online Platform), etc.). Importing Libraries (pandas, numpy, matplotlib) Reading Files (.csv, .xlsx, .pdf, Image, etc.). Managing the dataset (preprocessing dataset) Splitting dataset (Kaggle, UCI ML repository, OpenML, MNIST, etc.) into training and test test. Perform Data visualization.		Traditional Lecture guided practice method + Handout session to the students			8	Lab Manual						
				SCHEME C	FASSESSMENT								
S. No.	Method	of Assessment	Descripti	on of Assessment	Maximum Marks	R	esources Rec	luired		External / Internal			

	Lab Assessment		Studen to read differei	t will be asked to , manage, split an nt data sets	work on python d visualize	10	10 Lab Manual/Compute		er		External			
			A	DDITIONAL IN	STRUCTIONS FO	R THE H	OD/ FA	CULTY (NY)				
RGPV	/ (Diplor	na Wing) Bl	nopal	SCHEMI	E FOR LEARN OUTCOME	NING	С	Branch Cod	e 4	Course Co	de	CO Code 3	LO Code 8	Format No. 4
COUR	SE NAME	Data Science					I			1 1			1	1
CO-3 D	CO-3 Description Discuss the v			s Data Minin	g Technique	S								
LO-8 De	escription	Explain Asso	ociation	n rule minin	g.									
					SCHEME O	F STUD	Y							
S. No.	Learn	ing Content	Teachi	ng –Learning ⁄Iethod	Description of Process	f T-L T	Teach Hrs.	Pract /Tut H	t. Irs.	LRs Required				Remarks
3.1	8.1 Market basket analysis and its case study Frequent itemsets closed itemsets association rules apriori algorithm for association rules with example		Tradition method -	al Lecture + Handout	Teacher will expla the contents and provide handout students.	in 7 to	7	-		Hand out				
					SCHEME OF A	SSESSM	IENT							
S. No.	S. No. Method of Assessment		D	Description of Assessment		Maxir Ma	mum rks		Re	esources Re	equired	1		External / Internal

End semester Exam	Students will be asked to explain market basket analysis, itemsets and apriori algorithm. Students will be asked to solve Numerical problem based on apiori algorithm.	10	Test paper	External					
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)									

	RGPV (Diploma Wing	na Wing) Bho	SCI	HEME FOR LEA	ARNING	Branch Code	Course	Code	CO Code	LO Code	/
			hai	OUTCOM	E	C 0	4		3	9	Format No. 🕂
COUR	SE NAME	Data Science									
CO-3 D	escription	Discuss the var	ious Data Mi	ning Techniques	5						
LO-9 De	escription	Perform assoc	iation rule	mining on sele	cted data set						
				SCHEMI	E OF STUDY						
S. No.	Learning Content			Teaching —Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required			Remarks
3.2	Select a data set from a repository Apply apriori algorithm to generate association rules Examine the validity of generated rules		Traditional Lecture method + Handout	Teacher will provide guided practice session to students	06	-	Lab Manual				
				SCHEME O	FASSESSMENT	-	-				
S. No.	S. No. Method of Assessment Description			n of Assessment	Maximum Marks		Resources	Require	ed		External / Internal

	Lab Assessment	Student will be asked to read data and apply apriori algorithm to generate valid association rules.	10	Lab Manual/computer	Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											

	RGPV (Diploma Wing) Bhopal			SCHEME FOR L	EARNING		Branch Co	de	Course	Code	CO Code	LO Code	
KGP		ia wing j Bho	pai	OUTCOM	ИE	С	0	4			3	10	Format No. 4
COUF	RSE NAME	Data Science											
CO-3 De	escription	Discuss the var	rious Da	ata Mining Techniques									
LO-10 D	O-10 Description Discuss Clustering			echniques									
	SC					(
S. No.	D. Learning Content			Teaching –Learning Method	Descriptio T-L Proce	n of ess	Teach Hrs.	1	Pract. /Tut Hrs.	LRs	Requi	red	Remarks
3.3	Basic Concepts of Cluster Analysis and its case study Major Clustering Approaches- Partitioning Methods, Hierarchical Methods, Density-Based Methods k-mean clustering with example		Traditional Lecture method	Teacher will explain the contents and provide Lab Manual to students.		7			Hand	lout			
				SCHEME	OF ASSESSM	ENT							
S. No.	No. Method of Assessment Description of Assessment		: Maxi Ma	mum rks	n Resources Required				External / Internal				

Internal Assessment (Term work)	Students will be asked to explain clustering and its types. Students will be able to solve numerical problems using k-mean clustering.	10	Test Paper/Quiz/presentation	Internal						
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)										

RGPV ((Diploma	Wing) Bhop	oal SCHEME	FOR LEAR	NING	С	Branch Code	4	ourse Code	CO Code 3	LO Code 11	Format No. 4
COUR	SE NAME	Data Science										
CO-3 D	escription	/arious Data Minin	ng Technique	es								
LO-11 Description Describe various Classifica				ion techniq	ues.							
				SCHEME (OF STU	DY						
S. No.	No. Learning Content		Teaching -Learning Method		Descri of T-L P	ption rocess	Teach Hrs.	Pract. /Tut Hrs.	Re	LRs equired	Remarks	
3.4	Case study of classification Basic classification approaches – decision tree induction, Bayes classification, k- Nearest neighbor classification		Traditional Lecture method + Handout to student			will he and nandout nts.	7	-	Hai	ndout		
	-			SCHEME OF	ASSESS	MENT			-			
S. No.	. No. Method of Assessment Description of As		sessment	Maximum Marks		Resources Required				External / Internal		

Progressive Test -II	student will be asked to describe classification and their types	10	Test paper	Internal
	ADDITIONAL INSTRUCTIONS F	OR THE HOD/ F	ACULTY (IF ANY)	

RGPV (GPV (Diploma Wing) Bhopal		SCHEME FOR LEARNI OUTCOME	ING Branch Co	de Cou 4	urse Code Co	CO odeLO Code312	Format No. 4					
COUR	SE NAME	Data Science											
CO-3 D	escription	Discuss the vario	e various Data Mining Techniques										
LO-12	Description	Perform classifica	ation on selected data set										
			SCHEME OF	STUDY									
S. No.		Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Require	d Remarks					
3.5	Select a d Apply any Evaluation	ata from a reposito classification on it of classes	ry Traditional Lecture method + Handout	Teacher will provide guided practice session to students	-	6	Lab Manual						
	1		SCHEME OF AS	SESSMENT	1			1					

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal						
	Lab Assessment	Students will be asked to read the dataset and apply classification on it and also be able to evaluate the classes .	10	Lab Manual and computer	Internal						
	ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)										

F	RGPV (GPV (Diploma Wing) Bhopal		SCHEM	E FOR LEARNI OUTCOME	Branch Con	de Cou	urse Code Co	CO odeLO Code413	Format No. 4			
	COURS	SE NAME	Data Science										
	CO-4 D	escription	Differentiate b	between correlation and regression.									
	LO-13 [Description	Compare Correl	ation and	regression tech	inique.							
			-	SCHEME OF STUDY									
	S. No. Learning Content			Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Require	d				
	4.1	Definition Scatter dia Definition Linear Reg Logistic Re	of correlation agram of Regression. gression. egression.		Traditional Lecture method + Handout	Teacher will explain the contents and provide handout to students.	8		Handout				
					SCHEME OF AS	SESSMENT	1	-					

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal							
	End Term Exam	Students will be asked to define correlation & regression with its types.	10	Test Paper	External							
	ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											

RGPV ((Diploma	Wing) Bhopal	SCHEM	IE FOR LEARN OUTCOME	ING Branch Co	nde Co	urse Code	CO LO Code Code	Format No. 4			
COUR	SE NAME	Data Science										
CO-4 D	escription	Differentiate between correlation and regression.										
LO-14	Description	Demonstrate cor	relation be	tween variables	of selected data	set						
SCHEME OF STUDY												
S. No.		Learning Content		Teaching —Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs	LRs . Requir	ed Remarks			
4.2 Find correlation between variables and analyse the resultant matrix Create a scatter graph between variables.				Traditional Lecture method + Handout	Teacher will provide guided practice session to students	-	5	Lab Manual				
	1			SCHEME OF AS	SESSMENT							

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal							
	External Lab Assessment	Students will be asked to read data and generate correlation matrices. Students will be able to generate scatter graph and explain it.	10	Lab Manual and computer	External							
	ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)											

F	RGPV (Diploma	Wing) Bhopal	SCHEME FOR LEARNI OUTCOME	ING Branch Co	de Cor	urse Code C	CO LO Code Code 4 15	Format No. 4				
	COUR	SE NAME	Data Science		· · ·	· · · · ·		i					
	CO-4 Description		Differentiate between correlation and regression.										
	LO-15 [Description	Demonstrate regression between variables of selected data set										
				SCHEME OF STUDY									
	S. No.		Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Require	ed Remarks				
	4.3 Create linear regression mod predict value of a variable, Analyse the result			el to Traditional Lecture method + Handout	Teacher will provide guided practice session to students	-	5	Lab Manual					
				SCHEME OF AS	SESSMENT		-	-					

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal						
	Lab Assessment	Students will be asked to read the data and create a regression model for it.	10	Lab Manual and computer	External						
	ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)										

RGPV (DIPL WING) BHOPAL		(DIPL OPAL	ОМА	OBE CURRI COURSE	CULUM FOR TH	ΗE	FORMAT	-3	-3 Sheet No. 1/5		
Branch	cs	E				Sen	nester	VI			
Course Code				Course Data Science Name							
Course C 1	Outco	ome -	Expl Scie	Explain the basic Concepts of Data Teach Hrs						Mark s	
Learning Outcome 1			Expl Scie	Explain the basic concepts of Data ⁰⁸ ¹⁰ Science and its applications.							
Contents			Introduction to Data Science, Evolution of Data Science Data Science Roles Stages in a Data Science Project Applications of Data Science in various fields								
Method Assessme	ent	of	Exterr	nal: End semeste	r theory examinat	tion (Pen paper	test)	•		
Learning 2	Ou	tcome	Dem Mini	ionstrate th ng.	e concepts	of	Data	08		10	
Contents			Defir Techi Appli Data	nitions of data niques of data ications of data mining steps	mining mining a mining						
Method Assessme	ent	of	Exterr	nal: End semeste	r theory examination	tion (Pen paper	test)	•		
Learning 3	Ou	tcome	Disc anal	uss Data W ytical proces	arehousing a sing	and	online	80	3	10	
Contents		of	Defir Archi Data mart Data snow OLAF	nition itecture warehouse , virtual wareh cube : multic flakes, fact co operations	models : ent nouse limensional dat onstellations)	erpr ta m	ise war odel, sc	ehou hema	se, as (:	data stars,	
Method		of	Interr	nal: Mid semester	r theory examinat	ion (F	en paper	test).			

Assessme	ent										
RGPV WING)	BH	(DIPL OPAL	ОМА	OBE CURRI COURSE	CULUM FOR TH	HE	FORMA	Г-З	Sh No.	ieet 2/5	
Branch	CS	E				Sem	lester	VI			
Course Code				Course Name	Data Science						
Course C 2	Outc	ome -	Desc	Describe various statistical concepts. Teach Marl							
Learning 4	Ou	tcome	Exp attr	lain variou ibute types	s Data obj	jects	and	6		10	
Contents			Data nomi conti	Data objects and attribute types: what is attributes, nominal , binary , ordinal , numerical , discrete and continuous attributes							
Method Assessme	ent	of	Exterr	External: End semester theory examination (Pen paper test).							
Learning 5	Ou	tcome	Illus	trate various	s Statistical to	echn	iques	8		10	
Contents			Basic Statistical Descriptions of Data- measuring the central tendency (mean, median ,mode and percentile) , measuring the dispersion of data (range, quartiles, variance, standard deviation, and interquartile range)								
Method Assessme	ent	of	External: End semester theory examination (Pen paper test).								
Learning 6	Ou	tcome	Reca	all the concep	ots of probabi	ility		8		10	
ContentsConcept of probability Methods of assigning probability (classical, relati frequency and subjective) Probability terminology (experiment, event, elementa event, sample space, mutually exclusive even independent events), collectively exhaustive even complementary events)							lative entary vents, vents,				
Method of Assessment			Exterr	nal: End semeste	r theory examination	tion (Pen paper	test).			
Learning 7	Ou	tcome	Use Man	Appropriate age a Datase	e Python Lib :t.	orari	es to	08	1	0	

Contents			Setu Platfo Read Mana Splitt MNIS Perfo	Setup Python IDE (Jupyter, Pycharm, Google Colab (Online Platform), etc.). Importing Libraries (pandas, numpy, matplotlib) Reading Files (.csv, .xlsx, .pdf, Image, etc.). Managing the dataset (preprocessing dataset) Splitting dataset (Kaggle, UCI ML repository, OpenML, MNIST, etc.) into training and test test. Perform Data visualization.							
Method Assessme	ent	of	Exterr	nal: Laboratory c	bservation	and vi	va vo	ce.			
RGPV WING)	BHO	(DIPL) OPAL	ОМА	OBE CURRI COURSE	CULUM FO	OR TI	HE	FORMA	Т-З	Sheet No. 3/5	
Branch	CSI	E					Sen	nester	VI		
Course Code				Course Data Science Name							
Course C 3	Outco	ome -	Disc Tech	uss the v iniques	various	Dat	а	Mining	Teac Hrs	h Mark s	
Learning 8	Ou	tcome	Expl	Explain Association rule mining.0710							
Contents			Market basket analysis and its case study Frequent itemsets closed itemsets association rules apriori algorithm for association rules with example								
Method Assessme	ent	of	External: End semester theory examination (Pen paper test).								
Learning 9	Ou	tcome	Perf sele	orm associa cted data set	ation ru t	ıle r	nini	ng on	06	10	
Contents			Select a data set from a repository Apply apriori algorithm to generate association rules Examine the validity of generated rules								
Method Assessme	ent	of	Intern	al: Laboratory o	bservation						
Learning 10	Ou	tcome	Disc	uss Clusterir	ng techni	ques	5		07	10	

ContentsBasic Concepts of Cluster Analysis and its case study Major Clustering Approaches- Partitioning Methods, Hierarchical Methods, Density-Based Methods k-mean clustering with example								hods,			
Method Assessme	of nt	Intern	al: Term work								
Learning 11	Outcome	Desc tech	Describe various Classification 07 10 techniques.								
Contents		Case Basic Baye	Case study of classification Basic classification approaches – decision tree induction, Bayes classification, k- Nearest neighbor classification								
Method Assessme	of nt	Intern	al: Mid semeste	r theory exar	mination (Pen paper	test).				
Learning 12	Outcome	Perform classification on selected data set				d data	06		10		
Contents		Select a data from a repository Apply any classification on it Evaluation of classes									
Method Assessme	of nt	Intern	al: Laboratory o	bservation							
RGPV WING)	(DIPL BHOPAL	OMA OBE CURRICULUM FOR THE FORMAT-3 Sheet No. 4/5									
Branch	CSE				Ser	nester	VI				
Course Code			Course Name	Data Scier	nce		-				
Course Ou 4	utcome -	Diff reg	erentiate be ression	etween co	orrelatio	on and	Teac Hrs	ch	Mark s		
Learning 13	Outcome	Com tech	pare Corre nique	lation an	nd regi	ression	08		10		
Contents		Definition of correlation Scatter diagram Definition of Regression. Linear Regression. Logistic Regression.									
Method Assessme	of nt	Exterr	nal: End semeste	er theory exa	mination ((Pen paper	test)	•			

Learning Outcome 14	Demonstrate correlation between variables of selected data set	05	10						
Contents	Find correlation between variables and analys resultant matrix Create a scatter graph between variables.	e the							
Method of Assessment	External: Laboratory observation and viva voce.	External: Laboratory observation and viva voce.							
Learning Outcome 15	Demonstrate regression between variables of selected data set	05	10						
Contents	Create linear regression model to predict valu variable, Analyse the result	Create linear regression model to predict value of a variable, Analyse the result							
Method of Assessment	External: Laboratory observation and viva voce.	External: Laboratory observation and viva voce.							

REFERENCE BOOKS:

S No	Title & Publication	Author
1	Data Mining: Concepts and Techniques, Elsevier	Jiawei Han, Micheline Kamber, Jian Pei
2	Applied statistics and probability for engineers	Douglas Montgomery
3	Mastering python for data science	Samir Madhavan
4	E-books/E-tools/Relevant software to be used as recommended by AICTE/NITTR/RGPV	

Suggested practical list -

- 1. Import and summarize the various datasets using python.
- 2. Preprocess the dataset according to need (manage missing data, encode data etc.) using python.
- 3. Perform data visualization using python.
- 4. Apply association rule mining using inbuilt functions and analyse the result using python.
- 5. Apply classification using inbuilt functions and analyse the accuracy of classification using python.
- 6. Apply correlation and visualize using inbuilt function the result in scattered graphs using python.
- 7. Apply regression analysis using inbuilt function and interpret the result using python.