Name of th	e Course: M. Tech in Arti	ficial Intelligence and Data Science						
Subject: M	athematical Foundations	of Computer Science						
Course Co	de: PGCS (AI & DS)101	Semester: I						
Duration:3	o Hrs.	Maximum Marks:100						
Teaching S	cneme	Examination Scheme						
Theory:3		End Semester Exam:70						
Tutorial:0		Attendance: 5						
Practical:0		Continuous Assessment: 25						
Credit:3								
Aim:								
SI. No.								
1.	To understand the basic no	otions of discrete and continuous probability.						
2.	To understand the method	ds of statistical inference, and the role that sat	mpling dis	tributions play in				
	those methods.							
3.	To be able to perform corr	ect and meaningful statistical analyses of simp	le to mode	erate complexity.				
<b>Objective:</b>								
Sl. No.								
	To understand the mathematical	matical fundamentals that are prerequisites for	or a variet	y of courses like				
1.	Data mining, Network pro	tocols, analysis of Web traffic, Computer secu	urity, Softv	ware engineering,				
	Computer architecture, op	erating systems, distributed systems, Bioinforr	natics, Ma	chine learning				
2.	To develop the understand	ding of the mathematical and logical basis to a	many mod	ern techniques in				
2.	information technology lil	mation technology like machine learning, programming language design, and concurrency.						
3.	To study various sampling	bling and classification problems.						
Pre-Requis	ite:							
Sl. No.								
1.	Discrete Mathematics							
~			/	-				
Contents			Hrs./wee	ek				
Chapter	Name of the Topic		Hours	Marks				
	Probability mass, densit	y, and cumulative distribution functions,						
1	Parametric families of	distributions, Expected value, variance,	7	12				
Ŧ	conditional expectation, A	pplications of the univariate and multivariate	,	14				
	Central Limit Theorem, Pr	iodadinistic inequalities, Markov chains						
2	Random samples, sampli	ng distributions of estimators, Methods of	7	12				
	Noments and Maximum I							
	Statistical inference, Intr	ouuciion to multivariate statistical models:		10				
3	The problem of ever fitting	on problems, principal components analysis,	8	12				
	The problem of over fittin	g model assessment.						
	Graph Theory: Isomorphis	sm, Planar graphs, graph colouring, Hamilton						
4	circuits and Euler cycles.		3	12				
-	Permutations and Com	ionations with and without repetition.	5	12				
	specialized techniques to	solve combinatorial enumeration problems						
	Information Technology	Applications, Data mining, Network						
-	protocols, analysis of V	Web traffic, Computer security, Software	7	10				
5	engineering, Computer a	architecture, operating systems, distributed	/	12				
	systems, Bioinformatics, N	Machine learning.						
	Recent Trends in various	distribution functions in the mathematical						
6	field of computer science	for varying fields like bioinformatics. soft	4	10				
-	computing, and computer	vision.		-				

#### Semester -I

	Sub Tota	al:						36	70		
	Internal Examina	Ass ation	sessm	ent Examin	ation & Pi	reparation	of Semester	4	30		
					Total:			40	100		
Assignment List of Bool	s: Based	on tl	neory								
Name of Au	thor		Title	e of the Book		Edition	/ISSN/ISBN	Name of	Name of the Publisher		
1. John Vince			Four for C	ndation Mathe Computer Scie	ematics ence	ISBN: 3	319214365	Springer			
2. K. Trived	i.		Prob with and App	bability and St Reliability, Q Computer Sci lications.	atistics Jueuing, ence	2 <sup>r</sup>	<sup>d</sup> Edition	Wiley			
3. M. Mitzer and E. Upfal	nmacher I.		Prob Rano Prob	bability and Co domized Algo babilistic Anal	omputing: orithms and ysis.	ISBN: 9	78 0521835404	Cambridg Press	e University		
4. Alan Tucl	ker		App	lied Combina	torics	ISBN: 9	ISBN: 9780470458389 Wiley				
End Semest	er Exami	inati	on Sc	cheme.	Maximum	Marks-70	). Ti	me allotted	l-3hrs.		
Group		nit		Objective Q (MCQ only thecorrect an No of questio nto be	with nswer) Total Marks	No of questio nto be	To answer	Marks per question	Total Marks		
A B C	A) A) A)	LL LL LL		10	10	5 5 5	3 3	15 45	70		
□ Only □ Spec give	y multiple cific instr en on top o	e-cho ructic ofthe	ice ty on to ques	pe questions ( the students tion paper.	(MCQ) with or to maintain t	he correct a he order in	nswer are to be se n answering obj	et in the obj ective que	ective part. stions should be		
Examinatio	n Scheme	e for	end s	Semester examination	mination:	f a a al-	Omenti	Onet	40 h 0 0 1		
Gr	oup			Chapter	Marks of anesti	eacn	Question to beset	Question	to be answered		
	A			ALL	quest	1	10		10		
	B			ALL		5	5		3		
	С			ALL	-	15	5		3		

Name of t Subject: A	he Course: M. Tech in Arti Advanced Data Structures a	ficial Intelligence and Data Science and Algorithms & Advanced Data Structur	res and Algori	thms Lab			
Course C	ode: PGCS(AI & DS)102, &DS)102	Semester: I	0				
Duration	36 Hrs.						
Teaching	Teaching Scheme Maximum Marks: 100+100						
Theory: 3		Examination Scheme					
Tutorial:	0	End Semester Exam:70					
<b>Practical</b> :	4	Attendance: 5					
Credit: 3-	+2	Continuous Assessment: 25					
		Practical /Sessional internal continuous ev	valuation: 40				
		Practical/ Sessional external examination	: 60				
Aim:							
Sl. No.							
1.	Understand the implementa	tion of symbol table using hashing technique	S				
2.	Develop and analyze algori	thms for red-black trees, B-trees, and Splay to	rees.				
3.	Develop algorithms for text	processing applications.	1 acomoters and	hlama			
4. Objective	·	ures and develop argorithms for computationa	a geometry pro	bolenis.			
SI No	•						
1.	Students should be able to c	choose appropriate data structures, understand	the ADT/ libr	aries, and use			
1	it to design algorithms for a specific problem.						
2.	2. Students should be able to understand the necessary mathematical abstraction to solve the problems.						
3.	<b>3.</b> To familiarize students with advanced paradigms and data structure used to solve algorithmic						
	problems.						
4.	Students should be able to c	come up with analysis of efficiency and proof	of correctness	•			
Pre-Requ	isite:						
SI. No.							
1.	UG Level Data Structures						
2.	Some knowledge of program	mming will be plus	<b>TT</b> / 1				
Contents			Hrs./week				
Chapter	Name of the Topic		Hours	Marks			
01	<b>01</b> Dictionaries: Definition, Dictionary Abstract Data Type, Implementation of Dictionaries. Hashing: Review of Hashing, Hash Function, Collision Resolution Techniques in Hashing, Separate Chaining, Open Addressing, Linear Probing, Quadratic Probing, Double Hashing, Rehashing, Extendible Hashing.710						
02	Skip Lists: Need for Randomizing Data Structures and Algorithms, Search and Update Operations on Skip Lists, Probabilistic Analysis of Skip Lists, Deterministic Skip Lists512						
03	Trees: Binary Search Trees, Trees, B-Trees, Splay Trees	AVL Trees, Red Black Trees, 2-3	9	12			
04	Text Processing: Sting Oper Boyer- Moore Algorithm Standard Tries, Compressed Algorithm, The Longest Applying Dynamic Program	rations, Brute-Force Pattern Matching, The n, The Knuth-Morris-Pratt Algorithm, d Tries, Suffix Tries, The Huffman Coding Common Subsequence Problem (LCS), nming to the LCS Problem.	12	16			

05	Compu Dimens Quadtre	nputational Geometry: One Dimensional Range Searching, Iwn nensional Range Searching, Priority Search Tree, Range Trees dtrees, k-D Trees.							1	0	15
06	Recent Convex	Con K Hul	nputation 1, Media	hal Geometry Axis and Sk	y: Triangulatio celetonization	n, Voro	noi I	Diagram,	:	5	5
	Sub To	otal:							4	8	70
	Interna Exami	al As natio	sessmen	t Examinati	on & Prepara	tion of S	Seme	ster			30
	Total:								4	0	100
Practical: Assignme List of Bo	nts (bas oks	ed or	n theory	classes)							
Name of A	Author		Title of	the Book		Editi	on/IS	SSN/ISBN	Nan	ne of th	e Publisher
1. Mark Weiss	Allen		Data Str Analysi	ructures and A s in C++	Algorithm	2nd Ed	lition		Pear	son, 20	004
2. M T C Rober	Goodrich to Tama	, ssia	Algorith	n Design					John	Wiley,	2002.
3. Comp Geom Algor Applio	utational etry: ithms an cations	l I I d	M. D. Be Kreveld,	erg, O. Cheon M. Overmars	g, M. v. 8	3 <sup>rd</sup> Edit	tion		Sprin	ger	
4. Advar Struct	nced Dat ures	a I	Peter Bra	ISS					Camb	oridge	
5. Advar Algor Data S	nced ithms an Structure	d s	M. L. Ro	сса					Manning Shelter Island		
List of eq	uipment	/app	aratus f	or laborator	y experiments:						
Sl. No.											
1.			Comput	er							
End Seme	ester Exa	amin	ation Sc	heme.	Maximum Ma	rks-70.		Time all	otted-3	<u>Shrs.</u>	
Group		Uni	t	(MCQ only correct answ	Questions y with the ver)			Subjective	e Ques	tions	
				No of question to be set	Total Marks	No of questi to be	ion set	To answer	Mar per	ks tion	Total Marks
А		ALI		10	10				4400		
В		ALI				5		3	15		
С		ALI				5		3	45		70
□ O □ S <sub>I</sub> gi	nly mult pecific in ven on to	iple-c istruc opof	choice ty ction to the the quest	pe questions he students to tion paper.	(MCQ) with on maintain the o	e correct rder in a	answ nswe	er are to be se ring objective	t in the questi	object ons sho	ive part. ould be
Examinat	ion Sch	eme f	for end s	emester exa	mination:		-			-	
Group			Chapte	r	Marks of e question	each	Qu set	estion to be		Questi answe	on to be red
A			ALL		1		10			10	
B			ALL		5		5			<u>3</u>	
C Examina	ation Sc	hem	ALL ie for Pi	ractical Ses	ional examin	ation:	5			3	

Practical Internal Sessional Continuous Evaluation

Internal Examination:		
Continuous evaluation		40
External Examination: Examiner-		
Signed Lab Assignments	10	
On Spot Experiment	40	
Viva voce	10	60

Name of the Subject: S	ne Course: M. Tech. in Artificial Intelligence a oft Computing and Soft Computing Lab	and Data Science				
Course Co	ode: PGCS(AI & DS)103A, Semest	er: I				
Duration:	36 Hrs. Maxim	um Marks:100+100				
Teaching S	Scheme Examin	nation Scheme				
Theory:3	End Se	emester Exam:70				
Tutorial:0	Attend	ance: 5				
Practical:4	4 Contin	uous Assessment: 25				
Credit:3+2	2 Practic	cal/ Sessional internal co	ntinuous	evaluation:40		
	Practic	cal /Sessional external ex	aminatio	n: 60		
Aim:						
Sl. No.						
1.	Cover the concepts of Fuzzy Logic (FL), Algorithm (GA).	Artificial Neural Netwo	orks (AN	Ns) and Genetic		
2.	Ability to apply Soft Computing techniques to	solve a number of real-life	e problem	s.		
3.	Provide exposure to theory as well as practical	systems and software use	d in soft o	computing.		
Objective:						
Sl. No.						
1.	To introduce soft computing concepts and appropriate technique for a given scenario.	techniques and foster th	heir abili	ties in designing		
2.	To implement soft computing-based solutions f	for real-world problems.				
3.	To give students knowledge of non-traditiona networks, fuzzy sets, fuzzy logic, genetic algor	l technologies and funda ithms.	mentals c	f artificial neural		
Pre-Requi	site:					
SI. NO. 1	Basic mathematical logic					
1.	Dask mathematical logic.					
Contents			]	Hrs./week		
Chapter	Name of the Topic		Hours	Marks		
01	<b>INTRODUCTION TO SOFT COMPUTING</b> Evolution of Computing, Soft Computing Conventional AI to Computational Intelligen Basics	<b>G:</b> g Constituents, From ace: Machine Learning	7	10		
02	FUZZY LOGIC:         Fuzzy Sets, Operations on Fuzzy Sets, Fuzzy Relations,         Membership Functions: Fuzzy Rules and Fuzzy Reasoning, Fuzzy         8         16         Inference Systems, Fuzzy Expert Systems, Fuzzy Decision Making,         Type II Fuzzy & its applications					
03	NEURAL NETWORKS: Machine Learning Using Neural Network, Ac forward Networks, Supervised Learning Ne Basis Function Networks: Reinforcement L Learning Neural Networks, Adaptive Re Advances in Neural networks	laptive Networks, Feed ural Networks, Radial earning, Unsupervised sonance architectures,	8	16		

	<b>GENETIC</b>	ALGORITH	MS:					
04	Introduction	to Genetic	Algorithms	A in	5	10		
04	Machine Lo	earning: Mac	hine Lear	ning Approa	edge	5	10	
	Acquisition.							
	HYBRID S	OFT COMPU	JTING TE	CHNIQUES				
05	Introduction	to Hybrid A	I systems:	Neuro- Fuzz	y, Fuzzy-rough	ı set	4	10
05	systems, Ne	uro-Fuzzy-GA	A systems	and case stuc	lies around Hy	brid		10
	systems							
	APPLICAT	IONS:						
06	Recent Tren	ds in deep le	arning, var	ious classifier	s, neural netw	orks	4	8
	and genetic	algorithm.	Implementa	tion of rece	ntly proposed	soft		_
	Computing to	ecnniques.					26	70
	Sub Total:	accoment E	romination	e Duonou	tion of Som	atom	30	70
	Examinatio	n	ammation	a rrepara	ation of Sena	ster	-	50
	Examinatio							
	Total:						40	100
Practical								
Assignmer	ts (based on	theory classe	s)					
List of Boo	oks:	encory crusse	5)					
Name of A	Name of Author Title of the Book Edition/ISSN/ISBN Na							e
	Pu						lisher	
Jyh:Shing I	Roger Jang,	Neuro-Fuzzy	and Soft	ISBN, 812	0322436,	Pre	ntice: Ha	ll of India, 2008.
Chuen:Tsai	Sun,	Computing		978812032	2431			
Eiji Mizuta	ni							
George J. k	Clir and	Fuzzy Sets a	nd Fuzzy	ISBN: 013	1011715	Pre	ntice Ha	ll, 1995.
Bo Yuan		Logic: Theorem	ryand					
		Applications						
End Semes	ster Examina	tion Scheme.	N	laximum Ma	rks-70.	Гime	allotted	-3hrs.
Group	Unit	Objective (	Juestions		Subjective	01100	tions	
Oroup	Cimt	(MCO only	with		Subjective	Que	0010115	
		the correct a	answer)					
		No of	Total	No of	То	Ma	rks	Total Marks
		question	Marks	question	answer	ner	1 13	
		to be set	ivituri iss	to be set	unswer	ane	stion	
		10	10			1		
A	ALL	10	10			1		
				5	3	5		
В	ALL			5	5	5		
				5	3	15		70
С	ALL							
• On	ly multiple cl	noice type que	stions (MC	Q) with one c	orrect answer a	re to	be set in	theobjective part.
• Spe	ecific instruct	tion to the stu	dents to m	aintain the or	der in answeri	ng ob	jective c	uestions should be
giv	en on top of t	he question pa	aper.					
Examinati	on Scheme fo	or end semest	er examina	tion:				
C	oun	Chanter	Ma	rks of each	Question	to	(	Question to be
G	oup	Chapter	(	uestion	beset			answered
	A	ALL		1	10			10
	B	ALL		5	5			3
1	С	ALL		15 5				3

Practical Internal Sessional Continuous Ev	Practical Internal Sessional Continuous Evaluation					
Internal Examination:						
Continuous evaluation		40				
External Examination: Examiner-						
Signed Lab Assignments	10					
On Spot Experiment	40					
Viva voce	10	60				

Name of t Subject: H	he Course: M. Tech. in Artific Pattern Recognition and Patter	ial Intelligence and Data Science n Recognition Lab				
Course C	bode: PGCS(AI & DS)103B, & DS)193B	Semester: I				
Duration:	36 Hrs.	Maximum Marks:100+100				
Teaching	Scheme	Examination Scheme				
Theory:3	~	End Semester Exam:70				
Tutorial:(		Attendance: 5				
Practical:	4	Continuous Assessment: 25				
Credit:3+	2	Practical /Sessional internal continuou	s evaluation:4	10		
		Practical /Sessional external examinat	ion:60			
Aim:						
Sl. No.						
1.	Ability to Understand and app and characterize patterns in rea	ly both supervised and unsupervised clas l-world data	sification meth	ods to detect		
Objective	:					
Sl. No.						
1.	1. Understand the concept of a pattern and the basic approach to the development of pattern recognition and machine intelligence algorithms					
2.	2. Understand the basic methods of feature extraction, feature evaluation, and data mining.					
Pre-Requ	isite:					
Sl. No.						
1.	Fundamentals of Programmi	ng				
2.	Mathematics					
Contents			Hrs./week			
Chapter	Name of the Topic		Hours	Marks		
01	Unit 1: Introduction to pattern recognit Basic concepts- Definitions, Structure of a typical pattern re of Pattern Recognition. Rep Metric and non-metric proximi	ion: data sets for Pattern Recognition, ecognition system. Different Paradigms resentations of Patterns and Classes. ty measures.	6	14		
02	<b>Unit 2:</b> Features selection: Feature y approaches to Feature Sele Sequential Feature Selection.	vectors - Feature spaces - Different ection-Branch and Bound Schemes.	6	14		
03	Unit 3: Features extraction: Principal PCAand Case studies	Component Analysis (PCA), Kernel	6	14		
04	Unit 4: Pattern classification: Pattern of - Bayes' classifier -Classificat error probabilities. Linear Distance, K- NN Classifier, F Multi-layer Perceptron, Train Normalization and Case studies	classification using Statistical classifiers ion performance measures – Risk and Discriminant Function, Mahalanobis isher's LDA, Single Layer Perceptron, ing set, test set; standardization and	12	14		
05	Unit 5: Clustering: Basics of Clusteri clustering criteria. Different measures.K-means algorithm, I	ng; similarity / dissimilarity measures; distance functions and similarity K-medoids, DBSCAN and Case studies	6	14		

	Sub To	otal:								36	70	
	Intern Exami	al Assess nation	ment Examinat	ion	& Prep	arat	tion of Se	mester		4	30	
	Total:									40	100	
Practical: Assignmen List of Boo	ts (bas ks:	ed on the	eory classes)									
Name of A	uthor		Title of the Bo	ok			Edition	/ISSN/ISBN	Nan	ne of the	Publisher	
Sheldon M Ross			Introduction and Statistics for and Scientists	to P or E	robabili Ingineer	ty s	ISBN: 97	80128177471	Else Pres	Elsevier Academic Press		
R.O.Duda, D.G.Stork	P.E.Ha	rt and	Pattern Classif	icati	ion		ISBN: 04	71056693	Joh	n Wiley,	2001	
B. Lubanov	ric		Introducing Py	tho	n		ISBN: 97	81492051367	O'R	Reilly		
Murray R. S	Spiegel	,	Schaum's Outl	ines	on		ISBN: 00	070602816	Mc	Graw-Hi	11	
Larry J. Ste	phens		Statistics				ISBN: 97	80070602816				
Eric Matthe	2S		Python Crash C	Cou	rse		2n	d Edition	No	Starch P	ress	
List of equi	ipment	/apparat	us for laborato	ry e	xperim	ents:						
SI. No.												
1. Computer												
End Semes	ter Ex	aminatio	n Scheme.	]	Maxim	ım N	Aarks-70	. Т	'ime a	me allotted-3hrs.		
Group		Unit	Objective (MCQ only correct answ	Que with ver)	estions the			ve Questions				
			No of question to be set	T N	'otal Iarks		No of question to be setTo answer		Marks per question		Total Marks	
А		ALL	10	1	0							
В		ALL					5	3	5			
С		ALL					5	3	15		70	
□ Onl □ Spe give Examinatio	ly mult ecific ir en onto on Scho	iple choic nstruction op of the c e <b>me for e</b>	to the students question paper. a semester examples	(MC to :	CQ) with maintair nation:	n one n the	e correct a order in	answer are to be answering ob	e set in jective	the obje questio	ective part. ns should be	
G	Froup		Chapter		Mark	s of e	each	Question to I	be	Quest	ion to be	
	-		-		que	estio	n	set		ans	wered	
	Α		ALL			1		10			10	
	B		ALL			5		5			3	
	С		ALL			15		5			3	
Examinat	ion Sc	heme for	r Practical Ses	sio	nal exa	min	ation:					
Practical ]	Intern	al Sessio	onal Continuo	ıs F	Evaluat	ion						
Internal E	xamir	nation:										
Continuous	evalua	ation									40	
External I	£xami	nation:	Examiner-									
Signed Lal	o Assig	gnments			10							
On Spot E	xperim	nent			40							
Viva voce					10						60	

Name of the	e Course: M. Tech. in Artific	cial Intelligence and Data Science					
Subject: M	Iachine Learning and Machine Learning Lab       Adds. BC (S(AL & DS))103C						
Course Coo	bde: PGCS(AI & DS)103C, Semester: 1						
FGCS(AI C	6 hours	Maximum Marks·100+100					
Teaching S	cheme	Examination Scheme					
Theory:3		End Semester Exam:70					
Tutorial:0		End Semester Exam:70					
Practical:4		Attendance: 5					
Credit:3+2		Continuous Assessment: 25					
		Practical /Sessional internal continuous	evaluatio	on:40			
		Practical/ Sessional external examination	on:60				
Aim:	Γ						
Sl. No.							
1.	Extract features that can applications.	be used for a particular machine learnir	ng approa	ch in various AI			
2.	To compare and contrast principal to f when to apply a p	pros and cons of various machine learnin particular machine learning approach.	g techniqu	ies and to get an			
3.	To mathematically analyze	various machine learning approaches and p	aradigms.				
<b>Objective:</b>	1						
Sl. No.							
1.	<b>1.</b> To learn the concept of how to learn patterns and concepts from data without being explicitly programmed in various nodes.						
2	To design and analyze various machine learning algorithms and techniques with a modernoutlook						
2.	focusing on recent advances	8.					
3.	Explore supervised and uns	upervised learning paradigms of machine le	earning.				
4.	To explore Deep learning te	chnique and various feature extraction strat	tegies.				
Pre-Requis	ite:						
SI. NO.	Algorithm and Data Strug	41140					
1.	Algorithin and Data Struc	ture					
Contents			Hrs /we	ek			
Chapter	Name of the Topic		Hours	Marks			
	Unit 1:						
01	<ul> <li>Supervised Learning (Regression/Classification)</li> <li>Basic methods: Distance-based methods, Nearest-Neighbours, Decision Trees, Naïve Bayes</li> <li>Linear models: Linear Regression, Logistic Regression, Generalized Linear Models</li> <li>Support Vector Machines, Nonlinearity and Kernel Methods</li> <li>Beyond Binary Classification: Multi-class/Structured</li> </ul>						
	Beyond Binary Classification: Multi-class/Structured     Outputs, Ranking						
02	<ul> <li>Unsupervised Learning</li> <li>Clustering: K-means/K</li> <li>Dimensionality Reduct</li> <li>Matrix Factorization at</li> <li>Generative Models (means the second second</li></ul>	Kernel K-means tion: PCA and kernel PCA nd Matrix Completion ixture models and latent factor models)	6	12			

	Total:	40	100
	Examination		
	Internal Assessment Examination & Preparation of Semester	4	30
	Sub Total:	36	70
07	learning techniques applications of machine learning.	5	8
07	Recent trends classification applications in various methods for	5	8
06	Statistical Machine Learning: Density estimation, Gaussian processes: bivariate, multi-variate, Regression, Non-parametric Bayesian methods, Statistical distribution-based learning	5	8
05	Scalable Machine Learning (Online and Distributed Learning) A selection from some other advanced topics, e.g., Semi-supervised Learning, Active Learning, Reinforcement Learning, Inference in Graphical Models, Introduction to Bayesian Learning and Inference	4	12
04	Sparse Modeling and Estimation, Modeling Sequence/Time-Series Data, Deep Learning and Feature Representation Learning	4	10
03	Evaluating Machine Learning algorithms and Model Selection, Ensemble Methods (Boosting, Bagging, Random Forests)	5	12

Practical: Skills to be developed:

Intellectual skills

List of Practical

Based on Theory

Assignments: Based on Theory

List of Books:

Name of Author	Title of the Book	Edition/ISSN/ISBN	Name of the Publisher
1. Kevin Murphy	Machine Learning: A Probabilistic Perspective	ISBN 9780262018029	MIT Press, 2012
2. Trevor Hastie, Robert	The Elements of	2 <sup>nd</sup> Edition	Springer 2009
Tibshirani, Jerome	Statistical Learning,		
Friedman,			
3.Christopher Bishop,	Pattern Recognition and	ISBN 9781493938438	Springer, 2007
	Machine Learning		
List of equipment/appar	atus for laboratory experi	ments:	
Sl. No.			
1.	Desktop Computer		
2.	GPU Workstation		

End Semeste	er Examinat	ion Scheme.	Max	ximum	Marks-70	. Ti	ime al	llotted-	3hrs.
Group	Unit	<b>Objective Questi</b> (MCQ only with t answer)	ons the corr	rect		Subjective	Ques	tions	
		No of question to be set	Total Mark	S	No of question to be set	To answer	Mar per ques	ks stion	Total Marks
A	ALL	10	10		5	3	15		
в С	ALL				5	3	45		70
□ Only □ Spec be gi	multiple cho ific instruction ven ontop of	bice type question (1) on to the students to the question paper.	MCQ) mainta	with or ain the	ne correct a order in an	nswer are to be swering objecti	set in ive qu	the obj estions	jective part. should
Group	<u>i Scheme for</u>	Chapter	Ma Ma qu	arks of estion	f each	Question to b set	e	Quest	tion to be ered
Α		ALL	1			10		10	
В		ALL	5			5		3	
С		ALL	15			5		3	
Examinatio	n Scheme for	r Practical Session	al exar	minati	on:				
Practical In	ternal Sessio	onal Continuous Ev	valuati	ion					
Internal Exa	amination:								
Continuous	evaluation								40
External Ex	amination:	Examiner-		·					
Signed Lab	Assignments		-	10					
On Spot Exp	periment		4	40					
Viva voce			-	10					60

Name of the Subject: Da	Course: M. Tech. in Artifici ata Mining	al Intelligence and Data Science		
Course Cod	le: PGCS (AI &DS) 104A	Semester: I		
Duration: 3	6 Hrs.	Maximum Marks: 100		
Teaching Section	cheme	Examination Scheme		
Theory: 3		End Semester Exam: 70		
Tutorial: 0		Attendance: 5		
Practical: 0		Continuous Assessment: 25		
Credit: 3				
Aim:				
Sl. No.				
1.	Students should be able to u difficulties	nderstand different classes of problems c	oncerning t	heir computation
2.	Ability to introduce the stude	ents to recent developments in the area of	algorithmic	design.
Objective:				
Sl. No.				
1.	Introduce students to the adv	anced methods of designing and analyzing	g algorithms	
2.	The student should be able to	choose appropriate algorithms and use it	for a specif	ic problem.
Pre-Requi	site:			
Sl. No.				
1.	Understanding of basic log	ic and programming.		
Contents			Hrs./wee	k
Chapter	N	me of the Tonic	Hours	Morks
Chapter	Inter du sti se	line of the Topic	110015	
	Introduction, Incremental & Stream	Data Mining		
	Incremental Algorithm	ns for Data Mining		
01	Characteristics of Stre	eaming Data	6	10
•1	Issues and Challenges		0	10
	• Streaming Data Minin	ng Algorithms		
	Any time stream Min	ing		
	Distributed computing soluti	ons for data mining		
02	Map Reduce/Hadoop	p and Spark	6	14
	Cluster Computing			
	Mining Complex Structures	and the second		
	Algorithmic Develop	pment Issues		
0.2	• Mining trees	Franciscus elle		1.4
03	• Tree Model Guided	Framework	6	14
	<ul> <li>I MG Iramework for</li> <li>Troo Mining Application</li> </ul>	mining ordered & unordered sub tree		
	<ul> <li>Tree winning Applica</li> <li>Mining Graphs o Ar</li> </ul>	auous		
	<ul> <li>winning Oraphis 0 Ap</li> </ul>	proaches to graph mining		

	Sequence M	lining				
	• Char	acteristics of Sequence Data				
0.4	• Prob	lem Modelling			6	14
04	• Sequ	ential Pattern Discovery			0	14
	• Timi	ng Constraints				
	<ul> <li>Appl</li> </ul>	lications in Bioinformatics				
	Text Mining	r 2				
	• Text	Classification				
	• Vect	or Space Model				
	• Flat	and Hierarchical Clustering				
05	• Web	Search			6	14
05	• Craw	vling & Indexing			0	14
	<ul> <li>Нуре</li> </ul>	erlink Analysis				
	Page	Rank algorithm				
	• Web	Search and Information Ret	rieval			
	• Case	e Study: Query Recommende	er System			
	Multivariate	e Time Series (MVTS) Minin	ng			
	• Impo	ortance of MVTS data				
0.5	• Sour	ces of MVTS data			_	
06	<ul> <li>Mini</li> </ul>	ng MVTS data			6	4
	<ul> <li>Sign</li> </ul>	Language Data				
	• Agro	o-meteorological Data				
	Sub Total:				36	70
	Internal A	ssessment Examination	& Preparation of Semes	ter		•
	Examinatio	)n			4	30
	Total:				40	100
List of Bool	<b>KS:</b>					
Name of A	uthor	Title of the Book	Edition/ISSN/ISBN	Nam	ne of the	Publisher
Hadzic F., 7	Гап Н. &	Mining data with	ISBN: 3642267033	Sprin	nger.	
Dillon T. S		Complex Structures				
Yates R. B.	and Neto	Modern Information	2 <sup>nd</sup> Edition	Pear	son Educ	ation India
B. R		Retrieval				

End Seme	ster Examin	ation Scher	me. Ma	ximum Marks-70. Time allotted-3hrs.				
Group	Unit	Objective (MCQ only the correct	<b>Questions</b> y with answer)		Subjective	ective Questions		
		No of question to be set	Total Marks	No of question to be set	To answer	Marks per question	Total Marks	
A	ALL	10	10					
В	ALL			5	3	5	70	
С	ALL			5	3	15		

- Only multiple choice type questions (MCQ) with one correct answer are to be set in the objective part.
- Specific instruction to the students to maintain the order in answering objective questions should be given on top of the question paper.

#### **Examination Scheme for end semester examination:**

Group	Chapter	Marks of each question	Question to be set	Question to be answered
Α	ALL	1	10	10
В	ALL	5	5	3
С	ALL	15	5	3

Name of the Subject: C	e Course: M. Tech. in Artificia	l Intelligence and Data Science		
Course Co	ode: PGCS(AI &DS)104B	Semester: I		
Duration: 3	6 Hrs.	Maximum Marks: 100		
Teaching S	cheme	Examination Scheme		
Theory: 3		End Semester Exam: 70		
Tutorial: 0		Attendance: 5		
Practical: 0		Continuous Assessment: 25		
Credit: 3				
Aim:				
Sl. No.				
1.	Gain comprehensive theoret implementation and analysis	ical knowledge as well as practical skil of CI approaches, algorithms and methods.	ls related to	o the design,
2.	Explain, critically review, and research papers in areas of Cl	d discuss research papers in areas of CI; ind I and write literature review papers on topics	lependently of CI	analyze
Objective:				
SL No				
51. 110.	Gain comprehensive theoreti	cal knowledge as well as practical skills re	lated to the	design.
1.	implementation and analysis	of CI approaches, algorithms and methods.		
2.	Explain, critically review, and	discuss research papers in areas of CI; indep Land write literature review papers on tonics	endently an	alyze
	Discuss and argue about curr	ant topics in CI:	01 C1	
3.	Discuss and argue about curre	ent topics in CI,		
Dro Dogui	site			
Pre-Kequi	sne:			
SI. NO. 1	High-level programming lan	guage (like C C++ or Java)		
1,				
Contents			Hrs./weel	ζ.
Chapter	Name of the Topic		Hours	Marks
01	Introduction to Computation Introduction, Overview of Co CI, CI technique, Tic -Tac - T Intelligent Agents, Agents structure of agents, goal bas agents.	<ul> <li><b>hal Intelligence</b></li> <li>mputational Intelligence (CI)- Problems of oe problem.</li> <li>&amp; environment, nature of environment, sed agents, utility based agents, learning</li> </ul>	6	14
02	Artificial Neural Networks Basic concepts of Neural architectures: single layer, r basic models, Perceptron, I propagation, ADALINE, M convergence of Multilayer Organizing Feature Maps. Classification techniques: I Unsupervised & reinforced; S medoid based algorithm. Deep learning: Motivation, I Nets, Deep Learning Use Case	networks, mathematical model, Typical nultilayer, Common activation functions; Multilayer feed forward network, Back IADALINE, Different issues regarding Perceptron, Competitive learning, Self- Different learning methods: Supervised, Simple Clustering algorithm, k-means & k- Deep Convolutional Networks, Recurrent es.	6	14
03	Genetic Algorithms Evolutionary and Stochastic te GA in optimization, Fitness Cross over, Mutation, Invo convergence of Genetic Algo models, multi objective evolut	echniques: Genetic Algorithm (GA), role of function, Selection of initial population, ersion, Deletion, Schema theorem and rithm, Simulated annealing and Stochastic cionary algorithm (MOEA)	6	14

04	Swarn Particle Fish So Neighb Ant C Combi Proofs, ACO: Rank E	n Opti e Swa choolin oorhoo Colony natoria ACO Elitist Based A	mization rm Optimiza ng, Evolution d Topologies, Optimizati al optimizatio Algorithm, Ant System Ant Colony S	tion (PSO): Prind of PSO, Operatin , Convergence Cri on (ACO) - n and meta heuris ACO and Model (EAS), Minmax ystem (RANKAS	ciples of Bird g Principles, P iteria, Variation Theoretical C stic, Stigmergy Based Search, Ant System ),	Flocking SO Algorith as of PSO. Considerations (Converge Variations (MMAS) a	and nm, ons, nce Of and	6	10
05	<b>Fuzzy</b> Fuzzy functio Cartesi Defuzz recogn	Syster sets a n, ope an pr ificati- ition a	ns nd Fuzzy log rations on fuz roduct, Ope on methods. nd image pro-	gic, Fuzzy sets ve zzy sets, linguistic rations on relat Applications, fuz cessing	ersus crisp set c variable, Fuz tions; Extens zy controllers,	s, members zy relations ion princij fuzzy patt	hip  ole, ern	6	4
06	Hybrid Hybrid Based and Le Applic	<b>lizatio</b> Syste Neura earning ations.	on of CI Algo ems, Neural-M l Networks, G g, Fuzzy Log	rithms Network-Based Fr Genetic Algorithm gic and Genetic A	uzzy Systems, 1 for Neural N Algorithm for	Fuzzy Log etwork Des Optimizati	gic- ign on,	6	14
	Sub To	otal:						36	70
	Intern Exami	al Ass natior	essment Exa	mination & Prep	aration of Sei	nester		4	30
	Total:							40	100
List of Boo	ks.								
Name of A	uthor	Title	e of the Book		Edition/ISSN	N/ISBN	Nar	ne of the P	ublisher
Andries P.		Comp	utational Inte	lligence:An	2 <sup>nd</sup> Edi	tion		Wile	ey
Engelbrecht		Introd	uction	0					
Ritch & Knig	ght	Artific	cial Intelligen	ce	3 <sup>rd</sup> Edit	3 <sup>rd</sup> Edition		IcGraw Hill	Education
Nils Nilsson		Artific	cial Intelligen	ce	1 <sup>st</sup> Edit	ion		Elsev	vier
List of equ	ipment/	appar	atus for labo						
SL No	-		avas ioi iaso	oratory experime	nts:				
NI 101				oratory experime	nts:				
1.		Corr	nouter	oratory experime	nts:				
1. End Semes	ter Exa	Con minat	ion Scheme.	Maximu	nts: um Marks-70.	Time	e allo	otted-3hrs.	
1. End Semes Group	ter Exa	Com minat nit	ion Scheme. Objecti (MCQ o corre	Maximu Ve Questions only with the ct answer)	nts: m Marks-70.	Time	e allo ubje	otted-3hrs. ctive Quest	tions
1. End Semes Group	ter Exa	Com minat nit	iputer ion Scheme. Objecti (MCQ o corre No of question to be set	Maximu Ve Questions only with the ct answer) Total Marks	nts: m Marks-70. No of question to be set	Time S To answer	e allo ubje Ma qu	otted-3hrs. ctive Quest arks per uestion	tions Total Marks
1. End Semes Group	ter Exa Uı ALL	Com minat nit	ion Scheme. Objecti (MCQ o corre No of question to be set 10	Maximu Ve Questions only with the ct answer) Total Marks	nts: m Marks-70. No of question to be set	Time S To answer	e allo ubje Ma qu	otted-3hrs. ctive Quest arks per uestion	tions Total Marks
1.       End Semes       Group       A       B	ter Exa Uı ALL ALL	Com minat nit	nputer ion Scheme. Objecti (MCQ o corre No of question to be set 10	Maximu Ve Questions only with the ct answer) Total Marks	nts: m Marks-70. No of question to be set	Time S To answer	e allo ubje Ma qu	otted-3hrs. ctive Quest arks per uestion	tions Total Marks

- Only multiple choice type questions (MCQ) with one correct answer are to be set in the objective part.
- Specific instruction to the students to maintain the order in answering objective questions should be given on top of the question paper.

Examination Sche	eme for end se	emester examination:		
Group	Chapter	Marks of each question	Question to be set	Question to be answered
Α	ALL	1	10	10
В	ALL	5	5	3
С	ALL	15	5	3
Examination Sche	me for Practi	cal Sessional examination:	·	
Practical Internal	Sessional Co	ntinuous Evaluation		
Internal Examinat	tion:			
Continuous evalua	ation			40
External Examina	tion: Examin	er-	·	
Signed Lab Assign	nments	10		
On Spot Experime	ent	40		
Viva voce		10		60

Name of the Subject: N	e Course: M. Tech. in Artificial Intelligence and Data atural Language Processing	a Science		
Course Cod	le: PGCS (AI &DS)104C Semester: I			
<b>Duration: 3</b>	6 Hrs. Maximum Marks: 100			
Teaching S	cheme Examination Scheme			
Theory: 3	End Semester Exam: 70			
Tutorial: 0	Attendance: 5			
Practical: 0	Continuous Assessment	: 25		
Credit: 3				
Aim:				
Sl. No.				
1.	Understand the semantic for language processing.			
2.	Apply NLP for language processing.			
Objective:				
Sl. No.				
1.	Gain an in-depth understanding of the computational pr	operties of natura	al languages.	
2.	Understanding semantics and pragmatics of English lan	guage for proces	sing	
3.	How key concepts from NLP are used to describe and a	nalyze language		
4.	POS tagging and context free grammar for English lang	guage.		
5.	Gain an in-depth understanding of the computational pr	operties of natura	al languages.	
Pre-Requi	site:			
Sl. No.				
1.	Mathematics & Programming concept			
Contents			Hrs.	/week
Chapter	Name of the Topic		Hours	Marks
01	Introduction- Human languages, models, ambigui paradigms; Phases in natural language processing, app representation in computers, encoding schemes.	ty, processing plications. Text	6	10
02	Linguistics resources- Introduction to corpus, element corpus, TreeBank, PropBank, WordNet, VerbNett management with XML, Management of linguistic dat of GATE, NLTK. Regular expressions, Finite State A recognition, lexicon.	nts in balanced etc. Resource a with the help Automata, word	6	12

03	Morphology smoothing, Stochastic P	r, acquisition f entropy, HMM OS tagging, H	models, Finite 1, ME, SVM, MM.	e State Transdu CRF. Part of S	cer. N- gram peech tagging	s, g- 6		10
04	Handling of A survey or and idioms, agreement, O Unification,	unknown wor natural langu word order, Context Free C probabilistic p	ds, named ent lage grammar agreement, Grammar, spol parsing, TreeB	ities, multi wor s, lexeme, phor tense, aspect a ken language sy ank.	d expression nemes, phrase nd mood ar yntax. Parsing	s. es nd 6 g-		20
05	Semantics- semantics, restriction, approaches. reference, al structure.	emantics- Meaning representation, semantic analysis, lexical emantics, WordNet Word Sense Disambiguation- Selection estriction, machine learning approaches, dictionary-based oproaches. Discourse- Reference resolution, constraints on co- efference, algorithm for pronoun resolution, text coherence, discourse ructure.						15
06	6 Applications of NLP- Spell-checking, Summarization Information Retrieval- Vector space model, term weighting, homonymy, polysemy, synonymy, improving user queries. Machine Translation– Overview							3
	Sub Total:							70
	Internal Assessment Examination & Preparation of Semester Examination							30
	Total:					40		100
List of Boo	ks:							
Name of A	uthor	Title of the H	Book	Edition/ISS	SN/ISBN	Name of th	e Publis	sher
Daniel Jura	fsky	An Introduct	ion to Natura	1 Third Editio	on draft	Tata Mo	cGraw-H	Hill
James H.M	artin	Language Computation and Speech F	Processing al Linguistics Recognition	,				
James H.M Gary J. Bro	artin onson	Language Computation and Speech F A First Book	Processing al Linguistics Recognition of ANSI C	, 4 <sup>th</sup> Edit	ion	ACM		
James H.M Gary J. Bro James A	artin onson	Language Computation and Speech F A First Book Natural langu Understandin	Processing al Linguistics, Recognition of ANSI C nage	, 4 <sup>th</sup> Edit ISBN: 97803	ion 805303346	ACM Pearson Edu	ucation,	1994
James H.M Gary J. Bro James A Bharati A., R.,Chaitany	artin onson Sangal 7a V.	Language Computation and Speech F A First Book Natural langu Understandin Natural processing: a perspective	Processing al Linguistics. Recognition of ANSI C hage language Paninian	, 4 <sup>th</sup> Edit ISBN: 97803 ISBN: 81203	ion 805303346 309219	ACM Pearson Edu PHI, 2000	ucation,	1994
James H.M Gary J. Bro James A Bharati A., R.,Chaitany Siddiqui T. S.	artin onson Sangal /a V. , Tiwary U.	Language Computation and Speech F A First Book Natural langu Understandin Natural processing: a perspective Natural processing an retrieval	Processing al Linguistics. Recognition of ANSI C hage g language Paninian language nd Information	, 4 <sup>th</sup> Edit ISBN: 97803 ISBN: 81203 e ISBN01956	ion 805303346 309219 992322:	ACM Pearson Edu PHI, 2000 OUP, 2008	ucation,	1994
James H.M Gary J. Bro James A Bharati A., R.,Chaitany Siddiqui T. S. List of equ	artin onson Sangal /a V. , Tiwary U. <b>ipment/appa</b>	Language Computation and Speech F A First Book Natural langu Understandin Natural processing: a perspective Natural processing an retrieval	Processing al Linguistics. Recognition of ANSI C lage g language Paninian language nd Information	, 4 <sup>th</sup> Edit ISBN: 97803 ISBN: 81203 e ISBN01956 n iments:	ion 805303346 309219 92322:	ACM Pearson Edu PHI, 2000 OUP, 2008	ucation,	1994
James H.M Gary J. Bro James A Bharati A., R.,Chaitany Siddiqui T. S. List of equ Sl. No.	artin onson Sangal /a V. , Tiwary U. <b>ipment/appa</b>	Language Computation and Speech F A First Book Natural langu Understandin Natural processing: a perspective Natural processing as retrieval	Processing al Linguistics. Recognition of ANSI C lage g language Paninian language nd Information pratory expert	, 4 <sup>th</sup> Edit ISBN: 97803 ISBN: 81203 e ISBN01956 n iments:	ion 805303346 309219 992322:	ACM Pearson Edu PHI, 2000 OUP, 2008	ucation,	1994
James H.M Gary J. Bro James A Bharati A., R.,Chaitany Siddiqui T. S. List of equ Sl. No. 1. End Semes	artin onson Sangal /a V. , Tiwary U. ipment/appa	Language Computation and Speech F A First Book Natural langu Understandin Natural processing: a perspective Natural processing an retrieval ratus for labor Computer	Processing al Linguistics. Recognition of ANSI C lage lg language Paninian languag nd Information pratory expert	, 4 <sup>th</sup> Edit ISBN: 97803 ISBN: 81203 e ISBN01956 n iments:	ion 805303346 309219 992322:	ACM Pearson Edu PHI, 2000 OUP, 2008	ucation,	1994
James H.M Gary J. Bro James A Bharati A., R.,Chaitany Siddiqui T. S. List of equ Sl. No. 1. End Semes Group	artin onson Sangal /a V. , Tiwary U. ipment/appa ster Examina Unit	Language Computation and Speech F A First Book Natural langu Understandin Natural processing: a perspective Natural processing an retrieval ratus for labor Computer tion Scheme. Objective Q (MCQ only correct ans No of	Processing al Linguistics. Recognition of ANSI C lage g language Paninian language nd Information pratory experi- pratory experi- Max Questions with the wer)	, 4 <sup>th</sup> Edit ISBN: 97803 ISBN: 97803 ISBN: 81203 e ISBN01956 n iments: imum Marks-7 S	ion 805303346 309219 92322: 70. 5ubjective Q To	ACM Pearson Edu PHI, 2000 OUP, 2008 Time allotted uestions	d-3hrs.	1994

А	ALL	10	10					
		10	10					
В	ALL			5		3	5	70
C				5		3	15	
C	ALL			5		5	15	
• Only	y multiple ch	oice type que	stions (MCQ)	) with one co	orrec	t answer are	to be set in th	neobjective part.
• Spec	cific instructi	on to the stu	dents to main	ntain the or	der i	n answering	objective qu	estions should be
give	en on top of th	ne question pa	per.			C		
Examinatio	on Scheme for	r end semest	er examinati	on:				
Group		Chapter	Marks of	f	Que	stion to be	Questio	n to be
-		-			Set		-	
			each que	estion	set		answere	ed
A	A	ALL	each que	estion 1	set	10	answere	ed 10
A	A B	ALL ALL	each que	estion 1 5	set	<u>10</u> 5	answere	ed 10 3
A I C	A B C	ALL ALL ALL	each que	estion 1 5 15	set	10 5 5		ed 10 3 3 3
A H C Examinatio	A B C on Scheme fo	ALL ALL ALL r Practical S	each que	estion 1 5 15 nination:	set	10 5 5		ed <u> 10 3 3 </u>
A H C Examinatio Practical In	A B C on Scheme fo iternal Sessio	ALL ALL ALL r Practical So onal Continue	each que	estion 1 5 15 15 nination: on	set	10 5 5		ed 10 3 3 3
A F Examinatio Practical In Internal Ex	A B C on Scheme fo aternal Sessio amination:	ALL ALL ALL r Practical So onal Continue	each que	estion 1 5 15 nination: on	set	10 5 5		ed 10 3 3 3
A Examinatio Practical In Internal Ex Continuous	A B C on Scheme fo aternal Session camination: Evaluation	ALL ALL ALL r Practical So onal Continue	each que	estion 1 5 15 nination: on	set	10 5 5		ed 10 3 3 40
A Examinatio Practical In Internal Ex Continuous External Ex	A B C on Scheme fonternal Session ternal Session ternal Session ternal Session ternal Session ternal Session ternal Session ternal Session ternal Session	ALL ALL ALL r Practical So onal Continue Examiner-	each que	estion 1 5 15 nination: on	set	<u>10</u> <u>5</u> <u>5</u>		ed 10 3 3 40
A Examinatio Practical In Internal Ex Continuous External Ex Signed Lab	A B C on Scheme fo aternal Session camination: Evaluation kamination: Assignments	ALL ALL r Practical So onal Continue Examiner-	each que	estion 1 5 15 nination: on	set	10 5 5		ed 10 3 3 40
A Examinatio Practical In Internal Ex Continuous External Ex Signed Lab On Spot Exp	A B C on Scheme for iternal Session amination: Evaluation Kamination: Assignments periment	ALL ALL ALL r Practical So onal Continue Examiner-	each que	estion 1 5 15 nination: on	set	10 5 5 	answere	ed <u> 10 3 3 40 </u>

Name of th	e Course: M. Tech. in Artificial Intelligence and Data Science		
Subject: Re	esearch Methodology and IPR		
Course Coo	te: PGCS (AI &DS)105 Semester: I		
Duration: 3	56 hours Maximum Marks:100		
Teaching S	cheme Examination Scheme		
Theory:2	End Semester Exam:70		
Tutorial:0	End Semester Exam:70		
Practical:0	Attendance: 5		
Credit: 2	Continuous Assessment: 25		
Aim:			
SI. No.			
1.	Understand research problem formulation		
2.	Analyze research related information		
3.	Follow research ethics		
<b>Objective:</b>			
Sl. No.			
1.	Understand research problem formulation		
2.	Analyze research related information		
3.	Follow research ethics		
	Understand that today's world is controlled by Computer. Information Tec	hnology, bu	it tomorrow
4.	world will be ruled by ideas, concept, and creativity		
	Understanding that when IPR would take such important place in growth o	f individual	s & nation,
5.	it is needless to emphasize the need of information about Intellectual	Property H	Right to be
	promoted among students in general & engineering in particular	1 2	C
	Understand that IPR protection provides an incentive to inventors for furt	her researc	h work and
6.	investment in R & D, which leads to creation of new and better products, and	nd in turn b	rings about.
	economic growth and social benefits		
Pre-Requis	ite:		
<b>I</b>	Nil		
Contents		Hrs./weel	K
Chapter	Name of the Topic	Hours	Marks
	Meaning of research problem, Sources of research problem, Criteria		
	Characteristics of a good research problem, Errors in selecting a research		
01	problem, Scope and objectives of research problem. Approaches of	6	14
	investigation of solutions for research problem, data collection, analysis,		
	interpretation, Necessary instrumentations.		
02	Effective literature studies approach, analysis Plagiarism, Research ethics	6	10
	Effective technical writing, how to write report, Paper Developing a		
03	Research Proposal, Format of research proposal, a presentation and	6	14
	assessment by a review committee.		
	Nature of Intellectual Property: Patents, Designs, Trade and Copyright.		
	Process of Patenting and Development: technological research,		
04	innovation, patenting, development. International Scenario: International	6	14
	cooperation on Intellectual Property. Procedure for grants of patents,		
	Patenting under PCT.		
05	Patent Rights: Scope of Patent Rights. Licensing and transfer of	6	14
	technology. Patent information and databases. Geographical Indications.	0	1 ľ

06	New deve Trad	Develop lopments itional kno	men in Il owle	nts in IPR: PR; IPR of Bi edge Case Stu	Administration ological System dies, IPR and	on of Patent tems, Comput 1 IITs.	t System. ter Software	New e etc.	6	4
	Sub	Total:							36	70
	Inter	rnal Ass	ess	ment Exam	ination &	Preparatio	n of Seme	ester	4	30
	Exar	nination								
Dreatical	Tota	l:							40	100
Skills to be List of Prac Assignment List of Bool	develo ctical: ts: Bas ks:	oped: Based on sed on the	theory	ory						
Name of Au	ıthor		Ti	tle of the Boo	bk	Edition/Is	SSN/ISBN	N P	ame of th Jublisher	e
Wayne Godd Stuart Melvil	ard an le	d	Res Intr	earch Method	ology:An	2 <sup>nd</sup> H	Edition		Juta A	cademic
Ranjit Kumai	[		Res Step Beg	earch Methodology: A 4 <sup>th</sup> Edition, SAGE Pul by Step Guide for			SAGE Publ L	lications Pvt. .td		
Asimov			Introduction to Design Pren			Prenti	Prentice Hall			
Stuart Melv Wayne God	ille an dard	d	Res intro eng	earch method oduction for s ineering stude	ology: an cience & ents	2nd	Edition		Juta A	cademic
Robert P. M S. Menell, N Lemley	lerges, ⁄Iark A	Peter A.	Inte Tec	llectual Prope hnological Ag	erty inNew ge			1	Aspen Law	& Business
Halbert			Res Proj	isting Intellec perty	tual				Taylor & I	Francis Ltd.
Niebel		-	Pro	duct Design					McGr	aw Hill
End Semest	ter Ex	aminatio	n So	cheme.	Maximum	Marks-70.		Time	e allotted-3	3hrs.
Group		Unit		Objective Q (MCQ only thecorrect at No of	Questions with nswer) Total	No of	Subjectiv	ve Qu er N	<b>lestions</b> Marks	Total
				question to be set	Marks	question to be set		p q	er uestion	Marks
Α		All		10	10	5	2		5	
В		All			10	5	3		5 -	70
С		All				5	3	4	5	70
□ Onl □ Spe give	y mult cific i en onto	tiple choic nstruction op of the q	to to to	pe question (1 the students t tion paper.	MCQ) with o to maintain t	ne correct ans he order in a	swer are to nswering o	be set bjecti	in the objective question	ective part. ons should be
Examinatio	n Sch	eme for e	nd	semester exa	mination:		_	6		_
Group		Chapter		larks of eacl	1 question	Question to	) beset	Que	estion to be	e answered
A						10		10		
С		ALL	1	5		5		3		
$\sim$	1	المقامقات	14	-		. ~		5		

Name of the Subject: Ei	e Course: M. Tech. in Artif Iglish for Research Paper V	icial Intelligence and Data Science Writing		
Course Coo	de: PGCS(AI & DS)106A	Semester: I		
Duration: 2	24 hours	Maximum Marks:100		
Teaching S	cheme	Examination Scheme		
Theory:02		End Semester Exam:70		
Tutorial: 0		End Semester Exam:70		
Practical: (	)	Attendance: 5		
Credit: 0		Continuous Assessment: 25		
Aim:				
Sl. No.				
1.	Understand that how to imp	prove your writing skills and level of readab	ility	
2.	Learn about what to write i	n each section		
3.	Understand the skills neede time submission	ed when writing a Title Ensure the good qua	lity of pap	per atvery first-
<b>Objective:</b>	•			
Sl. No.				
1.	Understand that how to imp	prove your writing skills and level of readab	ility	
2.	Learn about what to write i	n each section		
3.	Understand the skills need	ed when writing a Title Ensure the good qu	uality of p	paper at very first-
	time submission			
<b>D</b> D ·	•,			
Pre-Requis				
51. INU. 1	Basic Knowledge of Engli	ch		
1.	Dasie Knowledge of Eligh	511		
Contents			Hrs./we	ek
Chapter	Name of the Topic		Hours	Marks
	Planning and Preparation,	Word Order, Breaking up long sentences,		
01	Structuring Paragraphs and	Sentences, Being Concise and Removing	4	14
	Redundancy, Avoiding Am	biguity and Vagueness		
	Clarifying Who Did What,	Highlighting Your Findings, Hedging and		
02	Criticizing, Paraphrasing	and Plagiarism, Sections of a Paper,	4	14
	Abstracts. Introduction			
03	Review of the Literature, N	Methods, Results, Discussion, Conclusions,	4	10
05	The Final Check.		4	10
	key skills are needed whe	en writing a Title, key skills are needed		
04	when writing an Abstract	, key skills are needed when writing an	4	4
	Introduction, skills needed	when writing a Review of the Literature,		
	skills are needed when w	vriting the Methods, skills needed when		
05	writing the Results, skills	are needed when writing the Discussion,	4	14
	skills are needed when writ	ting the Conclusions		
06	useful phrases, how to ensu	ure paper 1s as good as it couldpossibly be	4	14
	Sub Total:		24	70
	Jub I Utal: Internal Aggagement Even	mination & Pronaration of Somester	24	/0
		THE ALL ALL ALL ALL ALL ALL ALL ALL ALL AL	4	30
	Examination		4	30

Assignments: Bas	sed on theor	y							
List of Books:									
Name of Author		Title of the <b>B</b>	Book	Edition/I	SSN/ISBN	Nan Pub	ne of th lisher	e	
1. Goldbort R		Writing for S	cience					Yale University Press	
2. Day R		How to Write andCamPublish a ScientificPressPaperImage: Cam			Cambridge University Press				
3. Highman N		Handbook of for the Mathe Sciences	Writing ematical			SIA	M. Higl	hman's book.	
4. Adrian Wallwor	k	English for W Research Pap	Vriting pers		Springer				
End Semester Ex	amination S	cheme.	Maximum	Marks-70	. Ti	me al	lotted-	3hrs.	
		Objective Q (MCQ only the correct at	<b>Juestions</b> with		Subjective	Ques	tions		
Group	Unit	No of question to be set	Total Marks	No of question to be set	To answer	Mar per ques	ks stion	Total Marks	
А	ALL	10	10						
В	ALL			5	3	5		70	
С	ALL			5	3	15			
<ul> <li>Only mult</li> <li>Specific in given onto</li> </ul>	tiple choice ty nstruction to op of the que	ype question (N the students to stion paper.	MCQ) with o maintain the	ne correct a order in an	inswer are to be aswering objecti	set in ve qu	the obj estions	ective part. should be	
Examination Sch	eme for end	semester exa	nination:						
Group		Chapter	Marks o	f each	Question to b	e	Quest	ion to be	
Α		ALL	1		<u>10</u>		10	licu	
B		ALL	5		5		3		
С		ALL	15		5		3		

Name of t Subject: 1	he Course: M. Tech. in A Disaster Management	rtificial Intelligence and Data Science		
Course C DS)106B	ode: PGCS(AI &	Semester: I		
Duration	24 hrs	Maximum Marks:100		
Teaching	Scheme	Examination Scheme		
Theory:0	2	End Semester Exam:70		
Tutorial	-	End Semester Exam:70		
Practical	0	Attendance: 5		
Credit · 0	•	Continuous Assessment: 25		
Ci cuiti o		Continuous Assessment. 25		
Aim				
SI No				
51. 110.	Learn to demonstrate a	critical understanding of key concepts in	disaster r	isk reduction and
1.	humanitarian response	entied understanding of key concepts in	disdster i	isk reduction and
	Critically understand the	strengths and weaknesses of disaster manage	ement ann	roaches planning
2	and programming in diffe	rent countries particularly their home countri	v or the co	ountries they work
4.	in	tent countries, particularly then nome country	y of the et	valuties they work
	m			
Objective	•			
Sl. No.	•			
1.	Critically evaluate disast	er risk reduction and humanitarian response	e policy a	and practice from
1	multiple perspectives.	in the reduction and humanitarian response	e ponej e	and practice from
2.	Develop an understandir	og of standards of humanitarian response	and pract	ical relevance in
	specific types of disasters	and conflict situations.	F	
	1 51			
Pre-Requ	isite:			
	Nil			
Contents			Hrs./we	ek
Chapter	Name of the Topic		Hours	Marks
	Introduction			
	Disaster: Definition, Fact	ors And Significance; Difference Between		
	Hazard And Disaster; Na	tural And Manmade Disasters: Difference,		
	Nature, Types And Mag	gnitude. Repercussions of Disasters And		
01	Hazards: Economic Dam	hage, Loss Of Human And Animal Life,	4	16
<b>VI</b>	Destruction Of Ecosy	stem. Natural Disasters: Earthquakes,		10
	Volcanisms, Cyclones, T	sunamis, Floods, Droughts And Famines,		
	Landslides And Avalanc	hes, Man-made disaster: Nuclear Reactor		
	Meltdown, Industrial Acc	Idents, Oil Slicks And Spills, Outbreaks Of		
	Disease And Epidemics,	war And Conflicts.		
	Disaster Prone Areas In In	ndia: Study Of Seismic Zones; Areas Prone		
02	To Floods And Droughts,	Landslides And Avalanches; Areas Prone	4	17
	To Cyclonic And Coast	al Hazards with Special Reference 10		
	Disaster Dremored as A	iseases And Epidemics		
	Of Phenomena Triggerin	a A Disaster Or Hazard: Evaluation Of		
04	Risk Application Of Ra	mote Sensing Data From Meteorological	1	15
<b>V1</b>	And Other Agencies Mac	lia Reports: Governmental And	+	15
		na reports. Oovernmental Allu	1	
	Community Preparedness	-		

05	Risk Assessment Disaster Risk: Concept And Elements, Disaster Risk Reduction, Global And National Disaster Risk Situation Techniques Of Risk Assessment, Global Co-Operation In Ris Assessment And Warning, People's Participation In Ris Assessment. Strategies for Survival Disaster Mitigation: Meaning, Concept And Strategies Of Disaster							ents, Disaster sk Situation. tion In Risk on In Risk	4		8	
06	Disas Mitig And N India	ter Mit ation, 1 Jon-Str	igatio Emerg uctura	n: Mean ging Tre al Mitiga	ing, nds tion,	Concept And In Mitigation Programs O	l Strategies n. Structur f Disaster	s Of Disaster al Mitigation Mitigation In	4		14	
	Sub T	<b>Fotal:</b>							24		70	
	Inter Exan	nal As nination	sessm n	ient Exa	amin	ation & Pre	eparation	of Semester	4		30	
	Total	:							28	6	100	
Assignmen	ts: Bas	ed on th	neory									
List of Boo	ke.											
Name of A	ks: uthor		Titl	o of the F	Rook		Edition/I	ISSN/ISBN	Nat	ne of th	0	
	utiioi		1 101		JUUN		Eution		Put	olisher		
1. R. I	Nishith,		Disa	ster Ma	anage	ement in			Nev	v Royal	book	
Singh AK,			Indi	a: Perspe	ectiv	es, issues			Cor	npany.		
2 0 1	•		and	strategies	<u>s</u>					· • • • •	11 C	
2. San Pardeen et s	ini,		Disa Evn	ister Mitti	gatic	n			Indi	a New	.ll OI Delhi	
(Eds.)	11.		Refl	ections	anu							
3. Goe	el S. L.		Disa	ster Adn	ninis	tration			Dee	p &Dee	р	
			and	Manager	nent	Text			Pub	lication	Pvt. Ltd.,	
			and	Case Stu	dies				Nev	v Delhi.		
<b>.</b>												
End Semes	ter Exa	aminati	ion Sc	cheme.		Maximum	Marks-70	).	l'ime a	llotted	3hrs.	
Group		Unit		Object	ive (	Duestions		Subjectiv	e Ques	tions		
<b>r</b>				(MCQ	only	with			<b>~</b>			
				thecorr	ect a	nswer)						
				No of		Total	No of	To answer	Mai	:ks	Total	
				question	n +	Marks	question		per	stion	Marks	
A		ALL.		10 00 80	n.	10			que	511011		
**						10						
В		ALL					5	3	5			
С		ALL					5	3	15		70	
	y multi	ple cho	oice ty	pe questi	ion (l	MCQ) with or	ne correct a	answer are to b	e set in	the obj	ective part.	
□ Spe give	en onto	structic p of the	on to t e ques	ne studer tion pape	its to er.	maintain the	order in ai	nswering objec	tive qu	estions	snould be	
Examinatio	on Sche	eme for	• end s	semester	exa	mination:						
Group			Cha	pter	Ma	arks of each o	question	Question to	be	Quest	ion to be	
								set		answe	ered	
A			ALI	[ <u> </u>	1			10		10		
B			AL	La r	5			5		3		
U			AL		15			3		5		

Name of t	he Course: M. Sanskrit for To	. Tech. in Arti echnical Knov	ficial Intelli vledge	gence and Data Science			
Course C	de PGCS(A)	& DS)106C	illuge				
Duration	24 hours		Semester:	T			
Teaching	Scheme		Maximum	- Marks·100			
Theory 0	) )		Fyaminati	on Scheme			
Tutorial	)		Examination Find Semes	ster Fyam·70			
Practical	<u>,</u> 0		End Semes	ster Exam:70			
Credit: 0	0		Attendance	o. 5			
Cituit. 0			Continuou	s Assassment · 25			
Aim			Continuou	5 ASSESSMENT. 25			
SI No							
1	Understandin	a basic Sanskr	it language				
2	Ancient Sans	krit literature a	hout science	& technology can be und	erstoor	1	
2.	Roing a logic	al longuago wi	ll halp to day	valon logic in students		1	
	Defing a logic	al language wi		velop logic ill studelits			
Objective	•						
SI No	•						
51. INU. 1	To got a sugal		. : :11	na Canalanit the acientific 1			له اسمیت
1.	To get a work	ting knowledg		us Sanskrit, the scientific i	anguaş	ge in the v	world
2.	Learning of S	anskrit to impi	rove brain fu	inctioning	<u> </u>		
3.	Learning of S	anskrit to deve	elop the log	c in mathematics, science	& othe	r subjects	8
4.	Enhancing the	e memory pow	ver				
5.	The engineer	ing scholars eq	uipped with	Sanskrit will be able to ex	plore h	nuge knov	vledge
Pre-Requ	isite:						
	Nil						
Contents						Hrs./we	ek
Contents Chapter	Name of the	Торіс				Hrs./we Hours	ek Marks
Contents Chapter	Name of the Alph	<b>Topic</b> abets in Sanski	rit,			Hrs./we Hours	ek Marks
Contents Chapter 01	Name of the Alph Past/	<b>Topic</b> abets in Sanski Present/Future	rit, Tense,			Hrs./we Hours	ek Marks 25
Contents Chapter 01	Name of the Alph Past/ Simp	<b>Topic</b> abets in Sanski Present/Future le Sentences	rit, Tense,			Hrs./we Hours	ek Marks 25
Contents Chapter 01	Name of the Alph Past/ Simp Orde	<b>Topic</b> abets in Sanski Present/Future le Sentences r	rit, Tense,			Hrs./we Hours 8	ek Marks 25
Contents Chapter 01	Name of the Alph Past/ Simp Order Introd	<b>Topic</b> abets in Sanski Present/Future le Sentences r duction of root	rit, Tense,			Hrs./we Hours 8	ek Marks 25
Contents Chapter 01 02	Name of the Alph Past/ Simp Order Introd Tech	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati	rit, Tense, s on about Sau	nskrit Literature		Hrs./we Hours 8 8	ek Marks 25 25
Contents Chapter 01 02	Name of the Alph Past/ Simp Orde Introd Tech	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati	rit, Tense, s on about San	nskrit Literature		Hrs./we Hours 8 8	ek Marks 25 25
Contents Chapter 01 02 03	Name of the Alph Past/ Simp Order Introd Tech Tech	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts	rit, Tense, s on about San s of Engin	nskrit Literature eering-Electrical, Mechan	nical,	Hrs./we Hours 8 8 8	ek <u>Marks</u> 25 25 20
Contents Chapter 01 02 03	Name of the Alph Past/ Simp Order Introd Tech Arch	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe	rit, Tense, s on about San s of Engin ematics	nskrit Literature eering-Electrical, Mechar	nical,	Hrs./we Hours 8 8 8	ek Marks 25 25 25 20
Contents Chapter 01 02 03	Name of the Alph Past/ Simp Order Introd Tech Arch	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe	rit, Tense, s on about San s of Enginematics	nskrit Literature eering-Electrical, Mechan	nical,	Hrs./we Hours 8 8 8 8	ek Marks 25 25 20 20
Contents Chapter 01 02 03	Name of the Alph Past/ Simp Order Introd Tech Arch Sub Total:	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe	rit, Tense, s on about San s of Engine ematics	nskrit Literature eering-Electrical, Mechan	nical,	Hrs./we Hours 8 8 8 8 8 24	ek Marks 25 25 20 70
Contents Chapter 01 02 03	Name of the Alph Past/ Simp Orde Introd Tech Arch Sub Total: Internal Ass	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe	rit, Tense, s on about San s of Enginematics	nskrit Literature eering-Electrical, Mechan & Preparation of Sem	nical, ester	Hrs./we Hours 8 8 8 8 8 24 4	ek Marks 25 25 20 70 30
Contents Chapter 01 02 03	Name of the Alph Past/ Simp Order Introd Tech Arch Sub Total: Internal Ass Examination	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe sessment Exa	rit, Tense, s on about San s of Engine ematics	nskrit Literature eering-Electrical, Mechan & Preparation of Sem	nical, ester	Hrs./we Hours 8 8 8 8 8 24 4 28	ek Marks 25 25 20 70 30
Contents Chapter 01 02 03 	Name of the <ul> <li>Alph</li> <li>Past/</li> <li>Simp</li> <li>Orde</li> <li>Introd</li> <li>Tech</li> <li>Tech</li> <li>Arch</li> </ul> Sub Total: Internal Ass Examination Total:	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe sessment Exa	rit, Tense, s on about San s of Enginematics amination	nskrit Literature eering-Electrical, Mechan & Preparation of Sem	nical, ester	Hrs./we Hours 8 8 8 8 8 24 4 28	ek Marks 25 25 20 70 30 100
Contents Chapter 01 02 03 Assignme	Name of the <ul> <li>Alph.</li> <li>Past/.</li> <li>Simp</li> <li>Order</li> <li>Introder</li> <li>Tech</li> <li>Tech</li> <li>Arch</li> </ul> Sub Total: Internal Assistantion Total: nts: Based on the set of	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe sessment Exa	rit, Tense, s on about San s of Engine ematics	nskrit Literature eering-Electrical, Mechan & Preparation of Sem	nical, ester	Hrs./we Hours 8 8 8 8 24 4 28	ek Marks 25 25 20 70 30 100
Contents Chapter 01 02 03 Assignme List of Bo	Name of the Alph Past/ Name of the Alph Past/ Simp Order Introd Tech Tech Sub Total: Internal Ass Examination Total: nts: Based on tooks:	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe sessment Exa	rit, Tense, s on about San s of Engin ematics	nskrit Literature eering-Electrical, Mechan & Preparation of Sem	nical, ester	Hrs./we Hours 8 8 8 8 24 4 28	ek         Marks           25         25           20         20           70         30           100         100
Contents Chapter 01 02 03 	Name of the <ul> <li>Alph</li> <li>Past/</li> <li>Simp</li> <li>Orde</li> <li>Introd</li> <li>Tech</li> <li>Tech</li> <li>Arch</li> </ul> Sub Total: Internal Ass Examination Total: nts: Based on the second sec	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe sessment Exa theory Title of the B	rit, Tense, s on about San s of Enginematics amination a	nskrit Literature eering-Electrical, Mechan & Preparation of Sem	nical, ester	Hrs./we           Hours           8           8           8           24           4           28	ek Marks 25 25 20 70 30 100 Publisher
Contents Chapter 01 02 03 03 Assignme List of Bo Name of A	Name of the <ul> <li>Alph.</li> <li>Past/.</li> <li>Simp</li> <li>Order</li> <li>Introder</li> <li>Tech</li> <li>Tech</li> <li>Arch</li> </ul> Sub Total: Internal Assistantion Total: nts: Based on the second s	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe sessment Exa theory Title of the B	rit, Tense, s on about San s of Enginematics amination of cook	nskrit Literature eering-Electrical, Mechan & Preparation of Sem Edition/ISSN/ISBN	nical, ester	Hrs./we Hours 8 8 8 8 24 4 28 ne of the rti Public	ek Marks 25 25 20 70 30 100 Publisher ation New Delhi
Contents Chapter 01 02 03 03 Assignme List of Bo Name of A 1. Di Samskrita	Name of the <ul> <li>Alph.</li> <li>Past/.</li> <li>Simp</li> <li>Order</li> <li>Introdetion</li> <li>Tech.</li> <li>Tech.</li> <li>Arch</li> </ul> Sub Total: Internal Asset on the second	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe sessment Exa theory Title of the B Abhyaspustal	rit, Tense, s on about San s of Engine ematics amination of Gook cam	nskrit Literature eering-Electrical, Mechan & Preparation of Sem	nical, ester	Hrs./we Hours 8 8 8 8 24 4 28 ne of the rti Public.	ek           Marks           25           25           20           70           30           100   Publisher ation, New Delhi
Contents Chapter 01 02 03 03 Assignme List of Bo Name of A 1. Dr Samskrita Sanskrita	Name of the <ul> <li>Alph.</li> <li>Past/.</li> <li>Simp</li> <li>Orde.</li> <li>Introd.</li> <li>Tech.</li> <li>Tech.</li> <li>Arch</li> </ul> Sub Total: Internal Ass Examination Total: nts: Based on the second seco	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe sessment Exa theory Title of the B Abhyaspustal	rit, Tense, s on about San s of Enginematics amination a sook	nskrit Literature eering-Electrical, Mechar & Preparation of Sem Edition/ISSN/ISBN	nical, ester Bha	Hrs./we           Hours           8           8           8           24           4           28           ne of the           rti Public.	ek           Marks           25           25           20           70           30           100
Contents Chapter 01 02 03 03 Assignme List of Bo Name of A 1. Di Samskrita Sansthana	Name of the <ul> <li>Alph.</li> <li>Past/.</li> <li>Simp</li> <li>Orde.</li> <li>Introde.</li> <li>Tech.</li> <li>Tech.</li> </ul> Sub Total: Internal Assistantion Total: nts: Based on the second	Topic abets in Sanski Present/Future le Sentences r duction of root nical informati nical concepts itecture, Mathe sessment Exa theory Title of the B Abhyaspustal	rit, Tense, s on about San s of Enginematics amination a sook cam	nskrit Literature eering-Electrical, Mechan & Preparation of Sem Edition/ISSN/ISBN	nical, ester	Hrs./we Hours 8 8 8 8 24 4 28 ne of the rti Public.	ek           Marks           25           25           20           70           30           100

2. Prat	hama	Teach Yourself			Vempati Kutumbshastr			ıtumbshastri,
Deeksha		Sanskrit				Ras	htriya S	anskrit
3. Sure	esh Soni	India's Glorid	ous			Oce		ts (P) Ltd., New
		Scientific Tra	dition			Del		
End Semest	ter Examina	tion Scheme.	Max	imum Mai	rks-70.	T	Time allo	otted-3hrs.
Group	Unit	<b>Objective</b> Q	uestions		Subjectiv	e Ques	stions	
		(MCQ only	with					
		thecorrect an	nswer)		ľ			
		No of	Total	No of	To answe	: Ma	rks	Total Marks
		question	Marks	questiont	0	per		
		to be set		be set		que	stion	
А	ALL	10	10					
р	A T T			~	2	_		70
D	ALL			5	3	С		70
С	ALL			5	3	15		
□ Onl	y multiple ch	oice type ques	tion (MCQ)	with one co	prrect answer a	re to b	e set in t	he objective part.
□ Spe	cific instruct	ion to the stud	dents to mair	ntain the or	der in answer	ing ob	jective c	questions should be
give	en ontop of t	ne question pap	per.					
Examinatio	n Scheme fo	or end semeste	er examination	on:				
Group		Chapter	Marks of	f each	Question to	be set	Quest	ion to be answered
			question		10		10	
A		ALL	1		10		10	
В		ALL	5		5		3	
С		ALL	15		5		3	

Name of t Subject: V	he Course: M. Tech. in Artific Value Education	cial Intelligence and Data Science		
Course C	ode: PGCS (AL & DS) 106D	Semester: I		
Duration:	36 hours	Maximum Marks:100		
Teaching	Scheme	Examination Scheme		
Theory: 2		End Semester Exam:70		
Tutorial:(	)	Attendance: 5		
Practical:	0	Continuous Assessment: 25		
Credit:0				
Aim:				
Sl. No.				
1.	Knowledge of self-developme	ent		
2.	Learn the importance of Hum	an values		
3.	Developing the overall person	nality		
Objective SL N-	•			
51. INO. 1	Understand value of education	n and salf davidonment		
1.	Understand value of educatio	to		
2.	Let the should know about the	is e importance of character		
5.	Let the should know about the	e importance of character		
Pre-Reau	isite:			
	Nil			
Contents			Hrs./we	ek
Chapter	Name of the Topic		Hours	Marks
Chapter	Name of the Topic• Values and self-de	velopment-Social values and individual	Hours	Marks
Chapter	Name of the Topic           •         Values and self-de attitudes. Work ethics	velopment–Social values and individual s, Indian vision of humanism	Hours	Marks
Chapter 01	Name of the Topic         • Values and self-de attitudes. Work ethics         • Moral and non- moral	velopment–Social values and individual s, Indian vision of humanism I valuation. Standards and principles	Hours 6	Marks 10
Chapter 01	Name of the Topic•Values and self-de attitudes. Work ethics•Moral and non- mora Value judgments	velopment–Social values and individual s, Indian vision of humanism I valuation. Standards and principles	Hours 6	Marks 10
Chapter 01	Name of the Topic• Values and self-de attitudes. Work ethics• Moral and non- mora • Value judgments• Importance of cultivation	velopment–Social values and individual s, Indian vision of humanism I valuation. Standards and principles tion of values	Hours 6	Marks 10
Chapter 01	Name of the Topic         •       Values and self-de attitudes. Work ethics         •       Moral and non- mora         •       Value judgments         •       Importance of cultivation         •       Sense of duty.	velopment–Social values and individual s, Indian vision of humanism I valuation. Standards and principles ttion of values Devotion, Self-reliance, Confidence,	Hours 6	Marks 10
Chapter 01 02	Name of the Topic•Values and self-de attitudes. Work ethics•Moral and non-mora•Value judgments•Importance of cultiva•Sense of duty. Concentration. Truth	velopment–Social values and individual s, Indian vision of humanism I valuation. Standards and principles ation of values Devotion, Self-reliance, Confidence, fulness, Cleanliness	<b>Hours</b> 6 6	<b>Marks</b> 10 20
Chapter 01 02	Name of the Topic• Values and self-de attitudes. Work ethics• Moral and non- mora• Value judgments• Importance of cultiva• Sense of duty. Concentration. Truth• Honesty, Humanity.	velopment–Social values and individual s, Indian vision of humanism I valuation. Standards and principles ttion of values Devotion, Self-reliance, Confidence, fulness, Cleanliness Power of faith, National Unity	<b>Hours</b> 6 6	Marks           10           20
Chapter 01 02	Name of the Topic•Values and self-de attitudes. Work ethics•Moral and non- mora Value judgments•Importance of cultiva Sense of duty. Concentration. Truth ••Honesty, Humanity. I Patriotism. Love for the	velopment–Social values and individual s, Indian vision of humanism I valuation. Standards and principles ation of values Devotion, Self-reliance, Confidence, fulness, Cleanliness Power of faith, National Unity nature, Discipline	<b>Hours</b> 6	<b>Marks</b> 10 20
Chapter 01 02	Name of the Topic• Values and self-de attitudes. Work ethics• Moral and non-mora • Value judgments• Importance of cultiva • Sense of duty. Concentration. Truth • Honesty, Humanity. I • Patriotism. Love for a • Personality and Beh	velopment–Social values and individual s, Indian vision of humanism I valuation. Standards and principles ution of values Devotion, Self-reliance, Confidence, fulness, Cleanliness Power of faith, National Unity nature, Discipline avior Development - Soul and Scientific	<b>Hours</b> 6 6	Marks 10 20
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End Seme	ster Ex	aminati	on Scheme.	Max	imum N	Mark	s-70.	T	ime allo	otted-3hrs.	
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