

SEMESTER-I										
S.No	CourseCode	CourseTitle	Category	Periods			Credits	Max.Marks		
				L	T	P		CPM	ESM	Total
Theory										
1	A23TAT101C / A23FRT101C	Tamil-I / French - I *	MIL	3	0	0	3	25	75	100
2	A23GET101C	General English-I	ENG	3	0	0	3	25	75	100
3	A23DAT101D	C Programming	DSC	4	0	0	4	25	75	100
4	A23DAT102D	Data Structure and Algorithms Using C	DSC	4	0	0	4	25	75	100
5	A23DAD101D	Applied Probability and Statistics	IDC	3	1	0	4	25	75	100
Practical										
6	A23DAL101D	C Programming Lab	DSC	0	0	4	2	50	50	100
7	A23DAL102D	Data Structure and Algorithms Using C Lab	DSC	0	0	4	2	50	50	100
Skill Enhancement Course										
8	A23ENSA02C	Soft Skill	SEC	0	0	4	2	100	0	100
Ability Enhancement Course										
9	A23AETA01C	Public Administration	AEC	2	0	0	1	100	0	100
Employment Enhancement Course										
10	A23DAC101D	Microsoft Excel Analytics	EEC	0	0	4	0	100	0	100
							25	525	475	1000

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SEMESTER-II										
S.No	Course Code	CourseTitle	Category	Periods			Credits	Max.Marks		
				L	T	P		CPM	ESM	Total
Theory										
1	A23TAT202C / A23FRT202C	TAMIL-II / FRENCH II	MIL	3	0	0	3	25	75	100
2	A23GET202C	GENERAL ENGLISH- II	ENG	3	0	0	3	25	75	100
3	A23DAT203D	C++ Programming	DSC	4	0	0	4	25	75	100
4	A23DAT204D	Introduction to Big Data	DSC	4	0	0	4	25	75	100
5	A23DAD202D	Statistics for Data Science	IDC	3	1	0	4	25	75	100
Practical										
6	A23DAL203D	C++ Programming Lab	DSC	0	0	4	2	50	50	100
7	A23DAL204D	Big Data Analytics Lab	DSC	0	0	4	2	50	50	100
Skill Enhancement Course										
8	A23ENSA01C	COMMUNICATION SKILL LAB	SEC	0	0	4	2	100	0	100
Ability Enhancement Course										
9	A23AETA02C	ENVIRONMENTAL STUDIES	AEC	2	0	0	1	100	0	100
Extension Activities										
10	A23AETA02C	NATIONAL SERVICE SCHEME	EA	0	0	4	0	100	0	100
Employment Enhancement Course										
11	A23DAC202D	Data Analysis using Spark Tool	EEC	0	0	4	0	100	0	100
							25	625	475	1100

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SEMESTER-III										
S.No	Course Code	CourseTitle	Category	Periods			Credits	Max.Marks		
				L	T	P		CPM	ESM	Total
Theory										
1	A23DAT305D	Database Management System	DSC	4	0	0	4	25	75	100
2	A23DAT306D	Python for Data Science	DSC	4	0	0	4	25	75	100
3	A23CPEXXXX	DISCIPLINE SPECIFIC ELECTIVE- I	DSE	3	0	0	3	25	75	100
4	A23DAD303D	Linear Algebra	IDC	3	1	0	4	25	75	100
5	A23XXO30XX	OPEN ELECTIVE-I	OE	2	0	0	2	25	75	100
Practical										
6	A23DAL305D	RDBMS Lab	DSC	0	0	4	2	50	50	100
7	A23DAL306D	Python for Data Science Lab	DSC	0	0	4	2	50	50	100
Skill Enhancement Course										
8	A23MAS01C	QUANTITATIVE APTITUDE AND LOGICAL REASONNING	SEC	0	0	4	2	100	0	100
Ability Enhancement Course										
9	A23AETA03C	INDIAN CONSTUTION	AEC	2	0	0	1	100	0	100
Employment Enhancement Course										
10	A23DAC303D	Social Network Analysis	EEC	0	0	4	0	100	0	100
							24	525	475	1000

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SEMESTER-IV										
S.No	Course Code	CourseTitle	Category	Periods			Credits	Max.Marks		
				L	T	P		CPM	ESM	Total
Theory										
1	A23DAT407D	No SQL DATABASES	DSC	4	0	0	4	25	75	100
2	A23CPT408D	INTRODUCTION TO ARTIFICIAL INTELLIGENCE	DSC	4	0	0	4	25	75	100
3	A23CPEXXX X	DISCIPLINE SPECIFIC ELECTIVE -II	IDC	3	1	0	4	25	75	100
4	A23DAD404D	HEALTH ANALYTICS	DSE	3	0	0	3	25	75	100
5	A23XXO40XX	OPEN ELECTIVE-II	OE	2	0	0	2	25	75	100
Practical										
6	A23DAL407D	No SQL DATABASES - LAB	DSC	0	0	4	2	50	50	100
7	A23DAL408D	ARTIFICIAL INTELLIGENCE (PROLOG) LAB	DSC	0	0	4	2	50	50	100
Skill Enhancement Course										
8	A23DAS404	AWS Web Services	SEC	0	0	4	2	100	0	100
Ability Enhancement Course										
9	A23AETA04C	VALUE EDUCATION	AEC	2	0	0	1	100	0	100
Employment Enhancement Course										
10	A23DAC404	SAS TOOL	EEC	0	0	4	0	100	0	100
In-Plant Training										
11	A23CPN401D	INTERNSHIP	DSC	0	0	2	3	100	0	100
							27	625	475	1100

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SEMESTER-V										
S.No	Course Code	CourseTitle	Category	Periods			Credits	Max.Marks		
				L	T	P		CPM	ESM	Total
Theory										
1	A23DAT509D	INTRODUCTION TO MACHINE LEARNING	DSC	4	1	0	4	25	75	100
2	A23DAT510D	IoT CLOUD AND DATA ANALYTICS	DSC	4	1	0	4	25	75	100
3	A23DAT511D	SOFTWARE ENGINEERING MANAGEMENT	DSC	4	0	0	4	25	75	100
4	A23CPEXXX	DISCIPLINE SPECIFIC ELECTIVE -III	DSE	3	0	0	3	25	75	100
Practical										
5	A23DAL509D	MACHINE LEARNING LAB	DSC	0	0	4	2	50	50	100
6	A23DAP501D	MINI PROJECT	DSC	0	0	4	2	50	50	100
Skill Enhancement Course										
7	A23DAS505	R PROGRAMMING LAB	SEC	0	0	4	2	100	0	100
Online CertificationCourse										
8	A23CPM501D	NPTEL\ SWAYAM	OCC	0	0	4	0	100	0	100
							21	400	400	800

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SEMESTER-VI										
S.No	Course Code	CourseTitle	Category	Periods			Credits	Max.Marks		
				L	T	P		CPM	ESM	Total
Theory										
1	A23CDAT612D	DEEP LEARNING	DSC	4	0	0	4	25	75	100
2	A23DAT613D	DATA HANDLING AND VISUALIZATION	DSC	4	0	0	4	25	75	100
3	A23DAT614D	TEXT AND IMAGE ANALYTICS	DSC	3	0	0	4	25	75	100
4	A23CPEXXXX	DISCIPLINE SPECIFIC ELECTIVE -IV	DSE	3	0	0	3	25	75	100
Practical										
5	A23DAP602C	PROJECT WORK & VIVA-VOCE	DSC	0	0	4	5	40	60	100
Skill Enhancement Course										
6	A23DAS606D	RESEARCH METHODOLOGY	SEC	0	0	4	2	100	0	100
							22	265	335	600

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Department	Tamil		Programme: B.Sc DATA SCIENCE AND ANALYTICS						
Semester	First		Course Category Code: MIL			*End Semester Exam Type: TE			
CourseCode	A23TAT101C		Periods/Week			Credit	Maximum Marks		
			L	T	P	C	CAM	ESE	TM
Course Name	TAMIL – I		3	-	-	3	25	75	100
(Common to B.Sc., BBA., B.COM., BCA., B.COM CS.,)									
Prerequisite	+2 tFg;gpy jkpio xU ghLkhf nfhz;bUf;f Ntz;Lk;								
Course Objectives	<ul style="list-style-type: none"> • nrt;tpyf;fpa jd;ik nfhz;L jkpo;nkhopapd rpwg;gpid vLjJiug;gjhf ,g;ghLj;jLLk; mikf;fg;gL;Ls;sJ. • ,uzLhapuk; Mz;Lfhyj jkpopd; njhd;ikiaAk tuyhw;iwAk; mjd; tpOkpaq;fisAk gz;ghL;iLAK vLj;Jiug;gjhf ,g;ghLj;jLLk; mikf;fg;gL;Ls;sJ. • jkpo ,yf;fpak; Cs;sLf;fj;jpYk> tbtj;jpYk; ngw;wkhw;wq;fs;> mjd; rpe;jidfs;> mīLahsq;fs; Mfpatw;iwf; fhye;NjhWk; vOjg;gL ,f;fpaq;fspd; topahff; \$WTjw;F ,g;ghLj;jLLk; mikf;fg;gL;Ls;sJ. • tho;tpay rpe;jidfs;> xOf;ftpay; NfhL;ghLfs;> rkj;Jtk> #oypay; vdg; gy \$Wfis khztHfSf;F vLj;Jiuf;Fk; tpjj;jpy; ,g;ghLj;jLLk; Cuthf;fg;gL;Ls;sJ. • rpe;jid Mw;wiyg; ngUf;Ftjw;Fj jha;nkhopapd gq;fspg;gpid czHj;j ,g;ghLj;jLLk; mikf;fg;gL;Ls;sJ. 								
	Course Outcome	On completion of the course, the students will be able to							BT Mapping (Highest Level)
		C01	• ,yf;fpaq;fs; czHj;Jk; tho;tpay; newpkiwfigs; NgzpeLj;jy;						K3
		C02	• ekJ vz;zj;ij ntspg;gLj;Jk; fUtpahfj jha;nkhopiag; gad;gLj;Jjy;						K3
		C03	• jfty njLHGf;Fj jha;nkhopapd Kf;fpaj;Jtj;ij czHjy;.						K3
C04		• jha;nkhopapd rpwg;ig mwpjy;.						K3	
C05	• ,yf;fpa ,d;gq;fis EfUk; jpwd;fis tsHj;jy;						K3		
UNIT-I	,f;fhy ,yf;fpak- kuGf;ftpijfs- GJf;ftpijfs- rpWfij		Periods: 09						
	<ul style="list-style-type: none"> • kuGf;ftpijfs - ghujpahH-nts;spg; gdpkiyapd kPJyhTNthk... (13 ghLy;fs;)- ghuj;jhrd;-GuL;rp;ft; (Ngud;Gf nfhz;LtNu...Kjy - ftpQDf;Fk; fhjypf;Fk kPL;rpje;jhH tiu) jq;fg;gh - gdp;ghiw Edpfs; - tho;f;if Xtpak; GJf;ftpijfs-mg;Jy uFkhd - tLY}Uk; thHjHTk; - Afp - CapHg;G (,aw;ifapd vYk;G Kwpg;G) - rpWfij -MH.#Lhkzp - rhk;gYf;Fs;. 							C01	
UNIT-II	ehLfk -ciueiL- ehty;		Periods: 09						
	<ul style="list-style-type: none"> • ehLfk - gpugQ;rd; - KL;iL - ciueiL - ,uh.Ntq;fLhrygj; - me;jf; fhyj;jpy fhg;g ,y;iy -ehty; - ,uh.KUFnts - kpsPHfy; 							C02	
UNIT-III	gf;j ,yf;fpak-irtk-itzt-fpwpj;Jtk;- ,] ;yhk		Periods: 09						
	<ul style="list-style-type: none"> • gf;j ,yf;fpak; -irtk;-jpUQhdrk;ge;Jh - Kjy; jpUKiw - NjhLiLanrtpad...ghLy; kL;Lk; - jpUehTf;furH ehd;fhk; jpUKiw - \$w;whapdthW...ghLy kL;Lk;- Re;juH - Vohk; jpUKiw - gpj;jhgpiw#B...ghLy kL;Lk; khzpf;fthrfH - jpUthrfk; - Gy;yha; GOtha;...ghLy kL;Lk; - jpU%yH - jpUke;jpuk - MHf;Fk ,Lkpd...ghLy; kL;Lk; - fhīuf;fhyk;ikahH-jpUt;uL;il kzpkhiy - md;ghy; mīLtnjt;thW...ghLy; kL;Lk;. itztk ngha;ifaho;thH - itak jfspaha;...ghLy; kL;Lk; -G+jj;jho;thH - md;Ng jfspaha...ghLy; kL;Lk; - Ngaho;thH jpUf;fz;Nld nghd;Nkd;...ghLy; kL;Lk - ek;kho;thH - jUtha;nkhop - csd vdpd;...ghLy; kL;Lk; - nghpaho;thH nghpaho;thH jpUnkhop - thf;Fj J}a;ik...ghLy; kL;Lk; -Mz;Lhs - ehrrpahH jpUnkhop- vd;G CUfp ,dNty;...ghLy; kL;Lk - fpwpj;Jtk - ,uL;rz;a kNdhfuk - Mtpf;FWnte;JaH...Kjy; ciday;yJ gw;WNjh tiu - ,];yhk; - Fzq;Fb k];jhd rhfpG- uFkhd fz;zp -mīLj;j kdf;NfhL;iL...Kjy vd;fz; tiu 							C03	
UNIT-IV	rpw;wpyf;fpak; - Kj;njhs;shapuk - cyh- fyk;gfk- gs;S- , iLf;fhyg GytHfs		Periods: 09						
	<ul style="list-style-type: none"> • rpw;wpyf;fpak; - Kj;njhs;shapuk - 1.NtuWifgk;gpr RiuaHa...2.khiy tpiygHthH... 3.vd;id ciuay ...vdj njhLq;Fk ghLy;fs; kL;Lk; - cyh - Fnyhj;Jq;fNrhod; cyh - jhis mutpe;jr rhjp...Kjy epyntd;whs; tiu - fyk;gfk; -jpUtuq;ff;fyk;gfk; - CUkhwp; gygpwg;Gk;...Kjy MBH thry; tiu - gs;S - Kf;\$LW;gs;S - ehL;Ltsk; - fiwGL;Ls;sJ...vdj;njhLq;Fk; ghLy; kLLk; -J}J-mofH fps;istpL J}J - ,d;nrhy;iy....Kjy CgNjrkhf ciug;gha; tiu • , iLf;fhyg GytHfs - ,uhkypq;f mbfs; - k`hNjtkhiy-gbj;Njd;...Kjy ngha; cyfpay; tiu - tPkhKdpH jpUf;fhtY}Hf; fyk;gfk; - jio-Nghjt;po;...vdj;njhLq;Fk; ghLy; kL;Lk; - K.K`k;kJ`h - /nfsJK`pa;apj;jPd 							C04	

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gps;isj jkpo; - tapWGILf;f cz;fpd;WH...ghLy; kL;Lk;			
UNIT-V	nkhopg;gapw;rp-,yf;fpa tuyhW	Periods: 09	
<ul style="list-style-type: none"> nkhopg;gapw;rp - 1.typkpFk; ,Lq;fs; >typkpfh ,Lq;fs;- 2.mfuthpirg;gLj;Jjy;-3.NeHfhzy - ,yf;fpa tuyhW - ,f;fhy ,yf;fpak;> gf;jj ,yf;fpak;> rpw;wpf;fpak Fwpj;j ghLg;gFj;ia xL;baJ. 			CO5
Lecture Periods: 45	Tutorial Periods:-	PracticalPeriods:-	TotalPeriods:45
Text Books			
<ul style="list-style-type: none"> ghujpahH - ghujpahH ftpijfs;> Kindle Edition> Published June 2, 2020. rptFkhH. v]> - nfhq;FNjH tho;f;if> ghLy; njhFg;G E3y - njhFj; -1 AidnLL iuLLH];> nrd;id -86. Kjw;gjpg;G 2003. #Lhkzp.MH. - jdpikj jspH NjHe;njLj;j rpWfijfs> fhyr;RtL gjpg;gfk;> Kjy; gjpg;G: nrg;Lk;gh 2013. gpugQ;rd; - [Ptej; (ehLf;fs;) - ftpjh gg;spNfd;> & khrpyhkzp njU> ghz;bg[hH; j;efH nrd;id -600 017 KUfNts;. ,uh.> - kpspHfy;> lk;nghopy; gjpg;gfk;> jpUg;G+H ,uzLhk gjpg;G 2014. 			
Reference Books			
<ul style="list-style-type: none"> ty;ypf;fz;zd;> GJf;ftpjapd; Njhw;wKk tsh;r;rpAk =nrz;gfh gjpg;gfk;> [dthp> 2020. rpw;gpgHyRg;gpkzpak kw;Wk; eygj;kehgd; (g.Mr.) - Gjpa jkpo; ,yf;fpa tuyhW njhFj;-1>2>3> rhfpj;jpa mfhnjkp GJnLy;yp 2013. ghf;fpaNkhp tifik Nehf;fpy; jkpo; ,yf;fpa tuyhW (nrk;ik kw;Wk; t;phTg gjpg;G) ghhpepiyak; nrd;id> Mde;jd;> KidtH.R.> - jkpo; ,yf;fpa tuyhW fz;kz gjpg;gfk;> jpUrr;2. ,Ugj;j; %d;whk gjpg;G- 2015. gue;jhkdhH m.fp.> - ey;y jkpo; vOj Ntz;Lkh> ghhp epiyak;> nrd;id> 1998. 			
Web References			
<ol style="list-style-type: none"> http://www.tamilvu.org - 2.http://www.tamilweb.com - 3.http://www.tamilkodal.com - 4. www.store.tamillexican.com www.kala.tamilforu.blogspot.com 6.www.noolagam.com 			

* TE – Theory Exam, LE – Lab Exam

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	3	3	3	3	3	3	3	3
2	3	3	3	3	3	3	3	3
3	3	2	3	3	2	3	3	3
4	2	3	1	3	2	2	2	3
5	3	3	3	3	3	3	3	3

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10	5	5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

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Department	French	Programme: B.Sc DATA SCIENCE AND ANALYTICS						
Semester	FIRST	Course Category Code: MIL			*End Semester Exam Type TE			
Course Code	A23FRT101C	Periods/Week			Credit	Maximum Marks		
Course Name	FRENCH I	L	T	P	C	CAM	ESE	TM
	(Common to B.A., B.SC., and BCA Branches)	3	0	0	3	25	75	100
Prerequisite	Basic knowledge of French language							
Course Objective	To introduce the basics of French language to the students							
	To enable the students to read, understand and write simple sentences							
	To help them to grasp the fundamentals of French grammar							
	To make the students to formulate correct phrases							
	To introduce them French and Francophone countries and their cultures							
Course Outcomes	On completion of the course, the students will be able to							BT Mapping (Highest Level)
	CO1	have a general understanding of the language						K3
	CO2	analyze and interpret simple phrases written in French						K3
	CO3	have the basics of French grammar						K3
	CO4	communicate and ask basic questions in French language						K3
	CO5	appreciate the diversity and multiplicity of French and Francophone world						K3
UNIT-I	S'introduire				Periods:09			
	1. Le francais, les Francais, la France							
	2. Je m'appelle Elise, et vous ?							
	3. Saluer, se presenter, remercier							
	4. Vous dansez ? D'accord							
	5. Interroger quelqu'un et donner des informations							
UNIT-II	Demander des questions sur quelqu'un				Periods:09			
	1. Monica, Yokiko et compagnie							
	2. Dire ce qu'on l'aime							
	3. Les voisins de Sophie							
	4. Demander des informations sur quelqu'un							
UNIT-III	Expliquer quelque chose				Periods:09			
	1. Tu vas au Luxembourg ?							
	2. Dire où on va, dire d'où on vient							
	3. Nous venons pour l'inscription							
	4. A vélo, en train, en avion...							
	5. Expliquer un itinéraire, proposer quelque chose							
UNIT-IV	Poser des questions et commander				Periods:09			
	1. Pardon monsieur, le BHV s'il vous plait							
	2. Au marché							
	3. Acheter quelque chose, demander le prix							
	4. On déjeune ici ?							
	5. Aller au restaurant, comprendre un menu							
UNIT-V	Inviter et proposer quelque chose				Periods:09			
	1. On va chez ma copine ?							
	2. Proposer quelque chose							
	3. Demander et donner des informations sur quelqu'un							
	4. Chez Susana							
	5. Etre invité chez quelqu'un							
Lecture Periods: 45		Tutorial Periods:			Practical Periods:-		Total Periods:45	

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Text Books

2. Sylvie Poisson Quinton and Michèle Maheo, *Festival 1 Méthode de Français*, CLE editions, 2009
3. Nathalie Hirschsprung and Tony Tricot, *Cosmopolite 1*, Hachette editions, 2017
4. Caroline Veltcheff and Stanley Hilton, *Preparation du Delf A1*, Hachette editions, 2011

Reference Books

1. Régine Mérieux and Yves Loiseau, *Latitudes 1*, Didier editions, 2017
2. Annie Berthet and Emmanuelle Daili, *Alter Ego + A1*, Hachette editions, 2012
3. Bruno Giradeau, *Réussir le Delf A1*, Didier editions, 2019
4. Richard Lescure, *Delf A1 150 Activités*, Langers and CLE, 2005
5. Manisha Verma, *La grammaire élémentaire française*, Notion Press, 2010

Web References

2. <https://www.tv5monde.com>
3. <https://www.rfi.fr>
4. <https://www.lemonde.fr>
5. <https://www.frenchpodcasts.com>
6. <https://www.coursera.org>

* TE – Theory Exam, LE – Lab Exam

COs/POs/PSOs Mapping

COs	Program Outcomes (PO)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	3	3	3	3	3	3	3	3
2	3	3	3	3	2	3	3	3
3	3	3	3	3	3	3	2	3
4	2	3	2	2	3	3	3	3
5	3	3	3	3	3	3	3	3

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10	5	5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

Department	ENGLISH			Programme: B.Sc DATA SCIENCE AND ANALYTICS						
Semester	FIRST			Course Category	End Semester Exam Type:					
				Code: ENG	TE					
Course Code	A23GET101C			Periods / Week			Credit	Maximum Marks		
				L	T	P	C	CAM	ESE	TM
Course Name	GENERAL ENGLISH - I			3	0	0	3	25	75	100
(Common to B.A., B.SC., AND BCA Branches)										
Prerequisite	Basic part-two language and knowledge gained from Grammar and Vocabulary									
Course Objectives	To recognize the rhythms, metrics and other aspects of Literature									
	To read a variety of texts critically and proficiently									
	To enable the students to enjoy the flair of literature through the work of great writer									
	To make the students to know the functions of basic grammar									
	To enable them understanding the intrinsic nuances of writing in English language									
Course Outcomes	On completion of the course, the students will be able to								BT Mapping	
									(Highest Level)	
	CO1	comprehend and discuss the various facets of selected poems							K3	
	CO2	analyze and interpret texts written in English							K3	
	CO3	read drama with graduate-level interpretive and analytical proficiency							K3	
	CO4	improve the fluency and formation of grammatically correct sentence							K3	
CO5	enhance the writing skills for specific purposes							K3		
UNIT-I	POETRY						Periods: 09			
6. Rudyard Kipling - <i>IF</i>										
7. William Wordsworth - <i>Daffodils</i>										
8. Percy Bysshe Shelley - <i>Ozymandias</i>										
9. William Ernest Henley - <i>Invictus</i>										
10. Rabindranath Tagore - <i>On the Nature of Love</i>										
UNIT-II	PROSE						Periods: 09			
5. Bertrand Russell - <i>The Road to Happiness</i>										
6. Charles Lamb - <i>A Dissertation upon Roast Pig</i>										
UNIT-III	SHORT STORIES						Periods: 09			
6. Oscar Wilde - <i>The Devoted Friend</i>										
7. R. K. Narayan - <i>God and the Cobbler</i>										
UNIT-IV	DRAMA						Periods: 09			
6. H H Munro - <i>The Death Trap</i>										
7. J.M. Synge - <i>Riders to the Sea</i>										
UNIT-V	GRAMMAR AND COMPOSITION						Periods: 09			
6. Parts of Speech										
7. Subject-Verb Agreement										
8. Letter Writing										
9. Essay Writing										
Lecture Periods: 45		Tutorial Periods: 0			Practical Periods: -			Total Periods: 45		
Text Books										
5. Narayan, R.K, <i>Malgudi days</i> , Indian Thought Publication, 2019										
6. Synge John Millington, <i>Riders to the Sea</i> , Sahitya Sarowar Publisher, 2022										
7. P. C. Wren, H. Martin, <i>High School Wren and Martin English Grammar and Composition</i> , S. Chand & Company Pvt. Ltd, 2022.										
Reference Books										
1. Lamb, Charles, <i>Selected Prose</i> , Penguin Classics Publication, 2 nd Edition, 2013.										
2. S.C. Gupta, <i>English Grammar & Composition Very Useful for All Competitive Examinations</i> , Arihant Publications,										

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2014.

3. Saki, H. H. Munro, F. Carruthers Gould, *The Complete Works of Saki: Illustrated Edition: Novels, Short Stories, Plays, Sketches & Historical Works, including Reginald, The Chronicles of Clovis, ... The Death-Trap*, The Westminster Alice Kindle Edition, e-artnow, 2018.
4. J.M. Synge, S.C. Narula. *Riders to the Sea*. Surjeet Publication. 2018.
5. S.C.Gupta. *A Handbook for Letter Writing*. Arihant Publication. 2016.

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7. <https://www.englishcharity.com/of-love-by-francis-bacon-explanation/>
8. <https://www.gradesaver.com/charles-lamb-essays/study-guide/summary-a-dissertation-upon-roast-pig>
9. <https://allpoetry.com/On-The-Nature-Of-Love>
10. <http://sittingbee.com/god-and-the-cobbler-r-k-narayan/>
11. <https://www.toppr.com/guides/essays/>

* TE – Theory Exam, LE – Lab Exam

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
1	3	3	3	3	3	3	3	3
2	3	3	3	3	3	3	3	3
3	3	2	3	3	2	3	3	3
4	2	3	2	1	2	2	3	2
5	3	3	3	3	3	3	3	3

Correlation Level:

High	Moderate	Low
3	2	1

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

R.D. Mohan Kumar

Department	Computational Studies		Programme : B.Sc DATA SCIENCE AND ANALYTICS						
Semester	First		Course Category Code: CC			*End Semester Exam Type: TE			
Course Code	A20DAT101		Periods / Week			Credit	Maximum Marks		
			L	T	P	C	CAM	ESE	TM
Course Name	C PROGRAMMING		4	0	0	4	25	75	100
(Common to _____ Branches)									
Prerequisite									
<i>After completion of the course, the students will be able to</i>								BT Mapping	
								(Highest Level)	
Course Outcome	CO1	Develop simple applications in C using different data types.						K3	
	CO2	Develop programs involving decision structures, loops, arrays and functions.						K3	
	CO3	Classify the difference between call by value and call by reference						K3	
	CO4	Design and develop programs using Pointers to understand the dynamics of memory.						K3	
	CO5	Understand the File management Operations and perform different file operations.						K3	
UNIT-I	INTRODUCTION TO C					Periods: 12			
Introduction to C Programming – Algorithm – Pseudo code – Flow chart – Basic Structure of C Program – Keywords and Identifiers - Data Types - Variables - Constants - Operators - Arithmetic Expressions - Type conversions - Input and Output operations.									CO1
UNIT-II	DECISION MAKING AND BRANCHING					Periods: 12			
Decision Making Statements: if statement, if-else, nested if-else statement, else if ladder and Switch Statement – Looping: While Loop, for loop, do-while loop – break and continue statement, go to statement.									CO2
UNIT-III	ARRAYS AND FUNCTIONS					Periods: 12			
Introduction to Arrays - Declaration of Array - one-dimensional array, two - dimensional array, multidimensional array - Functions: Introduction to Functions - Function Definition - Category of Functions -call by value, call by reference - Storage classes - auto, register, static, extern, arrays to functions.									CO3
UNIT-IV	STRING AND POINTERS					Periods: 12			
Strings - Declaring Strings - Reading and Writing strings - String Handling Functions - Pointers - Initialization of Pointer - Pointers Expressions - Pointer Arithmetic - pointers and arrays - array of pointers - pointer as function arguments - pointers to functions - Const Pointer - sizeof() operator.									CO4
UNIT-V	STRUCTURES, UNIONS AND FILE MANAGEMENT					Periods: 12			
C Structure – Structure Initialization – Arrays of Structures – Nested Structure – Structures and Functions –Unions – Concept of a file – File Management – input /output operations on files – Random access to file – Error handling in files.									CO5
Lecture Periods: 45			Tutorial Periods: 15			Practical Periods: -		Total Periods: 60	
Text Books									
<ol style="list-style-type: none"> Balagurusamy. E, "Programming in ANSI C", Tata McGraw Hill, 8th Edition, 2019. Byron S Gottfried and Jitendar Kumar Chhabra, "Programming with C", Tata McGraw Hill Publishing Company, 4th Edition, New Delhi, 2015. Herbert Schildt, "C: The Complete Reference", McGraw Hill, 4th Edition, 2014. Yashwant Kanetkar, "Let us C", BPB Publications, 16th Edition, 2017. Computer Science: A Structured Programming Approach Using C, B.A.Forouzan and R.F. Gilberg, Third Edition, Cengage Learning. The C Programming Language by Brian Kernighan and Dennis Ritchie 2nd edition. 									

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1. Ashok N Kamthane, "Computer Programming", Pearson education, Second Impression, 2012.
2. VikasVerma, "A Workbook on C ", Cengage Learning, 2nd Edition, 2012.
3. Dr. P. Rizwan Ahmed, "Office Automation", Margham Publications, 2016.
4. P.Visu, R.Srinivasan and S.Koteeswaran, "Fundamentals of Computing and Programming", 4th Edition, SriKrishna Publications, 2012.
5. PradipDev, ManasGhoush, "Programming in C", 2nd Edition, Oxford University Press, 2011.

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1. <https://www.programiz.com/c-programming>
2. <https://www.geeksforgeeks.org/c-language-set-1-introduction/>
3. <https://www.tutorialspoint.com/cprogramming>
4. <https://www.assignment2do.wordpress.com/.../solution-programming-in-ansi-c> 5. <https://nptel.ac.in/courses/106/104/106104128/>
6. <https://www.coursera.org/courses?query=c%20programming>
7. <https://www.udemy.com/course/c-programming-for-beginners/>

* TE – Theory Exam, LE – Lab Exam

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)						Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3
1	2	3	2	3	3	3	2	3	3
2	3	3	3	3	3	3	3	2	3
3	3	2	3	3	2	3	3	3	3
4	2	3	2	3	2	2	2	2	2
5	3	3	3	3	3	3	3	3	3

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

R.D. Mohan Kumar

Department	Computational Studies		Programme: B.Sc. Data Science and Analytics						
Semester	First		Course Category Code: DSC			*End Semester Exam Type: TE			
Course Code	A23DAT102D		Periods/Week			Credit	Maximum Marks		
			L	T	P	C	CAM	ESE	TM
Course Name	Data Structure and Algorithms Using C		4	0	0	4	25	75	100
Prerequisite	Basic knowledge in Algorithms in Data Structures								
Course Objectives	To introduce the primary data structures and algorithms for their associated operations.								
	To understand the applications of data structures.								
	To learn the implementation issues of the data structures introduced.								
	To understand the concepts of searching and sorting Techniques.								
	To understand the basic concepts of stack, queue, List, Trees and Graphs								
Course Outcome	<i>After the completion of this course, the students will be able to:</i>							BT Mapping (Highest Level)	
	CO1	Analyze algorithms based on time and space complexity						K2	
	CO2	Implement and Apply linear data structures to solve simple problems.						K2	
	CO3	Represent and Apply Non-linear data structures to solve complex problems.						K3	
	CO4	Use Divide and conquer method to solve various problems.						K4	
	CO5	Use Greedy techniques to solve real time problem.						K4	
UNIT-I	INTRODUCTION TO DATA STRUCTURES AND ALGORITHMS					Periods: 12			
Types of data structures - Abstract Data Type (ADT) - Analysis of algorithm - Time and space complexity - Recurrence relation - Asymptotic notation. Sorting - Searching.									CO1
UNIT-II	LIST ADT					Periods: 12			
Static and dynamic Representation - Types -Single Linked List-Doubly Linked List - Circular Linked List - Operations and Applications.									CO2
UNIT-III	STACK AND QUEUE ADT					Periods: 12			
Static and arrays - Operations - Applications- Balancing Parenthesis- Evaluation of Arithmetic Expression- Infix to Postfix conversion. Queue ADT: Static and dynamic Representation - Linear queue - circular queue.									CO3
UNIT-IV	TREE ADT AND GRAPH ADT					Periods: 12			
Representation - Types - Binary Tree - Threaded Binary Tree - Binary Search Tree - Operation and Application. Graph: Representation - Types -Graph Traversal - Depth First Search - Breadth First Search -Application - Minimum cost spanning tree - Topological Sorting.									CO4
UNIT-V	ALGORITHM DESIGN TECHNIQUES					Periods:12			
Divide and Conquer - General method - Finding Minimum Maximum - Merge Sorting - Greedy Method: General Method - knapsack problem - Single source shortest path - Dijkstras: Job sequencing.									CO5
LecturePeriods: 60			TutorialPeriods: -			PracticalPeriods: -		TotalPeriods: 60	
TextBooks									
<ol style="list-style-type: none"> 1. Mark Allen Weiss, "Data Structures and Algorithm Analysis in C++", 4th Edition, Pearson Education, 2013. 2. E. Horowitz, S. Sahni and S. Rajasekaran, "Computer Algorithms/C++", Second Edition, The Orient Blackswan,2019. 3. A Puntambekar, "Data Structures", 3rd Revised Edition, Technical Publications Pune, 2008. 									
ReferenceBooks									
<ol style="list-style-type: none"> 1. ReemaThareja, "Data Structures Using C", Edition, Oxford University Press, 2017. 									

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2. Gilles Brassard, "Fundamentals of Algorithms", Pearson Education, 2015.
3. Alfred V. Aho, John E. Hopcroft, Jeffrey D. Ullman, "Data Structures and Algorithms", Pearson Education, Reprint, 2006.
4. Ellis Horowitz, Sartaj Sahni, Susan Anderson-Freed, "Fundamentals of Data Structures in C", 2nd Edition, University Press, 2008.

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1. <https://www.geeksforgeeks.org/>
2. <http://opendatastructures.org/>
3. <https://nptel.ac.in/courses/106/106/106106127>

* TE – Theory Exam, LE – Lab Exam

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)						Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3
1	2	3	2	3	2	3	2	3	2
2	2	3	3	2	3	3	3	2	3
3	3	2	3	3	2	3	2	3	2
4	2	2	2	2	2	2	2	2	2
5	3	3	3	3	3	3	3	3	3

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10	5	5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

R.D. Mohan Kumar

Department	Mathematics		Programme: B.Sc. Data Science and Analytics							
Semester	First		Course Category Code: IDC			*End Semester Exam Type: TE				
Course Code	A23MAD104D		Periods/Week			Credit	Maximum Marks			
			L	T	P	C	CAM	ESE	TM	
Course Name	Applied Probability and Statistics		3	1	0	4	25	75	100	
Prerequisite	Basic knowledge in Probability and Statistics									
Course Objectives	Know The concepts of discrete and continuous random variables.									
	Learn the application of probability distributions.									
	Understand the concept of correlation and regression.									
	Apply the testing of hypothesis.									
	Study the Small Sampling and its Applications.									
Course Outcome	<i>After the completion of this course, the students will be able to:</i>							BT Mapping (Highest Level)		
	CO1	Solve the problems under Random variables.							K2	
	CO2	Apply the various distributions in real life problems							K2	
	CO3	Find the correlation between the variables and find the regression lines.							K3	
	CO4	Solve the various real life problems using large sampling.							K4	
	CO5	Apply the various test under small sampling.							K4	
UNIT-I	RANDOM VARIABLES					Periods: 12				
Random Variables: Discrete - continuous random variables - probability mass - probability density and cumulative distribution functions - Mathematical expectation - Variance-Problems.									CO1	
UNIT-II	PROBABILITY DISTRIBUTIONS(DISCRETE AND CONTINUOUS)					Periods: 12				
Binomial, Poisson, Normal, exponential and Gamma distributions -their Properties.-Problems(Excluded Derivatives of Mean, Variance, MGF for all distributions)									CO2	
UNIT-III	CORRELATION & REGRESSION					Periods: 12				
Coefficient of correlation- the rank correlation.-Regression Coefficient-The lines of regression.									CO3	
UNIT-IV	LARGE SAMPLES					Periods: 12				
Testing of hypothesis: Null hypothesis, Alternate hypothesis, Type I & Type II errors-Level of significance. Large sample tests: (i) Test of Equality of means of two samples, equality of sample mean and population mean (cases of known variance & unknown variance, equal and unequal variances) (ii) Tests of significance of difference between sample S.D and population S.D. (iii) Tests of significance difference between sample proportion and population proportion, difference between two sample proportions.									CO4	
UNIT-V	STRUCTURES, UNIONS AND FILE MANAGEMENT					Periods: 12				
Student t-distribution, Test of significance sample mean and population mean, difference between means of two small samples. Snedecor's F- distribution . Test of equality of two population variances. Chi-square distribution, Chi-square test of goodness of fit-Problems only(Excluded Derivations of all tests)									CO5	
Lecture Periods: 45			Tutorial Periods: -15			Practical Periods: -		Total Periods: 60		
Text Books										
1. an, Probability, statistics and Random Processes, TataMc.Graw-Hill Company Ltd., 3 rd Edition, 2008.						T.Veeraraj Publishing				

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2. Probability and Statistics for Engineers by Richard Arnold Johnson, Irwin Miller and John E. Freund, New Delhi, Prentice Hall.
3. Probability and Statistics for Engineers and Sciences by Jay L. Devore, Cengage Learning.

Reference Books

1. Ervin Kreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons, 2006.
2. Fundamentals of Mathematical Statistics by S.C. Gupta & V.K. Kapoor, S. Chand
3. Introduction to Probability and Statistics for Engineers and Scientists by Sheldon M. Ross, Academic Press.

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1. https://www.efunda.com/math/math_home/math.cfm
2. <https://www.ocw.mit.edu/resources/#Mathematics>.
3. <https://www.sosmath.com/>
4. <https://www.mathworld.wolfram.com/>

* TE – Theory Exam, LE – Lab Exam

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)						Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3
1	3	3	2	3	2	3	2	3	2
2	2	3	2	2	3	3	3	2	3
3	3	2	3	2	2	3	2	3	2
4	2	2	2	2	2	2	2	2	2
5	3	3	3	3	3	3	3	3	3

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	10		5	5	5	75	100

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

R.D. Mohan Kumar

Department	Computational Studies			Programme: B.Sc. Data Science and Analytics						
Semester	First			CourseCategoryCode: DSE		*End SemesterExamType: LE				
CourseCode	A23DAL101D			Periods/Week			Credit	MaximumMarks		
				L	T	P	C	IM	ESE	TM
Course Name	C Programming Lab			0	0	4	2	50	50	100
Prerequisite	Basic Knowledge in C programming									
Course Objectives	To familiarize with C programming constructs.									
	To develop programs in C using basic constructs.									
	To develop programs in C using arrays.									
	To develop applications in C using strings, pointers, functions.									
	To develop applications in C using structures.									
	To develop applications in C using file processing.									
Course Outcome	<i>After completion of the course, the students will be able to</i>								BT Mapping (Highest Level)	
	CO1	Apply the various basic programming constructs.							K2	
	CO2	Develop C programs for simple applications making use of basic constructs, arrays and strings.							K2	
	CO3	Develop C programs involving function.							K3	
	CO4	Design applications using pointers, and structure.							K4	
	CO5	Apply concept of file management.							K4	
List of Experiment										
1.	Write a program to initialize, assignment & printing variables of different data types.									
2.	Write a program to demonstrate arithmetic operators and logical operators.									
3.	Write a Program to read marks of students in five subjects and print results using decision statements.									
4.	Write a program to print prime numbers in the given range.									
5.	Write a program to print minimum and maximum elements using 1D array.									
6.	Write a program to perform matrix addition and matrix subtraction using 2D array.									
7.	Write a program to verify the given string is palindrome or not.									
8.	Write a program to find product of two numbers using functions with arguments, with return type.									
9.	Develop program to illustrate pointers and Structure.									
10.	Develop programs for file operations.									
LecturePeriods: -			TutorialPeriods:-			PracticalPeriods:30		TotalPeriods:30		
TextBooks										
1. Balagurusamy. E, "Programming in ANSI C", Tata McGraw Hill, 8 th Edition, 2019.										
2. Byron S Gottfried and Jitendar Kumar Chhabra, "Programming with C", Tata McGraw Hill Publishing Company, 4 th Edition, New Delhi, 2015.										
3. Herbert Schildt, "C: The Complete Reference", McGraw Hill, 4 th Edition, 2014.										
4. Yashwant Kanetkar, "Let us C", BPB Publications, 16 th Edition, 2017.										
ReferenceBooks										
1. Zed A Shaw, "Learn C the Hard Way: Practical Exercises on the Computational Subjects You Keep Avoiding (Like C)", Addison Wesley, 2016.										
2. Anita Goel and Ajay Mittal, "Computer Fundamentals and programming in C", 1 st Edition, Pearson Education, 2011.										
3. Yashwanth Kanethkar, "Let us C", 13 th Edition, BPB Publications, 2008.										
4. Maureen Sprankle, Jim Hubbard, "Problem Solving and Programming Concepts," 9 th Edition, Pearson, 2011.										
5. E. Balaguruswamy, "Programming in ANSI C", 8 th Edition, 2019, McGraw Hill Education, ISBN: 978-93-5316-513-0										

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1. <https://alison.com/course/introduction-to-c-programming>
2. <https://www.geeksforgeeks.org/c-programming-language/>
3. http://cad-lab.github.io/cadlab_data/files/1993_prog_in_c.pdf
4. <https://www.tenouk.com/clabworksheet/clabworksheet.html>
5. <https://fresh2refresh.com/c-programming/>
6. <http://www.skiet.org/downloads/cprogrammingquestion.pdf>

*LE – Lab Exam

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	3	3	2	3	2	2	2	3
2	2	2	3	2	3	2	3	2
3	3	2	3	3	2	3	2	3
4	2	2	2	2	2	2	2	2
5	3	3	3	3	3	3	3	3

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Internal Marks			End Semester Examination (ESE) Marks	Total Marks
	Model Exam	Record	Attendance	50	100
Marks	30	10	10		

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

R.D. Mohan Kumar

Department	Computational Studies	Programme: B.Sc. (Data Science and Analytics)						
Semester	First	CourseCategoryCode: DSE			*End SemesterExamType: LE			
CourseCode	A23DAL102D	Periods/Week			Credit	MaximumMarks		
		L	T	P	C	IM	ESE	TM
Course Name	Data Structure and Algorithms using C Lab	0	0	4	2	50	50	100
Prerequisite	Basic Knowledge in C programming							
Course Objectives	Ability to identify the appropriate data structure for given problem.							
	To learn about the concepts of Searching and Sorting.							
	Identify suitable data structure to solve various computing problems							
	To study about the linear and non-linear Data Structures.							
	To learn about the concepts of ADT including List, stack and Queues							
Course Outcome	<i>After completion of the course, the students will be able to</i>							BT Mapping (Highest Level)
	CO1	Use appropriate data structure for given problem.						K2
	CO2	Solve the given problem by identifying the appropriate Data Structure.						K2
	CO3	Develop C programs involving function.						K3
	CO4	Design applications using pointers, and structure.						K4
	CO5	Apply concept of file management.						K4
List of Experiment								
<ol style="list-style-type: none"> Write programs for implementing Linear searching techniques to arrange a list. Write programs for implementing Bubble sort sorting techniques to arrange a list. Design and implement Stack and its operations using List. Design and implement Queue and its operations using List. Uses Stack operations to convert infix expression into postfix expression. Write programs for the following operations on Single Linked List. <ol style="list-style-type: none"> Creation insertion deletion traversal Write programs for the following operations on Circular Linked List. <ol style="list-style-type: none"> Creation insertion deletion traversal Write a Python program to implement Stack using linked list. Write a program to perform the following operation using binary search tree: <ol style="list-style-type: none"> Create a binary search tree. Traverse the above binary search tree recursively in pre-order, post-order and in-order. Count the number of nodes in the binary search tree. Write programs to implement the following graph traversal algorithms using depth first search. 								
LecturePeriods: -		TutorialPeriods:-		PracticalPeriods:30		TotalPeriods:30		
TextBooks								
<ol style="list-style-type: none"> Mark Allen Weiss, "Data Structures and Algorithm Analysis in C++", 4th Edition, Pearson Education, 2013. E. Horowitz, S. Sahni and S. Rajasekaran, "Computer Algorithms/C++", Second Edition, The Orient Blackswan, 2019. A Puntambekar, "Data Structures", 3rd Revised Edition, Technical Publications Pune, 2008. 								
ReferenceBooks								
<ol style="list-style-type: none"> Rance D. Necaise, "Data Structures and Algorithms using Python", Wiley, John Wiley & Sons, INC., 2011. Benjamin Baka, David Julian, "Python Data Structures and Algorithms", Packt Publishing Ltd., 2017, 								

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3. Ellis Horowitz, Sartaj Sahni, "Fundamentals of Data Structures", Illustrated Edition, Computer Science Press, 2018.

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2. <http://interactivepython.org/runestone/static/pythonds/index.html>
3. http://www.tutorialspoint.com/data_structures_algorithms
4. <http://www.geeksforgeeks.org/data-structures/>

*LE – Lab Exam

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)					Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
1	3	3	2	3	3	3	2	2
2	2	3	3	2	3	3	3	2
3	3	2	3	3	2	3	2	3
4	2	2	2	2	2	2	2	2
5	3	3	3	3	3	3	3	3

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Internal Marks			End Semester Examination (ESE) Marks	Total Marks
	Model Exam	Record	Attendance	50	100
Marks	30	10	10		

* Application oriented / Problem solving / Design / Analytical in content beyond the syllabus

R.D. Mohan Kumar

Department	Computational Studies		Programme: B.Sc Data Science and Analytics							
Semester	I		Course Category Code: SEC			*End Semester Exam Type: TE				
Course Code	A23ENSA02C		Periods / Week			Credit	Maximum Marks			
Course Name	Soft Skills		L	T	P	C	CAM	ESE	TM	
	(Common to Science Branches)		0	0	4	2	100	-	100	
Prerequisite	Basic grammar knowledge									
Course Objectives	The main objectives of the course are,									
	To train students in Soft skills in order to enable them to be professionally competent									
	To facilitate the students for Goal setting and Goal Achieving skills									
	To enrich the sense of social responsibility and accountability of the students									
	To help the students to train them for Stress Management and Time Management									
Course Outcome	On completion of the course, the students will be able to							BT Mapping (Highest Level)		
	CO1	enhance the Soft skills and compete professionally							K3	
	CO2	achieve Goal setting and Goal Achieving skills							K3	
	CO3	improve their social responsibility and accountability skills							K6	
	CO4	enrich Stress Management and Time Management							K6	
	CO5	Demonstrate the quality of a Team ship and Creative thinking							K2	
UNIT-I	POSITIVE ATTITUDE					Periods: 06				
Skills-Personal Skills: Knowing Oneself/Self-Discovery-Confidence Building- Defining Strengths of Attitude -formation of attitudes - psychological factors - the power of positive attitude -the benefits of positive attitude - developing positive attitude - negative attitude - the causes of negative attitude -the consequences of negative attitude -how to change negative attitude									CO1	
UNIT-II	GOAL SETTING					Periods: 06				
Introduction - importance of goal setting - goal definition – types of goals -what exactly goal setting why people don't set goals -how to choose the right goals - SMART GOALS -Career goals -benefits of career goal setting -goal setting tips									CO2	
UNIT-III	STRESS AND TIME MANAGEMENT					Periods: 06				
Definition of Stress management - types of stress - causes of stress - stress management and reduction techniques									CO3	
Definition of Time management - Setting goals, planning - prioritizing - setting deadlines - multi-tasking - practicing self-discipline - overcoming procrastination										
UNIT-IV	TEAMWORK SKILLS					Periods: 06				
Communication as Social Construction - Dynamics of professional Group communication - Group and Team - Team Building Process - Managing conflict and appreciating/respecting differences - Decision making & effective negotiation - Types of teams - Understanding, Identity and nurturing sensitivity (in terms of gender, orientation, language)									CO4	
UNIT-V	PROBLEM SOLVING THROUGH CREATIVE THINKING					Periods: 06				
Thinking Creatively-Improving Perceptions -Creative thinking as an essential skill - Techniques of creative thinking (such as brainstorming, lateral thinking, mind mapping, rich pictures, role play) - Practical problem solving through creative thinking - Case Study									CO5	
Lecture Periods: -			Tutorial Periods: -			Practical Periods: 30		Total Periods:30		

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Text Books ((Minimum 2 and maximum 3 – Latest editions to be given)

1. Sabina Pillai, Agna Fernandez, *Soft Skills and Employability Skills*, Cambridge University Press, 2017.
2. Jeff Butterfield, *Soft Skills for Everyone*, Cengage India Private Limited, 2nd Edition, 2020.
3. Alex K, *Soft Skills*, S Chand & Company, 1st Edition, 2014

Reference Books (Minimum 5– Latest editions to be given)

1. Barun Mitra, *Personality Development and Soft Skills 2*, Oxford University Press, 2016
2. Prashant Sharma, *Soft Skills 3rd Edition: Personality Development for Life Success*, BPB Publications, 2021.
3. Ghosh, B.N, *Managing Soft Skills for Personality Development*, Tata McGraw Education Publication, 1st Edition, 2012.

Web References (Minimum 5)

1. <https://www.mindtools.com/a5ykiuq/personal-goal-setting>
2. <https://www.healthlinkbc.ca/health-topics/stress-management-managing-your-time>
3. <https://www.herzing.edu/blog/7-important-teamwork-skills-you-need-school-and-your-career>

* TE – Theory Exam, LE – Lab Exam

COs/POs/PSOs Mapping

COs	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	-	-	-	-	-	3	-	-	3	3	2	3	2	2	3
2	-	-	-	-	-	3	-	-	2	3	3	2	3	2	3
3	-	-	-	-	-	2	-	-	3	3	3	3	2	2	3
4	-	-	-	-	-	2	-	-	3	2	3	2	3	2	3
5	-	-	-	-	-	2	-	-	2	2	2	1	2	1	3

Correlation Level: 1 - Low, 2 - Medium, 3 – High

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Assignment*	Attendance		
Marks	80		-	10	10	-	100

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Department	Computational Studies	Programme: B.Sc Data Science and Analytics						
Semester	I	Course Category Code: AEC		*End Semester Exam Type: TE				
Course Code	A23AETA01C	Periods / Week			Credit	Maximum Marks		
		L	T	P	C	CAM	ESE	TM
Course Name	Public Administration	2	0	0	1	100	-	100
(Common to all science Branches)								
Prerequisite	Basic Knowledge in Public administration							
Course Objectives	The main objectives of the course are,							
	To introduce the elements of public administration							
	To help the students obtain a suitable conceptual perspective of public administration							
	To introduce them the growth of institution devices to meet the need of changing times							
	To instill and emphasize the need of ethical seriousness in contemporary Indian Public Administration							
Course Outcome	On completion of the course, the students will be able to							BT Mapping
								(Highest Level)
	CO1	Understand the concepts and evolution of Public Administration.						K2
	CO2	Be aware of what is happening in the Public Administration in the country.						K1
	CO3	Explain the Territory Administration in the State and the Centre.						K2
	CO4	Appreciate emerging issues in Indian Public Administration.						K6
CO5								
UNIT-I	INTRODUCTION TO PUBLIC ADMINISTRATION				Periods: 07			
Meaning, nature and Scope of Public Administration and its relationship with other disciplines- Evolution of Public Administration as a discipline — Woodrow Wilson, Henry Fayol , Max Weber and others - Evolution of Public Administration in India – Arthashastra – Colonial Administration upto 1947							CO1	
UNIT-II	PUBLIC ADMINISTRATION IN INDIA				Periods: 08			
Enactment of Indian Constitution - Union Government – The Cabinet – Central Secretariat — All India Services – Training of Civil Servants – UPSC – NitiAyog – Statutory Bodies: The Central Vigilance Commission – CBI - National Human Rights Commission – National Women’s Commission –CAG							CO2	
UNIT-III	STATE AND UNION TERRITORY ADMINISTRATION				Periods: 08			
Differential Administrative systems in Union Territories compared to States Organization of Secretariat: - Position of Chief Secretary, Functions and Structure of Departments, Directorates – Ministry of Home Affairs supervision of Union Territory Administration – Position of Lt.Governor in UT – Government of Union Territories Act 1963 – Changing trend in UT Administration in Puducherry and Andaman and Nicobar Island.							CO3	
UNIT-IV	EMERGING ISSUES IN INDIAN PUBLIC ADMINISTRATION				Periods: 07			

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Changing Role of District Collector – Civil Servants – Politicians relationship – Citizens Charter - Public Grievance Redressal mechanisms — The RTI Act 2005 – Social Auditing and Decentralization – Public Private partnership.

CO4

Lecture Periods: 30

Tutorial Periods: -

Practical Periods: -

Total Periods:30

Text Books

1. Avasthi and Maheswari, "Public Administration", Lakshmi Narain Agarwal, 1st Edition, 2016.
2. Ramesh K.Arora, "Indian Public Administration: Institutions and Issues", New Age International Publishers, 3rd Edition, 2012.
3. Rumki Basu, "Public Administration: Concept and Theories", Sterling, 1st Edition, 2013.

Reference Books

1. Siuli Sarkar, "Public Administration in India", Prentice Hall of India, 2nd Edition, 2018.
2. M. Laxmikanth, "Public Administration", McGraw Hill Education, 1st Edition, 2011.
3. R.B.Jain, "Public Administration in India, 21st Century Challenges for Good Governance", Deep and Deep Publications, 2002.

Web References

1. <http://cic.gov.in/>
2. <http://www.mha.nic.in/>
3. <http://rti.gov.in/>
4. <http://www.cvc.nic.in/>

* TE – Theory Exam, LE – Lab Exam

Evaluation Method

Assessment	Continuous Assessment Marks (CAM)					End Semester Examination (ESE) Marks	Total Marks
	CAT 1	CAT 2	Model Exam	Report	Attendance		
Marks	70		-	20	10	-	100

R.D. Maheshwari