# Bhavan's Vivekananda College

of Science, Humanities and Commerce Sainikpuri, Secunderabad – 500 094 Autonomous College - Affiliated to Osmania University Accredited with 'A' grade by NAAC

# B.Sc (MSCs)

# **Program Outcomes**

- **PO1 Knowledge:** Acquire the knowledge with facts and figures related to Mathematics, Physics, Electronics, Computer Science and Statistics and understand the basic concepts, fundamental principles and scientific theories related to various scientific phenomena and their relevance in day-to-day life.
- PO2 Skills: Acquire the skills in handling scientific instruments & skills of observation and drawing logical inference from scientific experiments.
- PO3 Modern Tool Usage: Apply appropriate techniques, skills, modern tools and IT tools to practice.
- **PO4 Creativity & Analysis:** Think creatively to propose novel ideas in explaining the evidence of data and provide new solutions to the problems and analyse the given scientific data systematically and have the ability to draw conclusion.
- **PO5 Communication:** Communicate effectively on problems, issues and solutions with community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **PO6 Ethics & Environment:** Apply ethical principles and commit to professional ethics and responsibilities and norms in research and the functional areas, understand the issues of environmental context and sustainable development.
- **PO7 Individual and Team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- POS Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context of socio, economic and technological changes.

# **Program Specific Outcomes**

**PSO1:** Understand the basic concepts, develop problem solving skills, improve logical thinking and develop systematic approach to tackling situations

**PSO2:** Get acquainted with knowledge and skillset and use statistical techniques effectively in broad areas of analytic, scientific, government, financial, health, technical, industries and other sectors.

**PSO3:** Understand and analyse integrated frame work environment and to develop real time applications

### Course Outcomes

#### Mathematics:

Name of the Course Course Code		DIFFERENTIAL EQUATIONS AND GROUP THEORY		
		MT121		
CO1	Solve differential equations of first order & first degree.			
CO2	Apply concepts of differentiation to calculate problems on Total differential equations, Simultaneous Total differential equations and differential equations of first order but not first degree.			
CO3	Determine various concepts in Group theory			
CO4	Prove the conce	Prove the concepts of Group theory		

Name of the Course Course Code		DIFFERENTIAL EQUATIONS AND DIFFERENTIAL CALCULUS			
		MT221			
CO1	Use analytical methods to find solutions higher order linear differential equations				
CO2	Find solutions of non-homogenous higher order linear differential equations.				
СОЗ	Analyze and int	erpret concepts of differentiation, continuity			

Name of the Course		RING THEORY&PARTIAL DIFFERENTIAL EQUATIONS				
Course Code		MT321				
CO1	Determine vario	Determine various concepts in Ring theory.				
CO2	Prove the concepts of Ring theory.					

CO3	Solve linear and nonlinorder.	near	partial differential (	equations	of first
CO4	Solve homogeneous differential equations.	and	non-homogeneous	linear	partial

Name of the Course		Theory of Equations			
Cour	se Code	SEC321			
		ncepts learnt the students are expected to solve ynomial equation			

Name	of the Course	REAL ANALYSIS			
Course Code		MT421			
CO1 Determine various concepts in Sequences, Series, Sequence functions, Series of functions and Integration.					
CO2	Determine various properties of Sequences, Series, Sequences functions, Series of functions and Integration.				
CO3	Prove the concepts of Sequences, Series, Sequences functions Series of functions and Integration.				
CO4 Apply various tests for the convergence of Sequences, Sequences functions, Series of functions and Integrable functions.					

Name of the Course Course Code		LOGIC AND SETS				
		SEC421				
CO1	After the completion of the course students appreciate its importance in the development of computer science					

Name of the Course Course Code		LINEAR ALGEBRA	
		MT521	
CO1	interdisciplinar Learn the cond express vector s	n of this course students appreciate its y nature. Cepts of basis and dimension of vector space, spaces in different dimensions, base concept of a d properties of vectors on the base.	
CO2	defined between transformation kernel of a operations b	column space of a matrix, learn some functions in vector spaces, learn required conditions for a in order to be a linear transformation, find linear transformation, learn the algebraic setween linear transformations, matrix of a linear transformation.	

CO3	Learn how to calculate eigenvalues and eigenvectors of a linear transformation, concepts of eigenvalues and eigenvectors of a matrix.
CO4	Students learn Concepts of inner product on vector spaces, find the length of a vector in some vector spaces and the angle between two vectors, explain that two vectors are orthogonal, express that a set is orthogonal and orthonormal.

Name	of the Course	VECTOR CALCULUS			
Course Code		MT521A			
CO1	some of the pro After learning the of point and vec	the way Vector Calculus is used to address blems of Physics. his course students will learn to define concepts ctor and also learn to apply differences and hany fields of Science.			
CO2	Apply dot and vectors, orien	cross product to determine angles between tation of axes, areas of triangles and in space, scalar and vector projections			
CO3	Calculate direct concept of a cor that give necess field is conserva- field and describ	ional derivatives and gradients, and learn asservative vector field, state and apply theorems sary and sufficient conditions for when a vector ative, definitions of curl and divergence of vector be application. Green's Theorem, Gauss tokes' Theorem and compute them.			
CO4		ons of these theorems in Physics and			

Name of the Course		SEC NUMBER THEORY						
Cour	se Code	SEC	521					
CO1	Students shall properties of nu	be mber	able s in a	to	understand	and	analyze	the

Name of the Course		GE MATHEMATICAL APTITUDE -I
Course Code		GE521
CO1	Students will be competitive exa	benefitted by these concepts to crack minations

Name of the Course Course Code		NUMERICAL ANALYSIS
		MT621
CO1		he course students realize the importance of the ng some problems of algebra and calculus,

	understand the theoretical and practical aspects of the use of numerical analysis.  Students will be equipped with the knowledge of finding the roots of algebraic and transcendental equations.
CO2	Students will be equipped with the knowledge of calculating the interpolation, extrapolation values without actually finding the function will learn to and evaluate a derivative at a value using an appropriate numerical method. Proficient in implementing numerical methods for a variety of multidisciplinary applications. Establish the limitations, advantages and disadvantages of numerical analysis.
CO3	Derive numerical methods for interpolation, differentiation, integration and also solve linear equations.
CO4	Understand common numerical analysis and how they are used to obtain approximate solutions.

Name of the Course Course Code		SOLID GEOMETRY MT621A
CO2	Students will be able to analyze and differentiate the differences in recognizing few types of conics.	
CO3	0 0 01	

Name of the Course Course Code		SEC GRAPH THEORY SEC621

Name of the Course Course Code		GE MATHEMATICAL APTITUDE -II GE621

# Statistics:

Name of the Course Course Code		Descriptive Statistics & Probability ST122
CO2	2 1 1	
CO3	Utilize basic con	cepts of probability and theorems in probability 'theorem to calculate, interpret and
CO4	Apply key concer continuous rand	ots of probability, including discrete and om variables, Probability functions, Generating tations and variances.

Name of the Course Course Code		Probability distribution ST222
CO2	Learn the princi	iple of several well-known discrete actuding Binomial, Poisson, Geometric, Hyper
CO3	probability distrib	late the probabilities of the continuous butions
CO4		

Name of the Course Course Code		Statistical Methods and Inference I ST322
CO2	Compute and interpret Correlation Analysis, Regression lines and multiple regression analysis with applications.	
CO3		interval estimation techniques to estimate the a, proportion and variance.
CO4	Compute various	s properties of estimation to deal real life

Name of the Course Course Code		Data Analysis Using with R - I
		SE322
CO1	the capabilities	fluency in R programming, and an insight into of the language as a productivity tool for data and statistical analysis.

Name of the Course Course Code		Statistical Inference II ST422
CO2	Acquire techniques to test hypotheses related to population means, proportions and variances under different circumstances.	
CO3	Grab the knowledge of inferential statistics and their applications in real-life business Situations.	
CO4	Apply distribution free test to deal with real time problems.	

Name of the Course Course Code		Data Analysis Using with R - II SE422
CO2	Explore data - se appropriate stati	ets to create testable hypotheses and identify stical tests.

Name of the Course Course Code		Applied Statistics I ST522
CO2		cs of interest and the sample sizes are not those statistics are estimated with an oling error.
CO3	Understand the predictions.	past behavior and would be helpful for future
CO4		

Name of the Course Course Code		Statistical Quality Control & Reliability ST522A
CO2	Determine the question specified number	uality of a batch of products by selecting a r for testing.
CO3	Provides organiz business process	ations tools to improve the capability of their ses.
CO4	The second secon	way to balance the cost of failure reduction e of the enhancement.

Name of the Course Course Code		Data Analysis with SPSS - I SE522
CO2		pase management tasks, descriptive statistics ad basic inferential statistics for comparisons

Name of the Course		Data Analysis with Excel	
Cour	se Code	GE522	
CO1		orm descriptive analysis with Excel, generate graphs and rams for data analysis.	
CO2		Perform correlations, Simple regressions and multiple regression analysis.	

Name of the Course Course Code		Applied Statistics II
		ST622
CO1		or one-way, two -way classification, fixed effect al, number of observations per cell in real time
CO2	Analyze and interpret the data using Design of Experiments.	
CO3	Acknowledge the Vital statistics data uses—they serve as a base for public health, social service, and economic planning and program development and are used to track progress toward health goals.	
CO4	Forecast the market which is of importance in the modern business activities. It helps to design the appropriate pricing policy.	

Name of the Course Course Code		Operation Research ST622A	
CO2	Explain the relationship between a linear program and its dual, including strong duality and complementary slackness and understand the usage of Sequencing Jobs and Simulation for Solving Business Problems		
CO3	Recognize and formulate transportation problems and drive their optimal solution.		
CO4	Recognize and formulate Assignment problems and drive their optimal solution.		

Name of the Course Course Code		Data Analysis with SPSS - II	
		SE622	
CO1	Understand the	nderstand the basic statistical analysis.	
CO2	To perform database management tasks, basic inferential statistics for comparisons, correlations, S.Q.C. and simple forecasting techniques.		

Name of the Course Course Code		Data Analysis with SPSS GE622
CO2		pase management tasks, descriptive statistics ad basic inferential statistics for comparisons

# Computer Science:

Name of the Course Course Code		Programming in 'C' CS125
CO2	Get equipped to use control statements, decision making and looping statements.	
CO3	Use the concepts of arrays, strings and functions	
CO4	Use the concepts processors	s of structure, unions, pointers and pre-

Name	of the Course	Programming in 'C' Lab	
Course Code		CS125P	
CO1	Developing logic	ric skills using control and looping statements	
CO2	'C' concepts imp approach(arrays processors)	lemented with a practical ,strings,functions,structure,union,pointers,pre	

Name of the Course Course Code		Programming in 'C++'
		CS225
CO1	Write basic C++ programs on their own	
CO2	Get equipped to programming co	use the functions and object oriented ncepts
CO3	Use the concepts of inheritance and polymorphism	
CO4	Use the concepts	s of templates and exception handling

Name of the Course Course Code		Programming in 'C++' Lab	
		CS225P	
CO1	Developing real	Developing real time applications using OOP's concepts	
CO2			
	Polymorphism		

Name of the Course Course Code		Data Structures	
		CS325	
CO1	Able to write different searching and sorting technique programs		
CO2	Able to write programs on stacks, queues, deques, priority queues		
CO3	Able to write programs on linked list, doubly linked list		
CO4	Able to write programs on Binary Search Tree operations and Tree Traversal techniques		

Name	e of the Course	Data Structures Using C++ Lab
Course Code		CS325P
CO1	Able to write programs for different searching, sorting, stack queues, deques and priority queues.	
CO2	Able to write programs on linked list, doubly linked list and Binary Search Tree operations.	

Name of the Course Course Code		PC Maintenance SE325A
CO2	Perform basic assembling and disassembling of the computer and troubleshooting, upgrade of computer operating systems and troubleshoot using system tools and diagnostic software.	

Name of the Course Course Code		Database Management Systems	
		CS425	
CO1	Acquire knowled	Acquire knowledge on database concepts.	
CO2	Understanding t	he features of SQL	
СОЗ	Understanding t	he concept of Database maintenance	
CO4	Understand technical and management roles of database administration & data administrator		

Name of the Course Course Code		Database Management Systems Lab
		CS425P
CO1	Students will be able to interact with Database using SQI (Lab).	
CO <sub>2</sub>	Students will be able to write simple SQL queries	

Name of the Course Course Code		Libre Office Calc and Libre Office Base	
		SE425A	
CO1	Get knowledge about Spreadsheet formulas and functions & familiarized about formatting, linking and protecting worksheets		
CO2	Be able to prepare pivot tables, conditional formatting and data validation in Spreadsheet and be able to learn Table creation, Ouery creation, Form wizard and Report wizard in Base		

Name of the Course Course Code		Programming in Java CS525
CO2	Students will lea strings, interface	rn java programs relating to classes, arrays, es.
CO3	Students will lea packages and m	rn java programs relating to the concepts of ultithreading.
CO4	Students will lea exception handli	rn java programs relating to the concepts of ng and applets.

Name of the Course Course Code		Programming in Java Lab
		CS525P
CO1	To demonstrate	looping statements, arrays, oops concepts
CO2	To construct user-defined packages ,threads and applet programs by using exception handling mechanisms.	

Name of the Course Course Code		Software Engineering (Elective-I)
		CS525A
CO1	Students will be capable to analyze Software Engineering and its specifications	
CO2	Students will learn designing Architectural styles, object oriented system analysis and its types of designs	
СОЗ	Students will be capable to implement Software development	
CO4	Students will lea	rn Software testing and its quality

Name of the Course Course Code		Software Engineering Lab (Elective-I)
		CS525AP
CO1		acquiring knowledge about ols and models in software
CO2	Students will be different types of	able to design software using UML models

Name of the Course Course Code		Operating Systems (Elective-II)
		CS525B
CO1	At the end of the course students will be able to paraphrase t basic concepts of Operating Systems and its Structure	
CO2	At the end of the course students will be able to summarize the various Process Management Services of an OS and the problems that could arise due to Synchronization and their respective solutions suggested.	
CO3		
CO4	At the end of the course students will be able to Discuss the process of Memory and Virtual Memory Managements.	

Name of the Course Course Code		Operating Systems Lab (Elective-II) CS525BP
CO2		able acquire knowledge on UNIX programs

Name	of the Course	Python
Course Code		SE525A
CO1	Acquire Knowledge on python programming features and develop applications using conditional and looping statemer	
CO2	Develop applications using functions, files and exception handling, list and tuples	

Name of the Course		Libre Office Calc (GE-I)			
Cours	se Code				
CO1	Work with multiple worksheets & workbook Protect data an Import and export from various database applications.				
CO2	Analyze data and validation method	d implement functions, formula and data			

Name of the Course Course Code		Basics of Python (GE-II)		
CO1   Acquire Knowledg		ge on python programming features and ons using conditional statements.		
CO2	Develop applicat	ions using looping statements and functions.		

Name	of the Course	Computer Networks			
Course Code		CS625			
CO1 Students would have learnt fundamental concepts and terminology in networking and seven layers and OSI network model					
CO2 Students would have learnt different interfaces along with functionalities and know about multiplexing techniques(FDM,TDM) and Error Detection Methods and correction methods					
CO3 Students would have learnt how data link layer is impact to at Local Area Networks and get familiarized with flow and error control mechanisms at data link layer					
CO4	Students would	have learnt Routing Algorithms			

Name of the Course Course Code CO1   Students will be a		Computer Networks Lab CS625P			
		CO2	Students will be	able to design simple chatting applications	

Name of the Course		Web Technologies (Elective-I)	
Course Code		CS625A	
		able to design static web pages	

CO2	Students can create web pages using CSS
CO3	Students will be able to design dynamic web program
CO4	Student will be more interaction with web browsers, web servers and case study

Name of the Course		Web Technologies Lab (Elective-I)			
Cour	se Code	CS625AP			
CO1	Student will be able to design static web pages using style sheets with more formatting features				
CO2	Student will be a HTML and Scrip	able to design dynamic web pages using CSS, ting language			

Name of the Course		GUI Programming using JAVA			
Cour	se Code	SE625A			
		levelop programs using applets and event isms in applets			
CO2	Students will be	develop programs using swing components			

Name of the Course Course Code		.NET SE625B		
CO2	Capable to devel	op Windows form based application with tivity		

Name of the Course Course Code		Multimedia (GE-I)		
CO1	O1 Students will be able to create, edit and modify simple in files with various extensions.			
CO2	Students will be for selected page	able to implement filter and graphical effects		

Name of the Course		E-Commerce (GE-II)		
Cour	se Code			
CO1	Student will be able to analyse the impact of E-Commerce of Business Models and EDI			
CO2		able to analyze the Risks of Insecure Systems, at and Online Payment System		

# Course Matrix

Name of the	Program	: BSC MS	cs								
Name of the	Course:	Different	ial Equa	tions and	d Group t	heory	Course	e Code:	MT 121		
Semester: I							Year:1 Batch: 2019-22				
Academic Year:2019-20											
	Program Outcomes					Program Specific Outc				Outcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	2	2	1	1	2	3	3	2	3
CO2	3	1	1	2	2	2	1	2	3	2	3
соз	3	2	1	2	3	1	1	2	3	3	3
CO4	3	2	2	2	3	1	2	2	3	3	3
	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	2.5	3

Name of the	Course:	Different	ial Equa	ions and	Group t	heory	Course	Code:	MT 121P		
Semester: I							Year:1				
Academic Y	ear: 2019	-20					Batch:	2019-2	2		
			F	rogram (	Outcomes				Progra	am Specific	Outcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	2	2	1	1	2	3	3	3	3
CO2	3	1	1	2	2	2	1	2	3	3	3
CO3	3	2	1	2	3	1	1	2	3	3	3
CO4	3	2	2	2	3	1	2	2	3	3	3
	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3

Name of the Calculus	Course:	Differe	ntial Eq	uations	and Diffe	rential		Course Co	de: MT 22	1	
Semester: I	I							Year:1			
Academic Y	ear: 201	9-20						Batch: 201	9-22		
				Program	n Outcom	ies			Progra	m Specific (	Outcomes
COs/POs	s/POs PO1 PO2 PO3 PO4					P06	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	2	2	1	1	2	3	3	2	3
CO2	3	2	1	2	2	2	1	2	3	2	3
CO3	3	1	1	2	3	1	1	2	3	3	3
CO4	3	2	2	2	3	1	2	2	3	3	3
	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	2.5	3

Name of the Calculus	e Course:	Differe	ntial Eq	uations	and Diff	ferential		Course	e Code: M'	Г 221Р	
Semester: I	I							Year:1			
Academic Y	ear: 2019	9-20						Batch	2019-22		
				Program	Outcome	es			Progra	ım Specific Ou	itcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	2	2	1	1	2	3	3	3	3
CO2	3	2	1	2	2	2	1	2	3	3	3
соз	3	1	1	2	3	1	1	2	3	3	3
CO4	3	2	2	2	3	1	2	2	3	3	3
	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3

Name of the EQUATIONS	Course: RI	NG THEOR	RY&PART	IAL DIFFI	ERENTIAL		Cour	se Cod	e: MT 321	l .	
Semester: III							Year:	11			
Academic Ye	ar: 2020-2	1					Batcl	h: 2019	-22		
			Pr	ogram Ou	tcomes				Program	Specific C	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	1	2	1	-	1	3	3	1	1
CO2	3	3	1	3	2	1	2	3	3	1	3
CO3	3	2	1	2	1	1	2	3	3	2	2
CO4	3	2	1 ==	2	1	1	3	3	3	2	2
	3	2.25	1	2.25	1.25	1	2	3	3	1.5	2

Name of the EQUATIONS	Course: RI	NG THEOR	RY&PART	IAL DIFFI	ERENTIAL		Cour	se Cod	e: MT 321	P	
Semester: III							Year:	п			
Academic Ye	ar: 2020-2	1					Batcl	h: 2019	9-22		
			Pr	ogram Ou	tcomes		-	,	Program	Specific C	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	1	2	1	0	1	3	3	1	1
CO2	3	3	1	3	2	1	2	3	3	1	3
CO3	3	2	1	2	1	1	2	3	3	2	2
CO4	3	2	1	2	1	1	3	3	3	2	2
	3	2.25	1	2.25	1.25	1	2	3	3	1.5	2

Name of th	e Course	: THEOF	Y OF E	QUATIO	NS		Course	e Code: 8	EC 321			
Semester: 1	п						Year: II					
Academic Y	ear: 202	0-21					Batch	2019-2	2			
			P	rogram	Outcome	es			Program	n Specific O	itcomes	
COs/POs	Os/POs PO1 PO2 PO3 PO4 PO5 PO							PO8	PSO1	PSO2	PSO3	
COI							1	3	3	2	3	

Name of th	e Cour	se: REA	L ANAI	YSIS			Cours	e Code:	MT421		
Semester:	IV						Year:	II			
Academic	Year: 20	020-21					Batch	: 2019-	22		
				Program	n Outco	mes				Program Specifi	c Outcomes
COs/POs	PO1 PO2 PO3 PO4 PO5 PO6						PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	1	1	1	1	1	3	3	0	1
CO2	3	1	1	2	1	1	2	3	3	0	11
соз	3	1	1	2	1	2	2	3	3	1	3
CO4								3	3	0	2
	3	1	1	1.75	1	1.5	1.75	3	3	1	1.75

Name of th	e Course	: REAL	ANALYS	IS			Course	Code:M	T421P		
Semester: l	v						Year: I	1			
Academic Y	ear: 202	20-21					Batch:	2019-22	2		
			F	rogram	Outcome	es			Program	n Specific O	utcomes
COs/POs	PO1 PO2 PO3 PO4 PO5 PO6						PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	1	1	1	1	1	3	3	0	1
CO2	3	1	1	2	1	1	2	3	3	0	1
СОЗ	3	1	1	2	1	2	2	3	3	1	3
CO4								3	3	0	2
	3	1	1	1.75	1	1.5	1.75	3	3	1	1.75

Name of th	e Frogran	n. bsc	Maca				_					
Name of th	e Course	: LOGIC	AND SE	TS			Course	e Code: 8	SEC 421			
Semester: 1	v						Year: II					
Academic Y	ear: 202	0-21					Batch	2019-2	2			
			P	rogram	Outcome	es			Prograi	n Specific O	utcomes	
COs/POs	COs/POs PO1 PO2 PO3 PO4 PO5 PO6								PSO1	PSO2	PSO3	
CO1	3	1	1	2	1	1	3	3	2	3		

Name of t	he Cour	se: LINI	EAR AL	GEBRA			Cours	se Code	:MT521		
Semester:	v						Year:	Ш			
Academic	Year:20	21-22					Batch	: 2019	-22		
	Progra	am Outo	comes						Pro	gram Specific O	utcomes
COs/POs	PO1 PO2 PO3 PO4 PO5 PO6					PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	1	1	1	0	1	3	3	1	3
CO2	3	2	1	2	1	0	2	3	3	2	3
CO3	3	3	2	2	1	1	2	3	3	2	3
CO4	3	1	1	1	1	0	1	3	3	1	2
	3	1.75	1.25	1.5	1	1	1.5	3	3	1.5	2.75

Name of th	e Cour	se: LINI	EAR AL	GEBRA			Cours	e Code	:MT521	P	
Semester:	v						Year:	ш			
Academic	Year: 2	021-22					Batch	: 2019	22		
	Program Outcomes									Program Specifi	c Outcomes
COs/POs	PO1 PO2 PO3 PO4 PO5 PO6					PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	1	1	1	0	1	3	3	1	3
CO2	3	2	1	2	1	0	2	3	3	2	3
CO3	3	3	2	2	1	1	2	3	3	2	3
CO4	04 3 1 1 1 1							3	3	1	2
	3	1.75	1.25	1.5	1	1	1.5	3	3	1.5	2.75

Name of th	e Course	: VECT	ORS CA	LCULUS			Cours	e Code:I	MT521 A		
Semester:	v						Year:	Ш			
Academic Y	Year: 202	21-22					Batch	: 2019-2	2		
			F	rogram	Outcome	es			Program	n Specific O	utcomes
COs/POs	PO1 PO2 PO3 PO4 PO5 PO6						PO7	PO8	PSO1	PSO2	PSO3
CO1	3							1	3	2	3
CO2	3	2	1	2	2	2	1	2	3	2	3
СОЗ	3	1	1	1	1	1	1	2	3	2	3
CO4	3	2	2	2	1	1	2	3	3	2	3
	3	1.5	1.5	1.75	1.25	1.25	1.5	2	3	2	3

Name of th	e Cours	se: VEC	TORS (	CALCUL	US		Cours	e Code	MT521	AP	
Semester:	v						Year:	Ш			
Academic '	Year: 20	021-22					Batch	: 2019	22		
				Prograi	n Outco	mes				Program Specifi	c Outcomes
COs/POs	PO1 PO2 PO3 PO4 PO5 PO6						PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	2	2	1	1	2	1	3	3	3
CO2	3	2	1	2	- 2	2	1	2	3	3	3
соз	3	1	1	1	1	1	1	2	3	3	3
CO4	3	2	2	2	1	1	2	3	3	3	3
	3	1.5	1.5	1.75	1.25	1.25	1.5	2	3	3	3

Name of th	e Cours	se: NUM	BER T	HEORY	7		C	ourse Co	de: SEC	521		
Semester:	v						Y	Year: III				
Academic	Year: 20	021-22					В	atch: 20	19-22			
				Progra	m Outc				Program Specifi	c Outcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO7	PO8	PSO1	PSO2	PSO3		
CO1	3	2	2	2	1	1	1	3	3	2	3	

Name of th	ie Progr	am: bo	C MSC	,	_							
Name of th	ne Cours	se: GEN	ERIC E	LECTIV	Æ -I		Cours	e Code	GE 521			
Semester:	v						Year: III					
Academic	Year: 20	021-22					Batch	: 2019-	22			
				Program	n Outco	mes				Program Specifi	c Outcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	P08	PSO1	PSO2	PSO3	
CO1	201 3 2 3 2 1								3	2	3	

Name of th	e Course	: NUME	RICAL	ANALYS	IS		Cours	e Code:	MT 621		
Semester:	VI						Year:				
Academic Y	Year: 202	21-22		2			Batch	: 2019-2	2		
			1	Program	Outcome	es			Program	n Specific O	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	2	2	1	1	2	1	3	2	3
CO2	3	2	1	2	2	2	2	2	3	2	3
CO3	3	2	1	1	1	1	2	2	3	2	3
CO4	3	2	2	2	1	1	2	3	3	2	3
	3	2	1.5	1.75	1.25	1.25	2	2	3	2	3

Name of th	e Course	: NUME	RICAL	ANALYS	IS		Cours	e Code:	MT 621P		
Semester:	VI						Year:	Ш			
Academic '	Year: 202	21-22					Batch	2019-2	2		
			I	rogram	Outcom	es			Program	n Specific O	utcomes
COs/POs	PO1 PO2 PO3 PO4 PO5 PO6						PO7	PO8	PSO1	PSO2	PSO3
CO1	3 2 2 2 1 1						2	1	3	3	3
CO2	3	2	1	2	2	2	2	2	3	3	3
CO3	3	2	1	1	1	1	2	2	3	3	3
CO4	3	2	2	2	1	1	2	3	3	3	3
	3	2	1.5	1.75	1.25	1.25	2	2	3	3	3

Name of th	e Course	: SOLID	GEOME	TRY			Cours	e Code:N	IT621/A		
Semester:	VI						Year:	Ш			
Academic Y	Year: 202	21-22					Batch	2019-2	2		
			P	rogram (	Outcome	es			Program	n Specific O	utcomes
COs/POs	PO1	PO2	РО3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	1	3	1	1	2	3	3	1	2
CO2	3	2	1	3	1	1	2	3	3	1	2
CO3	3 2 1 3 1 1						2	3	3	1	2
	3	1.67	1	3	1	1	2	3	3	1	2

Name of th	e Course	: SOLID	GEOME	TRY			Course	e Code:N	T621/AP		
Semester:	VI						Year:	ш			
Academic Y	rear: 202	21-22					Batch	2019-2	2		
			P	rogram	Outcome	es			Program	n Specific O	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	1	3	1	1	2	3	3	1	2
CO2	3	2	1	3	1	1	2	3	3	1	2
CO3	3	2	1	3	1	1	2	3	3	1	2
	3	1.67	1	3	1	1	2	3	3	1	2

Name of th	c riogran	II. DOC I	11000								
Name of th	e Course	GRAPH	THEOR	RY			Cours	se Code	e: SEC 6	21	
Semester: \	VI						Year:	Ш			
Academic Y	ear: 202	1-22					Batch	n: 2019	-22		
			P	rogram	nes				Program Specifi	c Outcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	2	2	1	1	1	2	3	2	3

Name of th	e Cours	se: GEN	ERIC E	LECTIV	Æ-II		С	ourse Co	de: GE	621	
Semester:	VI						Y	ear: III			
Academic	Year: 20	021-22					В	atch: 20	19-22		
				Progra	m Outco				Program Specifi	c Outcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO7	PO8	PSO1	PSO2	PSO3	
CO1	3	1	3	2	2	1	1	3	3	2	3

Name of the	e Course:	Program	mming i	n 'C'			Course	code: C	S125		
Semester: I							Year: 1	1	7		
Academic Y	ear: 201	9-20					Batch:	2019-22	2		
			P	rogram (	Outcome	es			Program	n Specific O	atcomes
COs/POs	Os PO1 PO2 PO3 PO4 PO5 PO6					PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	1	1 1 0 1					1	0	0	0
CO2	3	3	2	2	1	1	1	2	2	1	3
CO3	3	3	2	2	1	2	2	2	2	2	3
CO4	3	3	3	2	1	2	2	3	2	2	3

Name of th	e Course	: Progr	amming	in 'C' L	ab		Cours	e Code:	CS125P		
Semester:	1						Year:	I			
Academic '	Year: 20	19-20					Batch	: 2019-2	22		
	Progra	am Outc	omes					Program	Specific Ou	tcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSO3
CO1	3 3 2 2 1							3	2	2	3
CO2	3	3	3	3	1	3	2	3	1	2	3

Name of th	e Course: P	rogrammin	g in C+	+			Cours	e Code:	CS225			
Semester:	п						Year:	1				
Academic 1	rear: 2019-2	20					Batch	: 2019-2	22			
	Program	Outcomes							Program	Specific O	utcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1	2	1	2	0	1	1	2	2	2	0	2	
CO2	3	2	2	2	1	1	2	3	2	0	2	
CO3			2	2	1	1	1	3	0	0	3	
CO4	1	1	1	1	1	1	2	2	0 0 2			

Name of th	e Cour	se: Pro	gramm	ing in C	++ Lab		Cours	e Code	: CS2251	•	
Semester:	п						Year:	I			
Academic	Year: 20	019-20					Batch	: 2019	-22		
	Progra	am Outo	comes						Pr	ogram Specific	Outcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	01 3 3 2 1 1							2	2	1	3
CO2	3	2	1	1	1	2	2	2	1	3	

Name of th	e Course	: Data S	Structur	es			Course	e Code: (	CS325		
Semester: 1	11						Year: 1	п			
Academic Y	ear: 202	0-21					Batch:	2019-2	2		
			F	rogram	Outcome	es			Program	n Specific O	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	2	2	2	3	2	3
CO2	3	3	3	3	2	2	2	2	3	2	3
CO3	3	3	3	3	2	2	2	2	3	2	3
CO4	3	3	3	3	2	2	2	2	3	2	3

Name of the	Course:	Data St	ructures	s Using (	C++ Lab		Cours	e Code:	CS325P		
Semester: I	п						Year:	п			
Academic Y	ear: 2020	)-21					Batch	2019-2	2		
			P	rogram (		Program Specific Outcomes					
COs/POs	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSO3
CO1	201 3 3 3 3 2 2								2	1	3
CO2	3	3	3	3	2	2	2	2	2	1	3

Name of th	e Course	PC Mai	intenand	ce			Course	e Code: 8	E325A		
Semester: I	II						Year:	I			
Academic Y	ear: 202	0-21					Batch	2019-2	2		
			P	rogram	Outcome			Program	n Specific O	utcomes	
COs/POs	PO1	PO2	РО3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	3	2	1	2	3	0	2	3
CO2	3	3	2	3	2	1	2	3	0	2	3

Name of the	e Course:	Databa	se Mana	gement	Systems	3	Cours	e Code:	CS425		
Semester: I	v						Year:	п			
Academic Y	ear: 2020	)-21					Batch	: 2019-2	22		
			P	rogram (	utcomes	3			Progran	Specific O	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	1	3	2	2	3	3	1	1	3
CO2	3	3	3	3	2	2	3	3	1	1	3
CO3	3	2	1	2	1	2	3	2	2	1	3
CO4	3	1	1	2	2	2	2	3	2	1	3

Name of th	e Course	Datab	ase Mar	nagemen	nt Syste	ms Lab	Cour	se Cod	e: CS42	25P	
Semester: I	v						Year: II				
Academic Y	ear: 202	0-21					Batcl	n: 2019	9-22		
				Program	Outcom				Program Specifi	c Outcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
201 3 3 3 3 3 3							2	3	2	0	3
CO2	3	3	3	3	3	3	2	3	2	0	3

Name of the	Course: L	ibre Offi	ce Calc a	nd Libre	Office B	lase	Cours	se Code	SE425A		
Semester: I	7						Year:	II			
Academic Y	ear: 2020-	21					Batch	: 2019-	22		
			Pı	ogram O	,		Program	Specific O	utcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	1	2	2	1	0	2	3	2	2	3
CO2	2	1	2	2	1	0	2	3	2	2	3

Name of th	e Course	: Progr	amming	in Java			Course	e Code: (	CS525		
Semester:	V						Year:	ш			
Academic Y	ear: 202	1-22					Batch	2019-2	2		
			F	rogram	Outcome	es			Program	n Specific O	itcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	2	2	2	2	2	3	1	1	2
CO2	3	3	3	3	2	2	2	2	2	1	3
CO3	2	3	3	3	2	2	2	2	2	1	3
CO4	3	3	3	3	2	2	3	3	2	1	3

Name of th	e Course	Progra	amming	in Java	Lab		Course	Code: (	CS525P		
Semester: \	7						Year: 1	ш			
Academic Y	ear: 202	1-22					Batch:	2019-22	2		
			F	rogram	Outcome			Program	n Specific O	utcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	3	2	2	2	2	2	1	3
CO2	3	3	2	3	2	2	2	2	2	1	3

Name of the	Course:	Operat	ing Syst	ems (Ele	ctive-II)		Cours	e Code	CS525A		
Semester: V			8 - 3				Year:		C5525A		
Academic Y	ear: 2021	-22					Batch	: 2019-2	22		
			P	rogram (	outcomes	3			Progran	Specific O	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	1	2	2	1	2	3	0	1	2
CO2	3	3	2	3	3	2	2	3	2	1	3
соз	3	3	2	2	2	2	2	2	1	1	2
CO4	2	2	2	2	2	1	1	2	0	1	2

Name of th	e Course	: Opera	ting Sy	stems L	ab (Elec	tive-II)	Cour	se Cod	e: CS52	25AP	
Semester:	7						Year:	ш			
Academic Y	ear: 202	1-22					Batcl	h: 2019	9-22		
				Program	Outcom				Program Specifi	c Outcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2		1	2	2	0	2			
CO2	2	3	2	2	2	1	2	3	2	0	2

Name of th	e Course	Python	n				Course	Code: 8	SE525A		
Semester: \	V						Year: 1	п			
Academic Y	ear: 202	1-22					Batch:	2019-2	2		
			P	rogram	Outcome			Program	n Specific O	utcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	2	2	2	2	2	3
CO2	3	3	3	3	3	2	2	2	2	2	3
	3	3	3	3	3	2	2	2	2	2	3

Name of th			-									
Name of th	e Course	: Libre	Office C	alc (GE	- I)		Course	e Code:				
Semester:	7						Year: III					
Academic Y	ear: 202	1-22				Batch	2019-2	2				
			P	rogram	Outcome			Program	n Specific O	utcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSO3	
CO1	2	1	2	2	1	0	2	3	2	2	3	
CO2	2	1	2	2	1	0	2	3	2	2	3	

Name of th	e Prograi	n: B.Sc	(CS)								
Name of th	e Course	: Basics	of Pyth	non (GE	-II)		Course	e Code:			
Semester: \	V						Year:	Ш			
Academic Y	ear: 202	1-22					Batch	2019-2	2		
	Program Outcomes							Program Specific Outcom			utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	2	2	2	2	2	3
CO2	3	3	3	3	3	2	2	2	2	2	3

Name of th	e Course	: Comp	uter Ne	tworks			Course	e Code: (	28625		
Semester: \	VI						Year:	ш			
Academic Y	ear: 202	1-22					Batch	2019-2	2		
			P	rogram	Outcome	es			Progran	n Specific O	atcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	2	1	1	1	1	2	2	1	3
CO2	3	2	2	1	1	2	1	2	2	1	1
соз	3	2	2	2	2	1	1	1	2	2	2
CO4	3	2	2	2	2	2	2	2	2	2	2

Name of th	e Course	: Comp	uter Ne	tworks l	Lab		Course	e Code: (	CS625P		
Semester: V	71						Year:	ш			
Academic Y	ear: 202	1-22					Batch:	2019-2	2		
			P	rogram	Outcome			Program	n Specific O	utcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	2	1	1	1	1	1	1	1	1	3
CO2	2	2	1	1	1	1	1	1	1	1	3

Name of the	Course:	Web To	echnolog	gies (Ele	ctive-I)		Course	e Code:	CS625A		
Semester: V	7I						Year:	Ш			
Academic Y	ear: 202	1-22					Batch	2019-2	2		
			P	rogram (	outcome	S			Progran	Specific O	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO:
CO1	3	3	2	3	1	1	2	3	0	0	2
CO2	3	3	2	3	2	1	3	3	0	0	3
CO3	3	3	2	3	2	1	3	3	2	0	3
CO4	3	2	3	2	2	1	2	2	0	0	3

Name of th	e Course	: Web 7	rechnol	ogies La	b (Elect	ive-I)	Cours	se Code	: CS62	5AP	
Semester:	VI .						Year:	Ш			
Academic Y	ear: 202	21-22					Batch	n: 2019	-22		
				Program	Outcon	nes				Program Specifi	c Outcomes
COs/POs	PO1	PO2	РО3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	2	3	3	1	0	3
CO2	3	3	3	3	3	2	3	3	0	0	3

Name of the	Course:	GUI Pr	ogramm	ing usin	g JAVA		Cours	e Code:	SE625A		
Semester: V	п						Year:	Ш			
Academic Y	ear: 202	1-22					Batch	2019-2	2		
			P	rogram (	Outcome			Progran	Specific O	utcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	2	2	2	2	1	3
CO2	3	3	3	3	2	2	2	2	2	1	3

Name of th	e Prograi	n: b.sc	(CS)								
Name of th	e Course	.NET					Course	Code: 8	SE625B		
Semester:	Semester: VI										
Academic Y	ear: 202	1-22					Batch	2019-2	2		
	Р	rogram	es			Program	n Specific O	utcomes			
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3

CO1	1	2	3	2	2	1	2	2	1	0	2
CO2	2	2	3	3	2	1	2	2	1	0	3

as	5000		D. 570								
Name of th	e Cours	se: Mult	imedia	(GE - I	)		Cours	e Code:			
Semester:	VI						Year:	Ш			
Academic	Year: 20	21-22					Batch	: 2019-	22		
		,		Program	m Outco	mes				Program Specifi	c Outcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2 2 2 2 1 1						2	2	1	1	3
CO2	2	3	2	3	1	1	3	3	1	1	3

Name of th			1/								
Name of th	e Cours	se: E-Co	mmerc	e (GE-	II)		(	ourse C	ode:		
Semester:	VI						Y	Year: III			
Academic	Year: 20	21-22					E	atch: 20	19-22		
				Program	n Outco	omes				Program Specifi	c Outcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2 1 1 2 2 1							2	0	0	1
CO2	2	1	2	2	1	1	1	2	0	0	2

# Statistics:

Name of the	Program	B. Sc(M	SCs)								
Name of the	Course: 1	Descripti	ve Stati	stics and	Probabi	lity	Cours	e Code	: ST122		
Semester: I							Year:	I			
Academic Y	ear: 2019	-20					Batch	: 2019	-22		
			Pı	ogram O	utcomes				Program	Specific C	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	3	1	1	3	3	2	3	2
CO2	3	3	2	3	1	1	3	3	3	3	2
CO3	3	3	1	3	2	2	2	3	3	3	2
CO4	3	3	2	2	2	1	1	2	3	3	2

Name of th				ood,								
Name of th	e Course:	Desci	riptive	Statisti	cs and P	robabili	ty	Cou	rse Code:	ST122P		
Semester:								Year	r: I			
Academic Y	ear: 2019	9-20						Bate	h: 2019-	22		
				Pro	gram Ou	itcomes				Program S	pecific Ou	tcomes
COs/POs	PO1	P	02	PO3	PO4	PO5	PO6	PO	7 PO8	PSO1	PSO 2	PSO3
CO1	3		3	3	2	1	1	2	3	2	3	3
CO2	3		3	3	3	1	1	2	3	2	3	3
	e Course:				tions				: ST222			
Name of the	e Course:	Proba			tions		Year: I					
Name of the	e Course:	Proba			tions							
Name of the	e Course:	Proba		Distribu	tions	omes	Year: I			Program Sp	ecific Out	comes
Name of the Semester: I Academic Y	e Course:	Proba		Distribu		omes PO6	Year: I			Program Sp	ecific Out	comes PSO3
Name of the Semester: I Academic Y	Course:	Proba	bility 1	Progr	am Outc	1	Year: I Batch:	<b>2019</b>	-22		ecific Out	
Name of the Semester: I Academic Y COs/POs	e Course:	Proba	PO 3	Progr.	am Outc	PO6	Year: I Batch:	2019 PO 8	PSO1	PSO2	ecific Out	PSO3
Name of the Name of the Semester: I Academic Y COs/POs CO1 CO2	PO1 3	PO 2 2	PO 3	Progra	am Outco	PO6	Year: I Batch:	2019 PO 8	PS01 3	PSO2	ecific Out	PSO3

Name of th	e Cours	se: Prob	ability	Distrib	utions		Cours	e Code	ST222P					
Semester:	II						Year:	I						
Academic '	Year: 20	019-20					Batch: 2019-22							
				Program	n Outco	omes			Prog	ram Specific O	utcomes			
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3			
CO1	3 3 2 3 2				1	2	3	3	3	3				
CO2	3	3	2	3	2	1	2	3	3	3	3			
CO3	3	3	2	3	2	1	2	3	3	3				

Name of the	Course:	Statistic	al Metho	ds and l	nference	e-I	Cours	e Code	: ST322		
Semester: I	п						Year:	п			
Academic Y	ear: 2020	-21					Batch	: 2019	22		
			Pr	ogram O				Program	Specific Ou	tcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSOS
CO1	3	3	1	3	2	1	2	3	3	3	2

CO2	3	3	2	3	2	2	3	3	3	3	2
соз	3	2	2	2	2	1	2	3	3	3	1
CO4	3	2	2	2	2	1	2	3	3	3	1

Name of the	Course:	Statistic	al Meth	ods and	Inferenc	e-I	Cours	e Code:	ST322P		
Semester: I	п						Year:	11			
Academic Y	ear: 2020	-21					Batch	: 2019-	22		
			Pr	ogram O	utcomes	,		Program	Specific O	utcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	2	1	1	2	3	3	3	3
CO2	3	3	3	3	2	2	2	3	3	3	3

Name of th	ne Cour	se: Stat	istical	Inferen	ce-II		(	Course C	ode: ST4	122	
Semester:	IV						3	ear: II			
Academic	Year: 20	020-21					I	Batch: 20	019-22		
COs/POs		1		Progra	m Outco	omes				Program Specifi	c Outcomes
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	1	2	2	2	2	3	2	3	1
CO2	3	3	1	3	2	1	3	3	3	3	2
CO3	3	3	2	3	2	1	3	3	3	3	2
CO4	3	3	2	3	2	1	3	3	3	3	1

Name of th	e Course	: Statist	tical Inf	erence-	II		Course	e Code:	ST422P			
Semester: 1	v						Year:	II				
Academic Y	rear: 202	20-21					Batch	2019-2	22			
COs/POs		,	P	rogram	Outcome	es	Program Specific Outcomes					
	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSOS	
CO1	3	3	2	3	3	2	3	3	2	3	3	
CO2	3	3	2	3	3	2	3	3	2	3	3	
CO3	3	3	2	3	3	2	3	3	2	3	3	

Name of th	e Course	Applied	1 Statist	ics-I			Course	Code: S	T522		
Semester: \	7						Year: I	II			
Academic Y	ear: 202	1-22					Batch:	2019-22	2		
			P	rogram	Outcome	es			Program	n Specific Ou	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	1	2	2	2	2	3	2	3	2
CO2	3	3	1	2	2	2	2	3	3	3	2
соз	3	3	2	3	2	1	2	3	3	3	2
CO4	3	3	2	3	2	2	2	3	3	3	2

Name of the	e Course	: Applie	Statis	ties-I			Course	Code: 8	ST522P				
Semester: \	7						Year: I	Ш					
Academic Y	rear: 202	1-22					Batch:	2019-2	2	ogram Specific Out			
			P	rogram	Outcome	es			Program	n Specific O	atcomes		
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3		
CO1	3	2	2	2	2	11	2	3	3	3	1		
CO2	3	2	2	2	2	1	2	3	3	3	1_		
CO3	3	3	3	3	3	2	3	3	3	3	3		
CO4	3	3	3	3	3	2	3	3	3	3	2		

Name of the	Course: S	tatistica	l quality	Control	and Relia	ability	Cours	se Code	e: ST522A		
Semester: V							Year:	Ш			
Academic Ye	ear: 2021-	22					Batch	n: 2019	-22		
			Pr	ogram Ot	utcomes		,		Program	Specific O	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	3	1	2	3	3	3	3	1
CO2	3	2	2	2	2	2	2	3	2	3	1_
CO3	3	3	2	2	2	2	3	3	2	3	2
CO4	3	3	2	2	2	2	3	3	2	3	2

Name of th	e Course:	Statistic	al qualit	y Contro	l and Rel	liability	Cours	se Code	e: ST5	22AP	
Semester: \	V						Year:	ш			
Academic Y	ear: 2021	-22					Batcl	n: 2019	9-22		
				Program (	Outcomes	S			P	rogram Specific (	Outcomes
Cos/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	2	3	3	3	3	3
CO2	3	2	2	3	2	2	3	3	3	3	2
CO3	3	3	2	3	3	1	3	3	3	3	3
CO4	3	3	3	3	3	1	3	3	3	3	3

Name of th	e Cours	e: Appl	ied Stat	istics-I	I		Cours	e Code:	ST622			
Semester:	VI						Year:	Ш				
Academic '	Year: 20	21-22					Batch: 2019-22					
				Prograi	n Outco	mes			Prog	ram Specific Ou	itcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1	3	3	2	3	2	2	3	3	3	3	1	
CO2	3	3	2	3	2	2	3	3	3	3	1	
соз	3	3	1	2	2	2	2	3	3	3	1	
CO4	3	3	2	2	2	2	2	3	3	3	1 .	

Name of th	e Cours	e: Appl	ied Sta	tistics-	II		Cours	e Code:	ST622P		
Semester:	VI						Year:	Ш			
Academic	Year: 20	21-22					Batch	: 2019-	22		
				Prograi	n Outco	omes			Pro	gram Specific O	utcomes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	1	3	3	3	3	3
CO2	3	3	3	3	2	2	3	3	3	3	3
CO3	3	2	2	3	2	2	2	3	3	3	3
CO4	3	3	2	3	3	2	2	3	3	3	2

Name of the Program: B. Sc(MSCs)		
Name of the Course: Operations Research	Course Code: ST622A	
Semester: VI	Year: III	

Academic	Year: 2	2021-22	2				Batch	1: 201	9-22				
		,		Progra	m Outo	omes				Program S	pecific Out	comes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8		PSO1	PSO2	1	PSO3
CO1	3	3	2	3	2	2	3	3		3	3		2
CO2	3	3	2	3	2	1	3	3		3	3		2
соз	3	3	2	3	1	1	3	3		3	3		2
CO4	3	3	2	3	1	1	3	3		3	3		2
Semester: Academic		021-22	2					ar: III		22			
Academic	Year: 2	021-22	2	626	- 100			itch: 2	2019-2		500 Tail		
				Prog	gram O	utcome	S			Progr	am Specific	Outc	omes
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	P	07 F	809	PSO1	P	SO2	PSO3
CO1	3	3	2	3	2	2		3	3	3		3	3
CO2	3	3	2	3	2	2	3	3	3	3		3	3
соз	3	3	2	3	1	2		3	3	3		3	3
CO4	3	3	2	3	1	2		3	3	3		3	3

Name of the Progra	m: B. Sc(MSCs)						-					
Name of the Course	: Data Analysis	with F	I- 5				C	ourse (	Code:	SE32	2	
Semester: III							Y	ear: II				
Academic Year: 202	21-22						В	atch: 2	019-	22		
			Pro	gram	Outco	mes			F	rogran	1 Specific	Outcomes
COs/POs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	P	O PO		PSO 1	PSO2	PSO3
CO1	3	3	2	2	2	2	2	2 3		1	3	3
CO2	3	3	3	3	2	2	1	3 3		2	3	3
Name of the Progra	m: B. Sc(MSCs)											
Name of the Course	: Data Analysis	with F	II- S				_	Cour	se Co	de: SE	422	
Semester: IV								Year:	II			
Academic Year: 202	21-22							Batcl	1: 20	19-22		
				Progra	am Ou	tcomes	S			Prog	ram Spec	ific Outcomes
COs/POs	P(		35.1	Z	750	200	PO 6	PO 7	PO 8	PSO 1		PSO3
CO1	3	3	3	2 2	2	2	2	2	3	2	3	3

Name of th	e Course	: Data A	nalysis	with SP	SS -I		Course	e Code: S	SE522		
Semester: \	V						Year:	Ш			
Academic Y	rear: 202	1-22					Batch	2019-2	2		
			P	rogram	Outcome			Program	n Specific O	utcomes	
COs/POs	PO1	PO2	РО3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	1	2	2	3	3	1	3	3
CO2	3	3	3	3	2	2	3	3	1	3	3

Name of th	e Course	: Data A	nalysis	with SP	SS -II		Course	Code: 8	E622		
Semester: \	VI.						Year:	ш			
Academic Y	ear: 202	1-22					Batch	2019-2	2		
			P	rogram (	Outcome			Program	n Specific O	itcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	2	3	3	2	3	3
CO2	3	3	3	3	2	2	3	3	2	3	3

Name of the	e Course	Data A	nalysis	with MS	Excel		Cours	e Code:	GE522		
Semester: \	7						Year:	ш			
Academic Y	ear: 202	1-22					Batch	2019-2	2		
			P	rogram (	Outcome			Progran	n Specific O	utcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	1	2	2	3	3	2	3	3
CO2	3	3	3	3	2	2	3	3	2	3	3

W C41							1 22				
Name of th	e Course	: Data A	nalysis	with SP	SS		Course	e Code: (	3E622		
Semester:	VI						Year:	ш			
Academic Y	ear: 202	1-22					Batch	2019-2	2		
			P	rogram	Outcome			Program	n Specific O	utcomes	
COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	2	3	3	1	3	3
CO2	3	3	3	3	2	2	3	3	1	3	3

# **Program Targets**

	Seme ster	Course			F	Program	Outcom	es	30			ram Spec	
			PO1	PO2	PO3	P04	PO5	P06	PO7	PO8	PSO1	PSO2	PSO3
1	1	En	0.25	0	0	0.5	3	2.5	3	3	1.5	0	0
2	1	SL	0	0	0	0.37	3	1.44	2.87	2.75	0.375	0	0.18
3	1	EVS	1	1	1.5	2	1	3	2	2.5	2	0	2
4	1	M	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3
5	1	M P	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3
6	1	Stat	3	3	1.75	2.75	1.5	1.25	2.25	2.75	2.75	3	2
7	1	StatP	3	3	3	2.5	1	1	2	3	2	3	3
8	1	Cs	2.75	2.5	2	2	1	1.67	1.5	2	2	1.67	3
9	1	Cs P	3	3	2.5	2.5	1	2.5	2	3	1.5	2	3
10	2	En	0.5	0	0	0.25	3	2.75	3	3	1.25	0	0
11	2	SL	0.06	0	0	0.25	3	1.5	2.87	2.75	1.18	0	0
12	2	GS	0	0	0	1	2	2	2	2	2	0	2
13	2	М	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3
14	2	MΡ	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3
15	2	Stat	3	2.75	1.75	2.75	1.75	1.5	2	2.75	3	3	2
16	2	Stat P	3	3	2	3	2	1	2	3	3	3	3
17	2	Cs	2.25	1.5	1.75	1.67	1	1	1.75	2.5	2	0	2.25
18	2	Cs P	3	3	2	1	1	1	2	2	2	1	3
19	3	En	0	0	0	0.8	3	2	3	3	1.2	0	0
20	3	SL	0	0	0	0	3	1.25	2.87	2.75	0.37	0	0.06
21	3	М	3	2.25	1	2.25	1.25	1	2	3	3	1.5	2
22	3	MΡ	3	2.25	1	2.25	1.25	1	2	3	3	1.5	2
23	3	SEC	3	2	1	1	1	1	1	3	3	3	3
24	3	Stat	3	2.5	1.75	2.5	2	1.25	2.25	3	3	3	1.5

25	3	Stat P	3	3	2.5	2.5	1.5	1.5	2	3	3	3	3
26	3	SEC	3	3	2.5	2.5	2	2	2.5	3	1.5	3	3
27	3	Cs	3	3	3	3	2	2	2	2	3	0	3
28	3	Cs P	3	3	3	3	2	2	2	2	2	1	3
29	3	SEC	3	2.5	2.5	3	2	1	2	3	0	2	3
30	4	En	0	0	0	0.2	3	2.2	3	3	0.6	0	0
31	4	SL	0	0	0	0.05	3	1.25	2.87	2.75	0.6	0	0
32	4	М	3	1	1	1.75	1	1.5	1.75	3	3	1.5	1.75
33	4	MΡ	3	1	1	1.75	1	1.5	1.75	3	3	1.5	1.75
34	4	SEC	3	1	1	2	1	1	1	3	3	2	3
35	4	Stat	3	2.75	1.5	2.75	2	1.25	2.75	3	2.75	3	1.5
36	4	Stat P	3	3	2	3	3	2	3	3	2	3	3
37	4	SEC	3	3	2.5	2.5	2	2	2.5	3	2.5	3	3
38	4	Cs	3	2	1.5	2.5	1.75	2	2.75	2.75	1.5	1	3
39	4	Cs P	3	3	3	3	3	3	2	3	2	0	3
40	4	SEC	2	1	2	2	1	0	2	3	2	2	3
41	5	М	3	1.75	1.25	1.5	1	1	1.5	3	3	2.75	2.75
42	5	МР	3	1.75	1.25	1.5	1	1	1.5	3	3	2.75	2.75
43	5	М	3	1.5	1.5	1.75	1.25	1.25	1.5	2	3	3	3
44	5	МР	3	1.5	1.5	1.75	1.25	1.25	1.5	2	3	3	3
45	5	SEC	3	2	2	2	1	1	1	3	3	3	3
46	5	GE	3	2	3	2	1	1	1	3	3	3	3
47	5	Stat	3	3	1.5	2.5	2	1.75	2	3	2.75	3	2
48	5	StatP	3	2.5	2.5	2.5	2.5	1.5	2.5	3	3	3	1.75
49	5	Stat	3	2.75	2	2.25	1.75	2	2.75	3	2.25	3	1.5
50	5	StatP	3	2.67	2.33	3	2.33	1.67	3	3	3	3	2.67
51	5	SEC	3	3	2.5	2	2	2	3	3	1	3	3
52	5	GE	3	3	2.5	2	2	2	3	3	2	3	3
53	5	Cs	2.75	2.75	2.75	2.75	2	2	2.25	2.5	1.75	1	2.75
54	5	Cs P	3	3	2	3	2	2	2	2	2	1	3
55	5	Cs	2.5	2.5	1.75	2.25	2.25	1.5	1.75	2.5	1.5	0	2.25
56	5	Cs P	2	2.5	2	2	1.5	0	1.5	2.5	2	0	2
57	5	SEC	2.5	2	2.5	2.5	2	2	2	2.5	2	2	3
58	5	GE	3	3	3	3	3	2	2	2	2	2	3
59	6	М	3	2	1.5	1.75	1.25	1.25	2	2	3	3	3
60	6	MΡ	3	2	1.33	1.67	1.33	1.33	2	2.33	3	3	3
61	6	М	3	1.67	1	3	1	1	2	3	3	1	2
62	6	МР	3	1.67	1	3	1	1	2	3	3	1	2

FIO	Targe		2.54	2.03	1.73	2.08	1.82	1.48	2.12	2.67	2.21	1.86	2.34
Pro	Tota	l utcome	192. 81	154. 25	131. 92	158. 26	138. 17	112. 81	160. 5	203. 33	168.34	141.6 7	177.9 2
76	6	GE	2	1.75	1.75	2.25	1.25	0	1.75	2.25	1	1	2.25
75	6	SEC	2.25	2.5	3	2.75	2	0	2	2	1.5	1	2.75
74	6	Cs P	3	3	3	3	3	2	3	3	1	0	3
73	6	Cs	3	2.75	2.25	2.75	1.75	1	2.5	2.75	2	0	2.75
72	6	Cs P	2	2	1	1	1	1	1	1	0	1	3
71	6	Cs	3	2	2	1.5	1.5	1.5	1.25	1.75	2	1.5	2
70	6	GE	3	3	2.5	2.5	2	2	3	3	1	3	3
69	6	SEC	3	3	2.5	2.5	2	2	3	3	2	3	3
68	6	StatP	3	3	2	3	1.5	2	3	3	3	3	3
67	6	Stat	3	3	2	3	1.5	1.25	3	3	3	3	2
66	6	StatP	3	2.75	2.5	3	2.25	1.75	2.5	3	3	3	2.75
65	6	Stat	3	3	1.75	2.5	2	2	2.5	3	3	3	1
64	6	GE	3	1	3	2	2	1	1	3	3	3	3
63	6	SEC	3	1	2	2	1	1	1	2	3	3	3

### **Program Attainment**

	Seme ster	Course			F	rogram	Outcom	es				ram Spec	
			PO1	PO2	РО3	PO4	PO5	P06	PO7	PO8	PSO1	PSO2	PSO3
1	1	En	0.25	0	0	0.5	3	2.5	3	3	1.5	0	0
2	1	SL	0	0	.0	0.37	3	1.44	2.87	2.75	0.375	0	0.18
3	1	EVS	1	1	1.5	2	1	3	2	2.5	2	0	2
4	1	М	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3
5	1	M P	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3
6	1	Stat	3	3	1.75	2.75	1.5	1.25	2.25	2.75	2.75	3	2
7	1	StatP	3	3	3	2.5	1	1	2	3	2	3	3
8	1	Cs	2.75	2.5	2	2	1	1.67	1.5	2	2	1.67	3
9	1	Cs P	3	3	2.5	2.5	1	2.5	2	3	1.5	2	3
10	2	En	0.5	0	0	0.25	3	2.75	3	3	1.25	0	0
11	2	SL	0.06	0	0	0.25	3	1.5	2.87	2.75	1.18	0	0
12	2	GS	0	0	0	1	2	2	2	2	2	0	2
13	2	M	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3
14	2	MΡ	3	1.5	1.5	2	2.25	1.25	1.5	2.25	3	3	3
15	2	Stat	3	2.75	1.75	2.75	1.75	1.5	2	2.75	3	3	2
16	2	Stat P	3	3	2	3	2	1	2	3	3	3	3
17	2	Cs	2.25	1.5	1.75	1.67	1	1	1.75	2.5	2	0	2.25

18	2	Cs P	3	3	2	1	1	1	2	2	2	1	3
19	3	En	0	0	0	0.8	3	2	3	3	1.2	0	0
20	3	SL	0	0	0	0	3	1.25	2.87	2.75	0.37	0	0.06
21	3	М	3	2.25	1	2.25	1.25	1	2	3	3	1.5	2
22	3	MΡ	3	2.25	1	2.25	1.25	1	2	3	3	1.5	2
23	3	SEC	3	2	1	1	1	1	1	3	3	3	3
24	3	Stat	3	2.5	1.75	2.5	2	1.25	2.25	3	3	3	1.5
25	3	Stat P	3	3	2.5	2.5	1.5	1.5	2	3	3	3	3
26	3	SEC	3	3	2.5	2.5	2	2	2.5	3	1.5	3	3
27	3	Cs	3	3	3	3	2	2	2	2	3	0	3
28	3	Cs P	3	3	3	3	2	2	2	2	2	1	3
29	3	SEC	3	2.5	2.5	3	2	1	2	3	0	2	3
30	4	En	0	0	0	0.2	3	2.2	3	3	0.6	0	0
31	4	SL	0	0	0	0.05	3	1.25	2.87	2.75	0.6	0	0
32	4	М	3	1	1	1.75	1	1.5	1.75	3	3	1.5	1.75
33	4	M P	3	1	1	1.75	1	1.5	1.75	3	3	1.5	1.75
34	4	SEC	3	1	1	2	1	1	1	3	3	2	3
35	4	Stat	3	2.75	1.5	2.75	2	1.25	2.75	- 3	2.75	3	1.5
36	4	Stat P	3	3	2	3	3	2	3	3	2	3	3
37	4	SEC	3	3	2.5	2.5	2	2	2.5	3	2.5	3	3
38	4	Cs	3	2	1.5	2.5	1.75	2	2.75	2.75	1.5	1	3
39	4	Cs P	3	3	3	3	3	3	2	3	2	0	3
40	4	SEC	2	1	2	2	1	0	2	3	2	2	3
41	5	M	3	1.75	1.25	1.5	1	1	1.5	3	3	2.75	2.75
42	5	МР	3	1.75	1.25	1.5	1	1	1.5	3	3	2.75	2.75
43	5	M	3	1.5	1.5	1.75	1.25	1.25	1.5	2	3	3	3
44	5	M P	3	1.5	1.5	1.75	1.25	1.25	1.5	2	3	3	3
45	5	SEC	3	2	2	2	1	1	1	3	3	3	3
46	5	GE	3	2	3	2	1	1	1	3	3	3	3
47	5	Stat	3	3	1.5	2.5	2	1.75	2	3	2.75	3	2
48	5	StatP	3	2.5	2.5	2.5	2.5	1.5	2.5	3	3	3	1.75
49	5	Stat	3	2.75	2	2.25	1.75	2	2.75	3	2.25	3	1.5
50	5	StatP	3	2.67	2.33	3	2.33	1.67	3	3	3	3	2.67
51	5	SEC	3	3	2.5	2	2	2	3	3	1	3	3
52	5	GE	3	3	2.5	2	2	2	3	3	2	3	3
53	5	Cs	2.75	2.75	2.75	2.75	2	2	2.25	2.5	1.75	1	2.75
54	5	Cs P	3	3	2	3	2	2	2	2	2	1	3
55	5	Cs	2.5	2.5	1.75	2.25	2.25	1.5	1.75	2.5	1.5	0	2.25

Gap =Target- Attainment			0	0	0	0	0	0	0	0	0	0	C
Target			2.54	2.03	1.73	2.08	1.82	1.48	2.12	2.67	2.21	1.86	2.34
Attainment			2.54	2.03	1.73	2.08	1.82	1.48	2.12	2.67	2.21	1.86	2.34
76	6	GE	2	1.75	1.75	2.25	1.25	0	1.75	2.25	1	1	2.25
75	6	SEC	2.25	2.5	3	2.75	2	0	2	2	1.5	1	2.75
74	6	Cs P	3	3	3	3	3	2	3	3	1	0	3
73	6	Cs	3	2.75	2.25	2.75	1.75	1	2.5	2.75	2	0	2.75
72	6	Cs P	2	2	1	1	1	1	1	1	0	1	3
71	6	Cs	3	2	2	1.5	1.5	1.5	1.25	1.75	2	1.5	2
70	6	GE	3	3	2.5	2.5	2	2	3	3	1	3	3
69	6	SEC	3	3	2.5	2.5	2	2	3	3	2	3	3
68	6	StatP	3	3	2	3	1.5	2	3	. 3	3	3	3
67	6	Stat	3	3	2	3	1.5	1.25	3	3	3	3	2
66	6	StatP	3	2.75	2.5	3	2.25	1.75	2.5	3	3	3	2.75
65	6	Stat	3	3	1.75	2.5	2	2	2.5	3	3	3	1
64	6	GE	3	1	3	2	2	1	1	3	3	3	3
63	6	SEC	3	1	2	2	1	1	1	2	3	3	3
62	6	M P	3	1.67	1	3	1	1	2	3	3	1	2
61	6	M	3	1.67	1.55	3	1.33	1.33	2	3	3	1	2
59 60	6	M P	3	2	1.5	1.75	1.25	1.33	2	2.33	3	3	3
58	5	GE	3	3	3	3	1.25	1.25	2	2	3	3	3
57	5	SEC	2.5	2	2.5	2.5	2	2	2	2.5	2	2	3
56	5	Cs P	2	2.5	2	2	1.5	0	1.5	2.5	2	0	2