

Bachelor of Science (Computer Science, Mathematics, Statistics)

Curriculum Version 1.00

(For AY2025-26 onwards)

Credit distribution among baskets (Minimum Credits to be earned = 120)		
Sl. No.	Baskets	Credit Contribution
1	School Core	11
2	Program Core	57
3	Discipline Elective	46
	Common Electives Basket	31
	Specialized Elective Baskets*	15
4	Open Elective	6
	TOTAL CREDITS	120

Specialized Elective Baskets*		
Sl.No.	Name of the Basket	Minimum Credit Requirement
1	Computer Science	3
2	Applied Mathematics	3
3	Applied Statistics	3
	Total*	15
<i>* Remaining Credits, if any, to satisfy Specialized Elective Baskets credit requirement can be taken from any Specialized Elective Basket</i>		

Sl. No.	Course Code	Course Name	L	P	Credits
1. School Core - Minimum Credits to be earned from this basket (A+B+C+D+F+G) =					11
A	CSE1021	Python Programming	0	4	2
B	ENG1004	Functional English	0	2	1
C	ENG1005	Advanced Communicative English	0	2	1
D. BSc Project Basket - Minimum credits to be earned from this basket =					4
1	CSE3054	B.Sc. Computer Science Project	-	-	4
2	MAT3005	B.Sc. Mathematics Project	-	-	4
3	MAT3006	B.Sc. Statistics Project	-	-	4
E. Foreign Languages Basket - Minimum credits to be earned from this basket =					1
1	GER1002	Communicative German	0	2	1
2	FRE1002	Communicative French	0	2	1
3	SPA1001	Communicative Spanish	0	2	1
F. Soft Skills Basket - Minimum credits to be earned from this basket =					2
1	SSK3003	Introduction to Soft Skills	0	2	1
2	SSK3001	Problem Solving through Aptitude	0	2	1
3	SSK2002	Being corporate Ready	0	2	1
4	SSK3005	Leadership and Career Acceleration	0	2	1
G. Non-Credit Pass/ Fail Type Courses					0
1	CHE1001	Environmental Studies	2	0	0
2	POS1022	Ethics and social responsibility	2	0	0
3	CEA1001	Co-/ Extra-curricular Activities			
2. Program Core - Minimum Credits to be earned from this basket =					57
A. Major -1 - Computer Science: All courses compulsory					19
1	CSE1023	Web Programming	3	2	4
2	CSE1022	Fundamentals of Data Structure and Algorithms	3	2	4
3	CSE1027	Introduction to Operating Systems	3	2	4
4	CSE2052	Introduction to AI and ML	3	2	4
5	CSE3053	B.Sc. Computer Science Internship	-	-	3
B. Major - 2 - Mathematics - All courses compulsory					19
6	MAT1015	Matrix and Linear Algebra	3	2	4
7	MAT1018	Calculus	3	2	4
8	MAT1019	Differential Equations and Applications	3	0	3
9	MAT1020	Numerical Analysis	3	2	4
10	MAT1021	Integral Transforms	3	2	4
C. Major - 3 Statistics - All courses compulsory					19
11	MAT1016	Descriptive Statistics	3	0	3
12	MAT2003	Probability Theory	3	0	3
13	MAT1017	Statistical Inference	2	2	3
14	MAT2004	Sampling Techniques	3	0	3
15	MAT2005	Distribution Theory	2	2	3
16	MAT2006	Stochastic Processes and Queuing Theory	3	2	4

3. Discipline Electives - Minimum Credits to be earned from <u>both</u> Common and Specialized elective baskets (3A+3B) =					46
3A. Common Electives Basket -			Minimum Credits to be earned from this basket =		31
(i) Computer Science courses					
1	CSE1019	Programming in C	0	4	2
2	CSE1020	Java Programming	0	4	2
3	CSE2051	Introduction to Database Management Systems	3	2	4
4	CSE1028	Introduction to Software Engineering	3	0	3
5	CSE1029	Programming in C++	0	4	2
6	CSE1031	C# Programming and .NET framework	0	4	2
7	CSE1032	Linux Fundamentals	2	2	3
8	CSE2049	Analysis and Design of Algorithms	3	2	4
9	CSE2050	Computer Networks	3	2	4
10	CSE2056	Data Communications	2	2	3
11	CSE2057	Fundamentals of UI/UX	2	2	3
12	PHY1009	Introduction to quantum computing	3	0	3
13	CSE2053	Introduction to Data Analytics	3	2	4
14	CSE3038	Digital Image Processing Techniques	2	2	3
(ii) Mathematics Courses					
15	MAT1009	Discrete Mathematics	3	0	3
16	MAT2008	Graph Theory and its Applications	3	0	3
17	MAT2009	Real and Complex Analysis	3	0	3
18	MAT2010	Special Functions and Number Theory	3	0	3
19	MAT2011	Mathematical Modeling	2	2	3
20	MAT2012	Group theory	3	0	3
21	MAT2013	Algorithm and Complexity	2	2	3
22	MAT2014	Operations Research	3	0	3
23	MAT2015	Dynamics & Statics	3	0	3
24	MAT2028	Vedic Mathematics	2	0	2
25	MAT2016	Calculus of Variations	3	0	3
(iii) Statistics courses					
26	MAT2020	Population Studies	2	2	3
27	MAT2021	Time Series Analysis and Index Numbers	2	2	3
28	MAT2022	Design of Experiments	3	0	3
29	MAT2023	Demography	3	0	3
30	MAT2024	Regression Analysis	2	2	3
31	MAT2025	Bayesian Statistics	2	2	3
32	MAT2026	Statistical Quality Control	3	2	4
33	MAT2027	Multivariate Analysis and Nonparametric methods	2	2	3
34	MAT3001	Testing of Statistical Hypothesis	2	2	3
35	ECO2007	Econometrics	2	2	3

(iv) common courses basket					
36	KAN1005	Kannada Kali	0	2	1
37	PSY1001	Understanding Self for Effectiveness	0	2	1
38	PSY1002	Dynamics of Human Behaviour	0	2	1
39	BIT1002	Basic Human Nutrition	2	0	2
40	MGT1101	Digital Entrepreneurship	2	0	2
Specialized Electives Baskets - Minimum Credits to be earned from any one of these baskets =					15
B. Computer Science Basket - Minimum Credits to be earned from any one of this basket =					3
1	CSE2062	AI Applications	2	2	3
2	CSE2063	Fundamentals of Deep Learning	2	2	3
3	CSE2064	Introduction to Reinforcement Learning	3	0	3
4	CSE2065	Introduction to Natural Language Processing	2	2	3
5	CSE2083	Elements of Cyber Security	2	2	3
C. Applied Mathematics Basket - Minimum Credits to be earned from any one of this basket =					3
1	MAT3002	Mathematics of Cryptography	2	2	3
2	MAT2017	Mathematical Game theory	2	2	3
3	MAT2018	Mathematics of Networks and Epidemics	3	0	3
4	MAT3003	Mathematics for Machine Learning and Data Science	2	2	3
5	MAT2019	Mathematical Economics	2	2	3
D. Applied Statistics Basket - Minimum Credits to be earned from any one of this basket =					3
1	MAT2028	Statistical Methods for Finance	2	2	3
2	MAT1011	Biostatistics	2	2	3
3	MAT3004	Survival Analysis	2	2	3
4	MAT3005	Industrial Statistics	2	2	3
5	MAT3006	Actuarial Statistics	2	2	3
4. Open Elective basket - Minimum Credits to be earned from this basket					6
Any course from another 'eligible' curriculum					
Any unused Discipline Elective from his/ her 'own' curriculum					
Any stand-alone course declared as "Open Elective" by School/ Dept. for a specific 'eligible' degree program					
School approved NPTEL/Swayam courses for a maximum of 3 credits					