

Engineering

Scheme & Syllabus of
Bachelor of Technology
Computer Science & Engg. (BlockChain)/
Comp. Sc. & Design/
(Batch2023 onwards)

Bachelor of Technology
Robotics & Artificial Intelligence
Batch 2023 onwards
3rd & 4th semester



By

Department of Academics
(BoS- CSE/ IT)

IK Gujral Punjab Technical
University

**Bachelor of Technology in : Computer Science & Engg. (BlockChain)/ Comp. Sc. & Design/
 Robotics & Artificial Intelligence**

It is a Graduate(UG) Programme of 4 years duration(8 semesters)

Scheme: Third Semester

Course Code	Type of Course	Course Title	Hours per Week			Marks Distribution		Total Marks	Credits
			L	T	P	Internal	External		
BTES 301-18	Engineering Science Course	Digital Electronics	3	0	0	40	60	100	3
BTCS 301-18	Professional Core Courses	Datastructure & Algorithms	3	0	0	40	60	100	3
BTCS 302-18	Professional Core Courses	Object Oriented Programming	3	0	0	40	60	100	3
BTAM 302-23	Basic Science Course	Mathematics III * (Probability and Statistics)	4	1	0	40	60	100	3
HSMC 101/102-18	Humanities & Social Sciences Including Management \ Courses	Foundation Course in Humanities (Development of Societies/Philosophy)	2	1	0	40	60	100	3
BTES 302-18	Engineering Science Course	Digital Electronics Lab	0	0	2	30	20	50	1
BTCS 303-18	Professional Core Courses	Datastructure & Algorithms Lab	0	0	4	30	20	50	2
BTCS 304-18	Professional Core Courses	Object Oriented Programming Lab.	0	0	4	30	20	50	2
BTCS 305-18	Professional Core Courses	IT Workshop**	0	0	2	30	20	50	1
		Summer Institutional Training	0	0	0	0	0	0	Satisfactory/Unsatisfactory
Total			15	2	12	320	380	700	21

* These are the minimum contact hrs. allocated. The contact hrs. can be increased by an institute as per the requirement of the subject.

** Syllabus to be decided by respective institute internally. It may include latest technologies.

IK Gujral Punjab Technical University, Kapurthala
B. Tech, Computer Science & Engg.

BTAM 302-23	Mathematics-III (Probability and Statistics)	L-4, T-1, P-0	4 Credits
Pre-requisite: Intermediate Calculus and Basic algebra			
Course Objectives: The objective of this course is to familiarize the students with fundamental concepts of theory of probability and statistics. The major focus of the course will be on a systematic mathematical treatment of these concepts and their applications.			
Course Outcomes: At the end of the course, the student will be able to			
CO1	Analyze given data using measures of central tendency, skewness and kurtosis.		
CO2	Understand and deal with randomness occurring in real world phenomena.		
CO3	Apply theoretical discrete and continuous probability distributions to deal with real world problems.		
CO4	Analyze given data using the concepts of correlation and regression and fitting of curves.		
CO5	Analyze hypothesis based on small and large samples using different tests of significance.		

Detailed Content:

Unit I

Measures of Central tendency: Moments, skewness and Kurtosis, Random experiment, Probability axioms, Definition of Probability, conditional probability, Discrete and Continuous random variables, Expectation of Discrete and Continuous random variables.

Unit II

Probability distributions: Binomial, Poisson and Normal, Poisson approximation to the binomial distribution, Evaluation of statistical parameters for these three distributions, Bivariate distributions and their properties.

Unit III

Correlation and regression for bivariate data, Rank correlation. Curve fitting by the method of least squares, fitting of straight lines, second degree parabolas and more general curves.

Unit IV

Test of significances: Sampling and standard error, Tests of significance for large samples and small samples (t-distribution, F-distribution), Chi-square test for goodness of fit and independence of attributes.

Recommended Books:

1. S.P. Gupta, Statistical Methods, Sultan Chand & Sons, 33rd Edition, 2005.
2. S.C. Gupta and V. K. Kapoor, Fundamentals of Mathematical Statistics, Sultan Chand & Sons, 2014.
3. S. Ross, A First Course in Probability, 6th Edition, Pearson Education India, 2002.
4. N.P. Bali and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, Reprint, 2010.
5. Robert V. Hogg, Joseph W. Mckean and Allen T. Craig, Introduction to Mathematical Statistics, 7th Edition, Pearson, 2012.

