

**B.P.PODDAR INSTITUTE OF MANAGEMENT AND
TECHNOLOGY**

(Approved by A.I.C.T.E & Affiliated to MAKAUT)

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COURSE FILE

Name of the Faculty: Dr.Kakali Karmakar (Sur)

Program: Information Technology

Course Name:Mathematics-IIA

Course Code:BS-M201

Year and Semester: 1st year and 2nd semester

Academic Year: 2018-2019

COURSE INFORMATION SHEET

COURSE PRE-REQUISITES: High School Mathematics**COURSE OBJECTIVES:**

1	To provide an overview of Basic Probability
2	To provide an overview of Continuous Probability Distributions:
3	To provide an overview of Bivariate Distributions
4	To provide an overview of Basic Statistics
5	To provide an overview of Applied Statistics
6	To provide an overview of Small samples

COURSE OUTCOMES:

SINO	DESCRIPTION	PO(1..12) MAPPING	PSO MAPPING	Bloom's Level
CO1	Able to learn the ideas of probability ,random variables, discrete probability distribution and .	PO1, PO2, PO3, PO4,PO12	PSO1	L2
CO2	Able to learn the ideas of continuous probabilitydistributions	PO1, PO2, PO3, PO4,PO12	PSO1	L2
CO3	Able to apply the concept of univariate and bivariate probability distribution in physical and engineering environment.	PO1, PO2, PO3, PO4,PO12	PSO1	L3
CO4	Able to understand the basic ideas of statistics with different characterisation of a univariate and bivariate data set.	PO1, PO2, PO3, PO4,PO12	PSO1	L2
CO5	Able to learn curve fitting,test of significance for the large sample data set.	PO1, PO2, PO3, PO4,PO12	PSO1	L3
CO6	Able to apply statistical tools for analysing data samplesand drawing inference on a given data	PO1, PO2, PO3, PO4,PO12	PSO1	L3

COURSE OUTCOMES VS POS MAPPING (DETAILED; HIGH:3; MEDIUM:2; LOW:1):

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	2	2	-	-	-	-	-	-	-	2
CO2	3	3	2	2	-	-	-	-	-	-	-	2
CO3	2	3	2	3	-	-	-	-	-	-	-	2
CO4	2	3	3	3	-	-	-	-	-	-	-	2
CO5	2	3	2	2	-	-	-	-	-	-	-	2
CO6	2	3	2	2	-	-	-	-	-	-	-	2

* For Entire Course, PO /PSO Mapping; 1 (Low); 2 (Medium); 3 (High) Contribution to PO/PSO

PO1	Engineering Knowledge	PO7	Environment & Sustainability	PSO1	Domain Skills 1
PO2	Problem Analysis	PO8	Ethics	PSO2	Domain Skills 2
PO3	Design & Development	PO9	Individual & Team Work		
PO4	Investigations	PO10	Communication Skills		
PO5	Modern Tools	PO11	Project Mgt. & Finance		
PO6	Engineer & Society	PO12	Life Long Learning		

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COURSE OUTCOMES VS PSOS MAPPING (DETAILED; HIGH:3; MEDIUM:2; LOW:1)

COURSE	PSO1	PSO2
CO1	1	-
CO2	1	-
CO3	2	-
CO4	1	-
CO5	2	-
CO6	1	-

Program Specific Outcomes (PSO)

PSO1:To enable students for successful employment, higher studies and research in cutting edge technologies like cloud computing, data analytics, Internet of Things.

PSO2: To enable students for understanding, analyzing and developing software applications addressing socio-economic aspects.

Bloom's Level

L-1	L-2	L-3	L-4	L-5	L-6
Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

JUSTIFICATION FOR MAPPING COS- POS

SNO	PO MAPPED	JUSTIFICATION
CO1	PO1	Concept of basic probability is a medium level mapping with “Engineering Knowledge” because student can use it to learn the subject Electrical Engineering.
	PO2	Concept of basic probability is a high level mapping with “Problem Analysis” because student can use it to develop algorithm .
	PO3	Concept of basic probability is a medium level mapping with “Design and development of solution” because student can use it to design network model of real life problem only.
	PO4	Concept of basic probability is a medium level mapping with investigation of complex problems because student can use it to investigate the chances of occurrence.
	PO12	Concept of basic probability is a medium level mapping with “Life long learning” for computer engineering.
CO2	PO1	Concept of continuous probability distributions is a high level mapping with “Engineering Knowledge” because student can use it to form mathematical model.
	PO2	Concept of continuous probability distributions is a high level mapping with mapping with “Problem Analysis” because student can use it to measure uncertainty hidden in reallife problem.
	PO3	Concept of continuous probability distributions is a medium level mapping with “Design and development of solution”

		because student can use it to develop new mathematical model.
	PO4	Concept of continuous probability distributions is a medium level mapping with investigation of complex problems because student can use it to investigate the chances of occurrence.
	PO12	Concept of continuous probability distributions is a medium level mapping with because student can use it rarely .
CO3	PO1	Concept of bivariate distributions is a medium level mapping with “Engineering Knowledge” because student can use it to form mathematical model.
	PO2	Concept of bivariate distributions is a high level mapping with “Problem Analysis” because student can use it to form mathematical model of continuous distribution.
	PO3	Concept of bivariate distributions is a medium level mapping with “Design and development of solution” because student can use it rarely .
	PO4	Concept of bivariate distributions is a high level mapping with investigation of complex problems because student can use it to investigate the chances of occurrence.
	PO12	Concept of bivariate distributions is a medium level mapping with “Life long learning” because student can use it rarely .
CO4	PO1	Concept of basic statistics is a medium level mapping with “Engineering Knowledge” because student can use it to form mathematical model.
	PO2	Concept of basic statistics is a high level mapping with “Problem Analysis” because student can use it to form mathematical model.
	PO3	Concept of basic statistics is a high level mapping with “Design and development of solution” because student can use it for new designing.
	PO4	Concept of basic statistics is a high level mapping with investigation of complex problems because student can use it to investigate the chances of occurrence.
	PO12	Concept of basic statistics is a medium level mapping with because student can use it in future study.
CO5	PO1	Concept of applied statistics is a medium level mapping with “Engineering Knowledge” because student can use it to form

		mathematical model.
	PO2	Concept of applied statistics is a high level mapping with “Problem Analysis” because student can use it to form mathematical model.
	PO3	Concept of applied statistics is a medium level mapping with “Design and development of solution” because student can use it rarely.
	PO4	Concept of applied statistics is a medium level mapping with investigation of complex problems because student can use it to investigate the chances of occurrence.
	PO12	Concept of applied statistics is a medium level mapping with because student can use it rarely .
CO6	PO1	Concept of small samples is a medium level mapping with “Engineering Knowledge” because student can use it to form mathematical model.
	PO2	Concept of small samples is a high level mapping with “Problem Analysis” because student can use it to form mathematical model.
	PO3	Concept of small samples is a medium level mapping with “Design and development of solution” because student can use it rarely.
	PO4	Concept of small samples is a medium level mapping with investigation of complex problems because student can use it to investigate the chances of occurrence.
	PO12	Concept of small samples is a medium level mapping with because student can use it rarely .

JUSTIFICATION FOR MAPPING COS-PSO S

SNO	PSO MAPPED	JUSTIFICATION
CO1	PSO1	Concept of basic probability maps because

		student can apply to higher studies and research in data analytics.
CO2	PSO1	Concept of continuous probability distribution maps because student can apply to higher studies and research in data analytics.
CO3	PSO1	Concept of bivariate distribution maps because student can apply to higher studies and research in data analytics.
CO4	PSO1	Concept of basic statics maps because student can apply to higher studies and research in data analytics.
CO5	PSO1	Concept of applied statistics maps because student can apply to higher studies and research in data analytics.
CO6	PSO1	Concept of small samples maps because student can apply to higher studies and research in data analytics.

JUSTIFICATION FOR MAPPING COS-BLOOM'S LEVEL

SNO	Bloom's Level	JUSTIFICATION
CO1	L2	Concept of basic probability maps because student can understand it
CO2	L2	Concept of continuous probability distribution maps because student can it.
CO3	L3	Concept of bivariate distribution maps because student can apply to higher studies and research in data analytics.
CO4	L2	Concept of basic statics maps because student can understand.
CO5	L3	Concept of applied statistics maps because student can apply to higher studies and research in data analytics.

CO6	L3	Concept of small samples maps because student can apply to higher studies and research in data analytics.
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GAPS IN THE SYLLABUS - TO MEET INDUSTRY/PROFESSION REQUIREMENTS:

SNO	DESCRIPTION	PROPOSED ACTIONS
1	Transformation of random variable	To be addressed

PROPOSED ACTIONS: TOPICS BEYOND SYLLABUS/ASSIGNMENT/INDUSTRY VISIT/GUEST LECTURER/NPTEL ETC

Gap within the syllabus - mapping to CO, PO/PSO

SNO	DESCRIPTION	CO	PO (1 . .12) MAPPING	PSO MAPPING
1	Transformation of random variable	CO1	PO1, PO2,PO3, PO4,PO12	PSO1

TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:

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Gaps beyond the syllabus - Mapping to PO/PSO

SNO	DESCRIPTION	PO (1 . .12) MAPPING	PSO MAPPING
1	Maximum Likelihood estimation of parameter of normal distribution	PO1,PO2,PO4, PO12	PSO1

WEB SOURCE REFERENCES:

<https://nptel.ac.in/courses/111101004/>

<https://nptel.ac.in/courses/108106083/>

<https://nptel.ac.in/courses/108106083/5>

DELIVERY/INSTRUCTIONAL METHODOLOGIES:

<input checked="" type="checkbox"/> CHALK & TALK	<input checked="" type="checkbox"/> STUD. ASSIGNMENT	<input checked="" type="checkbox"/> WEB RESOURCES	<input checked="" type="checkbox"/> NPTEL/OTHERS
<input type="checkbox"/> LCD/SMART BOARDS	<input type="checkbox"/> STUD. SEMINARS	<input type="checkbox"/> ADD-ON COURSES	<input type="checkbox"/> WEBNIARS

ASSESSMENT METHODOLOGIES-DIRECT:

<input checked="" type="checkbox"/> ASSIGNMENTS	<input type="checkbox"/> STUD. SEMINARS	<input checked="" type="checkbox"/> TESTS/MODEL EXAMS	<input checked="" type="checkbox"/> UNIV. EXAMINATION
<input type="checkbox"/> STUD. LAB PRACTICES	<input checked="" type="checkbox"/> STUD. VIVA	<input checked="" type="checkbox"/> MINI/MAJOR PROJECTS	<input type="checkbox"/> CERTIFICATIONS
<input type="checkbox"/> ADD-ON COURSES	<input type="checkbox"/> OTHERS		

ASSESSMENT METHODOLOGIES-INDIRECT:

<input checked="" type="checkbox"/> ASSESSMENT OF COURSE OUTCOMES (BY FEEDBACK, ONCE)	<input checked="" type="checkbox"/> STUDENT FEEDBACK ON FACULTY (TWICE)
<input type="checkbox"/> ASSESSMENT OF MINI/MAJOR PROJECTS BY EXT. EXPERTS	<input type="checkbox"/> OTHERS

INNOVATIONS IN TEACHING/LEARNING/EVALUATION PROCESSES:

1. Equitable learning
2. Supportive learning
3. Active learning

Prepared by

Approved by HOD