<u>Lecture Schedule for Online Theory </u>(Session: 2020-21)

Subject Name:- Animal Genetics and Breeding

UNIT I

Course Title: Biostatistics and Computer Application
Duration of Lecture Class:-04.08.2020 to 20.10.2020

Sr. No.	Date	Topic to be Covered	Hrs.
1.	04-08-2020 05-08-2020	Introduction and importance of statistics and biostatistics	2
2.	06-08-2020	Classification and tabulation of data	1
3.	10-08-2020	Parameter,Statistic and Observation.	1
4.	11-08-2020 13-08-2020	Graphical and diagrammatic representation of data.	2
5.	17-08-2020 18-08-2020	Measures of Central tendency (simple and grouped data).	2
6.	19-08-2020 20-08-2020	Measures of Dispersion (simple and grouped data)	2
7.	24-08-2020 25-08-2020	Probability and probability distributions: Binomial, Poisson and Normal.	2
8.	26-08-2020 27-08-2020	Moments, Skewness and Kurtosis.	2
9.	01-09-2020 02-09-2020 03.09.2020	Correlation and Regression	3
10.	07-09-2020 08-09-2020	Introduction of sampling methods	2
11.	09-09-2020	Tests of hypothesis	1
12	10-09-2020	T-Test	1
13.	14-09-2020	Z-Test	1
14.	15-09-2020	Chi-square test	1
15.	16-09-2020 17-09-2020	Design of experiment- Completely randomized design (CRD). Randomized block design (RBD).	2
16.	21-09-2020 22-09-2020 23-09-2020	Analysis of variance and F-test of significance	3
17.	24-09-2020	Introduction to Non-parametric tests.	1
18.	28-09-2020	Introduction to computer	1
19.	29-09-2020 30-09-2020	Computer lamguages	2
18.	1-10-2020	Computer network topologies	1
19.	05-10-2020	Data Base Management	1
20.	06-10-2020 07-10-2020	Review of MS-Office , MS-Word, Excel	2
21.	08-10-2020	Power Point and Access	1
22.	12-10-2020	Analysis of data using MS-Excel	1
23.	13-10-2020	Revision	1

24.	14-10-2020	Revision	1
25.	15-10-2020	Test	1
26.	19-10-2020	Discussion	1
	20-10-2020	Test	1

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UNIT-II
Course Title: Principles of Animal and Population Genetics
Duration of Lecture Class:-21.10. 2020 to 02.02.2021

Sr. No.	Date	Topic to be Covered	Hr.(s)
1.	21-10-2020	History of Genetics.	1
2.	22-10-2020 26-10-2020	Mitosis vors Meiosis	2
3.	27-10-2020 28-10-2020	Chromosome numbers and types in livestock and poultry.	2
4.	29-10-2020 02-11-2020	Overview of Mendelian principles.	2
5.	03-11-2020	Modified Mendelian inheritance	1
6.	04-11-2020	Pleiotropy, Penetrance and expressivity	1
7.	05-11-2020 17-11-2020 18-11-2020	Multiple alleles; lethals; sex-linked, sex limited and sex influenced inheritance.	3
8.	19-11-2020	Sex determination	1
9.	23-11-2020 24-11-2020 25-11-2020	Linkage, crossing over and construction of linkage map	3
10.	26-11-2020 01-12-2020	Mutation Chromosomal aberrations	2
11.	02-12-2020 03-12-2020	Cytogenetics Extra-chromosomal inheritance.	2
12.	07-12-2020 08-12-2020	Molecular genetics nucleic acids-structure and function.	2
13.	09-12-2020 10-12-2020	Gene concept DNA and its replication.	2
14.	14-12-2020 15-12-2020	Introduction to molecular techniques	2
15.	16-12-2020 17-12-2020	Introduction to population genetics individual vors population	2
16.	21-12-2020 22-12-2020	Genetic structure of population: Gene and genotypic frequency.	2
17.	23-12-2020	Hardy - Weinberg law and its application	1
18.	24-12-2020 28-12-2020	Forces changing gene and genotypic frequencies (eg Mutation, migration, selection and drift)	2
19.	29-12-2020 30-12-2020	Quantitative vors qualitative genetics concept of average effect and B.V	2
20.	18-01-2021	Components of Variance.	1
21.	19-01-2021	Concept of correlation and interaction between Genotype and Environment	1
22.	21-01-2021 25-01-2021	Heritability Repeatability	2
23.	27-01-2021	Genetic and Phenotypic Correlations	1
24.	28-01-2021	Revision	1
25.	01-02-2021	Class test	1
26.	02-02-2021	Revision	1

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Unit-III

Course Title: Principles of Animal Breeding
Duration of Lecture Class:-03.02. 2021 to 08.07.2021

Sr. No.	Date	Topic to be Covered	Hr.
1.	3-02-2021	History of Animal breeding	1
2.	4-02-2021	Classification of breeds: Cattle	1
3.	8-02-2021	Classification of breeds: Buffalo	1
4.	9-02-2021	Classification of breeds: Sheep	1
5.	10-02-2021	Classification of breeds: Goat	1
6.	11-02-2021	Classification of breeds: Poultry	1
7.	15-02-2021 16-02-2021	Economic characters of livestock and poultry and their importance	2
8.	17-02-2021 18-02-2021 22-02-2021	Response to selection and factors affecting it and Selection differential and factors affecting it	3
9.	23-02-2021	Basis of selection (individual selection)	1
10.	24-02-2021	Basis of selection (pedigree selection)	1
11.	25-02-2021	Family selection	1
12	08-03-2021	Progeny selection	1
13	09-03-2021	Indirect Selection and correlated response to selection	1
14.	10-03-2021	Method of selection(Tandem & ICL)	1
15.	18-03-2021	Selection index	1
16.	19-03-2021	Multi stage selection	1
17.	20-03-2021	Sire index	1
18.	25-03-2021	Class test	1
19.	26-03-2021	Classification of mating systems	1
20.	27-03-2021	Genetic and phenotypic consequences of inbreeding	1
21.	01-04-2021	inbreeding depression, application of inbreeding	1
22.	03-04-2021	Class test	1
23.	08-04-2021	Livestock scenario in India	2
24.	09-04-2021	Out breeding and its different forms	1
25.	10-04-2021 15-04-2021	Genetic and phenotypic consequences of outbreeding, application of outbreeding.	2
26.	16-04-2021	Heterosis and Systems of utilization of heterosis	1
27.	17-04-2021 17-04-2021	Selection for combining ability (RS and RRS)	2
28.	22-04-2021	Breeding strategies for the improvement of dairy cattle and buffalo.	1
29.	23-04-2021	Breeding strategies for the improvement of sheep, goat	1
30.	24-04-2021	Breeding strategies for the improvement of swine and poultry	1
31.	26-04-2021 27-04-2021	Open nucleus breeding system (ONBS).	2
33.	28-04-2021	Development of new breeds or strains	1
34.	29-04-2021	Breeding for disease resistance	1
35.	30-04-2021	Breeding for disease resistance	1
36.	03-05-2021	Current livestock and poultry breeding policies and programmes in the state and country	1
37.	04-05-2021	Current livestock and poultry breeding policies and programmes in the state and country	1

38.	05-05-2021	Methods of conservation- livestock and poultry conservation programmes in the state and country	1
39.	06-05-2021	Methods of conservation- livestock and poultry conservation programmes in the state and country	1
40.	10/05/2021	Application of reproductive and biotechnological tools for genetic improvement of livestock and poultry	1
41.	11-05-2021	Classification of dog and cat breeds	1
42.	12-05-2021	Classification of dog and cat breeds	1
43.	13-05-2021	Breeding management of dogs and cats.	1
44.	17-05-2021	Breeding management of dogs and cats.	1
45.	18-05-2021	Common pet birds seen in India and their breeding management	1
46.	19-05-2021	Common pet birds seen in India and their breeding management	1
47.	20-05-2021	Population dynamics	1
48.	24-05-2021	Effective population size of wild animals in captivity or zoo or natural habitats	1
49.	25-05-2021	Planned breeding of wild animals	1
50.	26-05-2021	Controlled breeding and assisted reproduction	1
51.	27-05-2021	Breeding for conservation of wild animals	1
52.	31-05-2021	Inbreeding coefficient and coefficient of relationship.	1
53.	01-06-2021	Revision	1
54.	02-06-2021	Revision	1
		Revision	
55.	08-06-2021	Sire index	1
56.	09-06-2021	Methods of conservation	1
57.	10-06-2021	Controlled breeding and assisted reproduction	1
58.	14-06-2021	Tests of hypothesis	1
59.	15-06-2021	T-Test	1
60.	16-06-2021	Z-Test	1
61.	17-06-2021	Chi-square test	1
62.	21-06-2021	Response to selection and factors affecting it	1
63.	22-06-2021	Cytogenetics Extra-chromosomal inheritance.	1
64.	23-06-2021	Method of selection(Tandem & ICL)	1
65.	24-06-2021	Probability	1
66.	28-06-2021	Basis of selection	1
67.	29-06-2021	Measures of Central tendency	1
68.	30-06-2021	Measures of Disperson	1
69.	01/07/2021	Effective population size of wild animals in captivity or zoo or natural habitats	1
70.	05/07/2021	Controlled breeding and assisted reproduction	1
71.	06/07/2021	Open nucleus breeding system (ONBS).	1
72.	07/07/2021	Biostatistics	1
73.	08/07/2021	Sampling	1

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Lecture Schedule for Online Practical (Session: 2020-21)

Subject Name:- Animal Genetics and Breeding

UNIT I

Course Title: Biostatistics and Computer Application
Duration of Lecture Class:-07.08. 2020 to 20.11.2020

Sr. No	Date	Topic to be Covered	Hrs.
1.	07-08-2020 08-08-2020	Collection, compilation and tabulation of data.	2
2.	14-08-2020 21-08-2020 29-08-2020	Estimation of measures of central tendency (mean, median, mode) for simple and grouped data.	3
3.	04-09-2020 05-09-2020 11-09-2020	Estimation of measures of dispersion (Range, standard deviation, standard error, variance, and coefficient of variation) for simple and grouped data.	3
4.	18-09-2020 19-09-2020	Graphical and diagrammatic representation of data	2
5.	25-09-2020 26-09-2020	Estimation of correlation and regression	2
6.	03-10-2020	Simple probability problems	1
7.	09-10-2020 10-10-2020 16-10-2020	Tests of significance: t-test, Z – test, Chi-square, F- tests	3
8.	23-10-2020	Completely randomized design (CRD)	1
9.	31-10-2020	Randomized block design (RBD)	1
10.	06-11-2020	Computer basics and components of computer	1
11.	07-11-2020 20-11-2020	Simple operations: internet and e-mail, Entering and saving biological data through MS-Office (MS-Excel)	2

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Course Title: Principles of Animal and Population Genetics
Duration of Lecture Class:- 20.11.2020 to 05.02.2021

Sr. No	Date	Topic to be Covered	Hrs.
1.	20-11-2020 21-11-2020	Monohybrid, Dihybrid cross and Multiple alleles	2
2.	27-11-2020 28-11-2020	Modified Mendelian inheritance and sex linked inheritance	2
3.	04-12-2020	Linkage and crossing over	1
4.	05-12-2020	Demonstration of Karyotyping in farm animals	1
5.	11-12-2020 12-12-2020	Calculation of gene and genotypic frequencies, Testing a population for Hardy-Weinberg equilibrium	2
6.	18-12-2020 19-12-2020	Calculation of effects of various forces that change gene frequencies	2
7.	26-12-2020 02-01-2021 22-01-2021	Computation of population mean, average effect of gene and gene substitution and breeding value	3
8.	23-01-2021 29-01-2021 30-01-2021 5- 02- 2021	Estimation of repeatability, heritability, genetic and phenotypic correlations	4

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Unit-III

Course Title: Principles of Animal Breeding
Duration of Lecture Class:-06.02.2021 to 03.07.2021

Sr. No	Date	Topic to be Covered	Hrs.
1.	6-02-2021	Calculation of Breeding efficiency and fertility index	1
2.	12-02-2021 19-02-2021	Computation of selection differential and intensity of selection	2
3.	22-02-2021 29-02-2021	Generation interval, expected genetic gain,	2
4.	12-03-2021	Correlated response, EPA and Most probable producing ability (MPPA).	1
3.	15-03-2021 16-03-2021	Selection index	2
5.	17-03-2021 22-03-2021	Estimation of heterosis	2
6.	23-03-2021	Estimation of heterosis	1
7.	24-04-2021 30-03-2021	Computation of sire indices	2
8.	31-03-2021	Computation of sire indices	1
9.	05/04/2021	Computation of inbreeding coefficient and coefficient of relationship	1
10.	06/04/2021	Computation of inbreeding coefficient and coefficient of relationship	1
11.	07/04/2021	Estimation of heterosis	1
12.	12/04/2021	Selection index	1
13.	19/04/2021	Generation interval, expected genetic gain	1
14.	20/04/2021	Computation of sire indices	1
15.	01/05/2021	Test	1
Revision			
16.	07/05/2021	Frequency Distribution	1
17.	08/05/2021	Data classification	1
18.	15/05/2021	Probability	1
19.	21/05/2021	Designs of Experiments (CRD)	1
20.	22/05/2021	Calculation of Breeding efficiency and fertility index	1
21.	28/05/2021	Estimation of repeatability	1
22.	29/05/2021	Estimation of heritability	1

23.	11-06-2021	Correlation and Regression	1
24.	12-06-2021	Measures of Cental Tendency- Mean Median and Mode	1
25.	18-06-2021	Z-Test	1
26.	19-06-2021	Computer	1
27.	25-06-2021	Computer Networks	1
28.	26-06-2021	Test	1
29.	02/07/2021	Selection index	1
30.	03/07/2021	Central Tendency	1

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