

MPCC – 202:

Course Title: APPLIED STATISTICS IN PHYSICAL EDUCATION AND SPORTS

Credit			Teaching Hours		
Lecture/Tutorials	Practical/Internship	Total	Lecture/Tutorials	Practical/Internship	Total
4	-	4	64	-	64

THE COURSE OBJECTIVES ARE:

1. To completely describe a data set, using appropriate descriptive statistics.
2. To interpret a set of descriptive statistics and understand the limitations of each measure.
3. Students shall be able to use and apply a wide variety of specific statistical methods.
4. Students shall know how to organize, manage, and present data.
5. Show ability to explore and organize data for analysis.
6. Students shall be able to use and apply a wide variety of specific statistical methods.
7. Demonstrate understanding of the properties of probability and probability distributions.
8. Demonstrate understanding of the probabilistic foundations of inference.
9. Apply inferential methods relating to the means of Normal distributions.

STUDENT LEARNING OUTCOMES:

1. Know how to organize, manage, and present data.
2. Explore and organize data for analysis.
3. Use and apply a wide variety of specific statistical methods.
4. Demonstrate understanding of the properties of probability and probability distributions.
5. Demonstrate understanding of the probabilistic foundations of inference.
6. Apply inferential methods relating to the means of Normal distributions.
7. Understand the concept of the sampling distribution of a statistic, and in particular describe the behavior of the sample mean.
8. Effectively communicate results of statistical analysis.
9. Demonstrate understanding of statistical concepts embedded in their courses.
10. Demonstrate proficiency in analyzing data using methods embedded in their courses.
11. Demonstrate ability to select appropriate methodologies for analysis based on properties of particular data sets.

UNIT I

- Meaning and Definition of Statistics,
- Need and importance of Statistics
- Types of Statistics.
- Data
 - Kinds of data.
 - Discrete.
 - Continuous.
- Parametric and non-parametric statistics.
- Graph (Introduction)

UNIT II

- Meaning, uses and construction of frequency table
- Measures of Central tendency (Meaning, Purpose, calculation and advantages)
 - Mean,
 - Median
 - Mode
- Measures of Variability (Meaning, Purpose, calculation and advantages)
 - Range
 - Quartile Deviation
 - Standard Deviation.
- Normal Curve
 - Principles of normal curve

- Properties of normal curve
- Divergence form normality
 - Skewness
 - Kurtosis

UNIT III

- Sample Distribution of Means, Standard Error of Mean
- Hypothesis
 - Types
 - Sources
- Level of Significance and confidence.
- Type I and Type II Errors
- One Tailed and Two Tailed test
- Degrees of Freedom
- Correlation
 - Co-efficient of correlation
 - Calculation
 - Product moment method
 - Rank difference Method

UNIT IV

- Tests of significance
 - Independent “t” test
 - Dependent “t” test
 - chi - square test,
- Analysis of Variance (ANOVA)
- Concept of ANCOVA
- Post-hoc tests-LSD and Scheffe.

TEACHING LEARNING STRATEGIES: The class will be taught by using lectures and demonstration, seminars, classroom discussion, videos, charts and presentations method.

ACTIVITIES: Lecture//Laboratory Work/ Field Work/ Outreaching Activities/ Project Work/ Vocational Training/Viva/ Seminars/ Term Papers/Assignments/ Presentations/ Self-Study etc.

ASSESSMENT RUBRIC: Classroom Test, Assignments, Practical Work

TEXT & REFERENCES:

- Best J. W (1971) Research in Education, New Jersey; Prentice Hall, Inc.
- Clark D.H. (1999) Research Problem in Physical Education 2nd edition, Eaglewood Cliffs, Prentice Hall, Inc.
- Jerry R Thomas & Jack K Nelson (2000) Research Methods in Physical Activities; Illonosis;Human Kinetics;
- Kamlesh, M. L. (1999) Research Methodology in Physical Education and Sports, New Delhi
- Rothstain A (1985) Research Design and Statistics for Physical Education, Englewood Cliffs: Prentice Hall, Inc.
- Sivaramakrishnan. S. (2006) Statistics for Physical Education, Delhi; Friends Publication
- Thirumalaisamy (1998)
- Statistics in Physical Education, Karaikudi, Senthil Kumar Publications