# COURSE PLAN

**(Undergraduate Programme)**

(Each Teacher to submit course plan individually)

**Annexure A**

**DEPARTMENT ELECTRICAL ENGINEERING**

Course Code: MT-331 Course Title: Probability & Statistics Teacher Name:Shumaila usman

Semester: Spring Academic Session: 2020 Class: Second year

No. of sections: 6 No of contact hours per week per section: 3

**TEACHING TOOLS**

| | | |
|---|---|---|
| ■ Problem-based learning | ☐ Mini-project | ☐ Case studies |
| ☐ Innovative solution | ☐ Group activity | ☐ Entrepreneurial activities |
| ☐ Industrial visit | ☐ Student presentation | ☐ Other _____ |

| WEEK No. | TOPICS | List of Material to be Uploaded | Assignment/Quiz Plan |
|---|---|---|---|
| 1. | **STATISTICS:** Introduction, Types of data & variables, presentation to data, object, classifications, Tabulation, Frequency distribution, Graphical representation, Simple, Component & Multiple Bar diagrams, Pie-chart, Histogram, Frequency Polygon, Frequency Curves & their types | Video Lectures/Handouts | Assignment/ **Quiz** |
| 2 | **MEASURES OF CENTRAL TENDENCY AND DISPERSION:** Statistics Averages, Median, Mode, Quartiles, Range, Moments, Skewness & Kurtosis | Video Lectures/Handouts | **Quiz** |
| 3 | **MEASURES OFDISPERSION** Quartile Deviation, Mean Deviation, Standard Deviation, Variance & its coefficient, Practical Significance in related problems | Video Lectures/Handouts | Assignment/ **Quiz** |
| 4 | **Counting techniques:** Basic concepts, Permutation & Combination. Definitions of probability, types of events. Conditional probability, Bayes rule. Related problems in practical Significance | Video Lectures/Handouts | Assignment/ **Quiz** |
| 5 | **Random variable**. Introduction, Discrete random variable. **PROBABILITY DISTRIBUTIONS:** Introduction, Discrete probability distributions, Binomial distribution Mathematical expectations | Video Lectures/Handouts | **Quiz** |
| 6 | **PROBABILITY DISTRIBUTIONS:** Geometric & Negative binomial distributions , Poisson distribution , | Video Lectures/Handouts | Assignment/ **Quiz** |
| 7 | binomial their conversation Poisson, Hyper geometric distribution | Video Lectures/Handouts | Assignment/ **Quiz** |

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| | **Continuous random variables**, Probability distribution, Probability density function | | |
| 8 | **Continuous random variables,** Distribution function **Continuous probability distribution.** Normal distributions & their practical significance. | Video Lectures/Handouts | |
| 9 | Central limit theorem with practical significance in related problems. Exponential distributions & their practical significance | Video Lectures/Handouts | Assignment |
| 10 | **STATISTICAL INFERENCE AND TESTING OF HYPOTHESIS:** Introduction, Estimation, Types of Estimates, Confidence interval | Video Lectures/Handouts | |
| 11 | Tests of Hypothesis Single testing for Z & t | Video Lectures/Handouts | Assignment |
| 12 | **CORRELATION:** Introduction, Scatter diagrams, Correlation & its Coefficient, Regression lines, Rank Correlation & its Coefficient, coefficient of Concordance Related problems. | Video Lectures/Handouts | |
| 13 | **SIMPLE REGRESSION & CURVE FITTING:** Introduction, fitting of a first- and second-degree curve, fitting of exponential and logarithmic curves, related problems. | Video Lectures/Handouts | |
| 14 | **SAMPLING AND SAMPLING DISTRIBUTION:** Introduction, Population, Sample, Parameter & Statistic, Objects of sampling, Sampling distribution of Mean, Standard errors, Sampling & Non-Sampling Errors, Random Sampling, Sampling with & without replacement, Sequential Sampling numerical. | Video Lectures/Handouts | |
| | | | |
| | **Total per Semester:** | 14 | |

**SESSIONAL CRITERIA**

| Assessment Type | Marks | Schedule (Week No.) |
|---|---|---|
| Quiz 1 | 15 | 5th |
| Quiz 2 | 15 | 10th |
| Assignment | 10 | 13th week |
| | | |
| **Total Sessional Marks** | | |

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|---|---|---|---|
| Prepared by: | Shumaila Usman | Reviewed & Approved by: | |
| Date | 12-5-20 | Date | |