**Course Log Template**

FAST-NU, L

**INSTITUTION**

BS (DS)

**PROGRAM (S) TO BE**

**EVALUATED**

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| **Course Name** | **Probability & Statistics** |
| **Catalog Number** | **MT- 2005** |
| **Instructor Name** | **Aizaz Ahmad Khan** |
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| **Topics Covered** | **Evaluation Instruments used** | **Signature** |
| Basic definition , Types of variables ,Mean, Median, Mode, Variance, Standard Deviation, Quartiles, Deciles, Percentiles, IQ Range. | Assignment – I |  |
| **Graphical representation of data** | Quiz – I |  |
| Sample point, tree diagram, set theory, Venn diagram | Assignment – I |  |
| Counting techniques, Probability of an event, Additive rules |  |  |
| Conditional Probability, Independence and Multiplicative rules. Bayes’ Rules | Assignment – I |  |
| **Sessional – I** |  |  |
| Concept of random variable, Discrete Probability Distributions and cdf.  Joint Probability Distributions, Marginal distribution, Mathematical Expectation | Assignment – II |  |
| Binomial & Multinomial distribution, Poisson Distribution, Hyper geometric distribution, Geometric distribution, Discrete uniform distribution. | Assignment – II |  |
| Normal distribution, Area under the normal curve , Application of Normal distribution , Normal approximation to the binomial, Standard Normal Distribution | Assignment – II |  |
| Chi-Squared distribution, Mean and variance of distribution. | Assignment – II |  |
| **Hypothesis testing:** z-test, t-test | Quiz – II |  |
| **Sessional – II** |  |  |
| Scattered diagram .Introduction to linear regression.  The simple linear regression model and multiple regression  Simple and multiple Correlation | Assignment – III |  |
| Estimating the coefficient , polynomial regression | Assignment – III |  |
| F-distribution , Hypothesis Testing, | Assignment – III |  |
| One way ANOVA | Assignment – III |  |
| Revision / Quiz / Assignments | Quiz |  |
| **Final Examination** |  |  |

Textbook: Probability and Statistics for Engineers and Scientists (9th Edition)

Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying Ye