Selecting, Deleting, Updating Records in a table, Inserting Multiple Data. Introduction to Angular and Web Applications Frameworks	
Unit-III :	**10 hrs**
Working with PHP and MySQL, Connecting to Database, Creating, Selecting, Deleting, Updating Records in a table, Inserting Multiple Data. Introduction to Angular and Web Applications Frameworks	

Books Recommended:

1. Web Design with HTML, CSS, JavaScript and jQuery Set, Jon Duckett, John Wiley & Sons.
2. Learning PHP, MySQL & JavaScript: with jQuery, CSS & HTML5, Robin Nixon, O'Reilly.
3. JavaScript: The Web Technologies Series, Don Gosseli, Course Technology Cengage Learning.
4. Web Technologies, Uttam K Roy, Oxford University Press.
5. The Complete Reference PHP – Steven Holzner, Tata McGraw-Hill.

Course No(N&M|Mn|T|251): Statistics for Data Science

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
N&M|Mn|T|251	**Mn**	Theory	2	2	30		----	----	----

Course Title of the Course (N&M|Mn|T|251): Statistics for Data Science

Course Outcome (CO):

After completion of course students will be able to:

CO1: Understand the fundamental concepts of statistics and their application in data science.

CO2: Be able to summarize, visualize, and interpret data using statistical methods.

CO3: Apply statistical tools and techniques to solve real-world data science problems

Statistics for Data Science	Total Hrs: 30
Unit-I	**10 hrs**
Introduction to Statistics: Role of statistics in data science, Types of data: Nominal, Ordinal, Interval, Ratio, Descriptive vs. Inferential Statistics **Data Summarization and Visualization:** Measures of central tendency: Mean, Median, Mode, Measures of dispersion: Variance, Standard Deviation, Range, Data visualization: Histograms, Box plots, Scatter plots	
Unit-II :	**10 hrs**
Probability Basics: Probability rules and axioms, Conditional probability and Bayes' theorem, Probability distributions: Binomial, Poisson, Normal **Sampling and Estimation:** Sampling methods: Random, Stratified, Cluster, Central Limit Theorem, Confidence intervals	
Unit-III :	**10 hrs**
Hypothesis Testing: Null and alternative hypotheses, p-values and significance levels, Types of errors: Type I and Type II **Correlation and Regression:** Pearson and Spearman correlation coefficients, Simple linear regression, Multiple linear regression basics	

Books Recommended:

1. Field, A., Miles, J., & Field, Z. (2012). Discovering statistics using *R*. Sage.
2. Montgomery, D. C., & Runger, G. C. (2018). Applied statistics and probability for engineers (7th ed.). Wiley.
3. Wasserman, L. (2013). All of statistics: A concise course in statistical inference. Springer.
4. Diez, D. M., Barr, C. D., & Çetinkaya-Rundel, M. (2019). OpenIntro statistics (4th ed.). OpenIntro.
5. Vander Plas, J. (2016). Python data science handbook: Essential tools for working with data. O'Reilly Media.

Course No(N&M|GE|OE|T|250): Concepts of AI-II

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures/Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
N&M|GE|OE|T|250	**GE|OE**	Theory	2	2	30		----	----	----

Course Title of the Course (N&M|GE|OE|T|250): Concepts of AI-II

Course Outcome (CO):

After completion of course students will be able to:

CO1: Differentiate between supervised and unsupervised Learning.

CO2: Able to analyze which method should be used to solve a real time problem

CO3: Understand basic working of Neural Networks

Concepts of AI-II	**Total Hrs: 30**
Unit-I	**10 hrs**
Introduction to Machine Learning: Definition and types of ML: Supervised, Unsupervised, and Reinforcement Learning. Key concepts: Features, labels, training, testing, and validation. **Supervised Learning:** Regression: Linear Regression, Logistic Regression, Classification: Decision Trees, Support Vector Machines (SVM), k-Nearest Neighbors (k-NN).	
Unit-II :	**10 hrs**
Unsupervised Learning: Clustering: k-Means, Hierarchical Clustering, Dimensionality Reduction: Principal Component Analysis (PCA).	
Unit-III :	**10 hrs**
Neural Networks and Deep Learning: Introduction to neural networks, backpropagation, types of neural networks	

Books Recommended:

1. Russell, S., & Norvig, P. (2020). Artificial Intelligence: A Modern Approach *(4th ed.). Pearson.*
2. Goodfellow, I., Bengio, Y., & Courville, A. (2016).Deep learning. MIT Press.
3. Murphy, K. P. (2012).Machine learning: A probabilistic perspective. MIT Press.
4. Alpaydin, E. (2020).Introduction to machine learning (4th ed.). MIT Press.