

Web Essentials: Clients, Servers and Communication – The Internet - World Wide Web(WWW), Web Browsers, HTTP Request Message – HTTP Response Message, Web Clients ,Web Servers . Static and Dynamic websites, HTML: HTML Editor, HTML Tags and Attributes, HTML Tag vs. Element, Basic Formatting Tags, Creating Tables, Lists, Forms and Frames. Introduction to HTML5: New Added Elements in HTML 5, control elements.	
<b>Unit-II :</b>	<b>10 hrs</b>
Introduction to XHTML: Overview of XHTML, Meta tags, Character entities, frames and frame sets.	
<b>Unit-III :</b>	<b>10 hrs</b>
Cascading Style Sheets (CSS): Syntax, CSS Versions, and its history, fundamental building blocks of CSS, Different types of CSS2 selectors: Inline, embedded and external style sheets.	

**Books Recommended:**

1. The Complete Reference: HTML and CSS, Thomas A. Powell, Mc Graw Hill
2. HTML & CSS: Design and Build Websites, Jon Duckett, John Wiley & Sons.
3. Web Technologies, Uttam K Roy, Oxford University Press.

**Course No(N&M|Mn|T|201):Fundamental of Data Science**

Course No.	Type of Course	Theor y / Practic al	Credi ts	Instructi on hour per week	Total No. of Lectures/H ours / Semester	Durati on of Exam	Formativ e Assessm ent Marks	Summati ve Assessm ent Marks	Total Mark s
<b>N&amp;M Mn T 201</b>	MnT	Theor y	2	2	30		----	----	----

**Course Title of the Course (Minor): Fundamentals of Data Science**

**Course Outcome (CO):**

After completion of course students will be able to:

CO1: Understand the Basics of Data Science

**CO2:** Apply basic data exploration and pre-processing techniques to real-world datasets.

**CO3:** Understand the lifecycle of data analysis, from problem identification to model deployment.

<b>Fundamentals of Data Science</b>	<b>Total Hrs: 30</b>
<b>Unit-I</b>	<b>10 hrs</b>
<b>Introduction to Data Science:</b> Definition, Scope, and Importance of Data Science, Roles in Data Science: Data Scientist, Data Analyst, Data Engineer, Overview of the Data Science Lifecycle: Problem Definition, Data Collection, Data Cleaning, Data Analysis, Model Building, and Interpretation.  <b>Data Collection and Exploration:</b> Types of Data: Structured vs. Unstructured, Data Sources: Public Datasets, APIs, Web Scraping, Database Querying	
<b>Unit-II :</b>	<b>10 hrs</b>
Basic Data Exploration: Data Types, Descriptive Statistics, Data Visualization, Introduction to Data Collection Tools and Libraries (e.g., Pandas, NumPy, SQL)  <b>Data Cleaning and Preprocessing:</b> Handling Missing Data, Outliers, and Duplicates, Data Transformation: Normalization, Standardization, Introduction to Data Wrangling Techniques.	
<b>Unit-III :</b>	<b>10 hrs</b>
<b>Exploratory Data Analysis (EDA):</b> Visualizing Data with Matplotlib and Seaborn, Identifying Patterns and Trends in Data, Correlation, Distribution, and Aggregation of Data  <b>Introduction to Machine Learning:</b> Supervised vs. Unsupervised Learning, Algorithms: Linear Regression, K-Means Clustering, Model Evaluation: Accuracy, Precision, Recall, F1 Score	

**Books Recommended:**

1. Grus, J. (2019). *Data science from scratch: First principles with Python* (2nd ed.). O'Reilly Media.
2. McKinney, W. (2017). *Python for data analysis: Data wrangling with pandas, NumPy, and IPython* (2nd ed.). O'Reilly Media.
3. Dasgupta, S. (2018). *Data science for beginners: A comprehensive guide to understanding and practicing data science*. CreateSpace Independent Publishing Platform.