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RGPV B.Tech – CSE 5th Semester Syllabus

CS-503-A: Data Analytics

Unit I: Introduction to Data Analytics

- Definition and scope of data analytics
- Types of data: structured, semi-structured, unstructured
- Data analytics lifecycle
- Applications in business, healthcare, education, and engineering

Unit II: Data Preprocessing

- Data cleaning, integration, transformation
- Handling missing values and outliers
- Normalization and standardization
- Feature selection and dimensionality reduction

Unit III: Statistical Methods

- Descriptive statistics: mean, median, mode, variance
- Probability distributions: normal, binomial, Poisson
- Hypothesis testing, correlation, regression
- Chi-square test, ANOVA

Unit IV: Machine Learning Basics

- Supervised vs unsupervised learning

- Classification: decision trees, k-NN, SVM
- Clustering: k-means, hierarchical
- Model evaluation: confusion matrix, precision, recall, F1-score

Unit V: Tools and Technologies

- Introduction to R and Python
- Libraries: NumPy, Pandas, Matplotlib, Scikit-learn
- Data visualization techniques
- Case studies and mini projects

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- [Career Shiksha – CS-503-A Syllabus Overview](#)
- [RGPV Notes – CS-503 Electives](#)