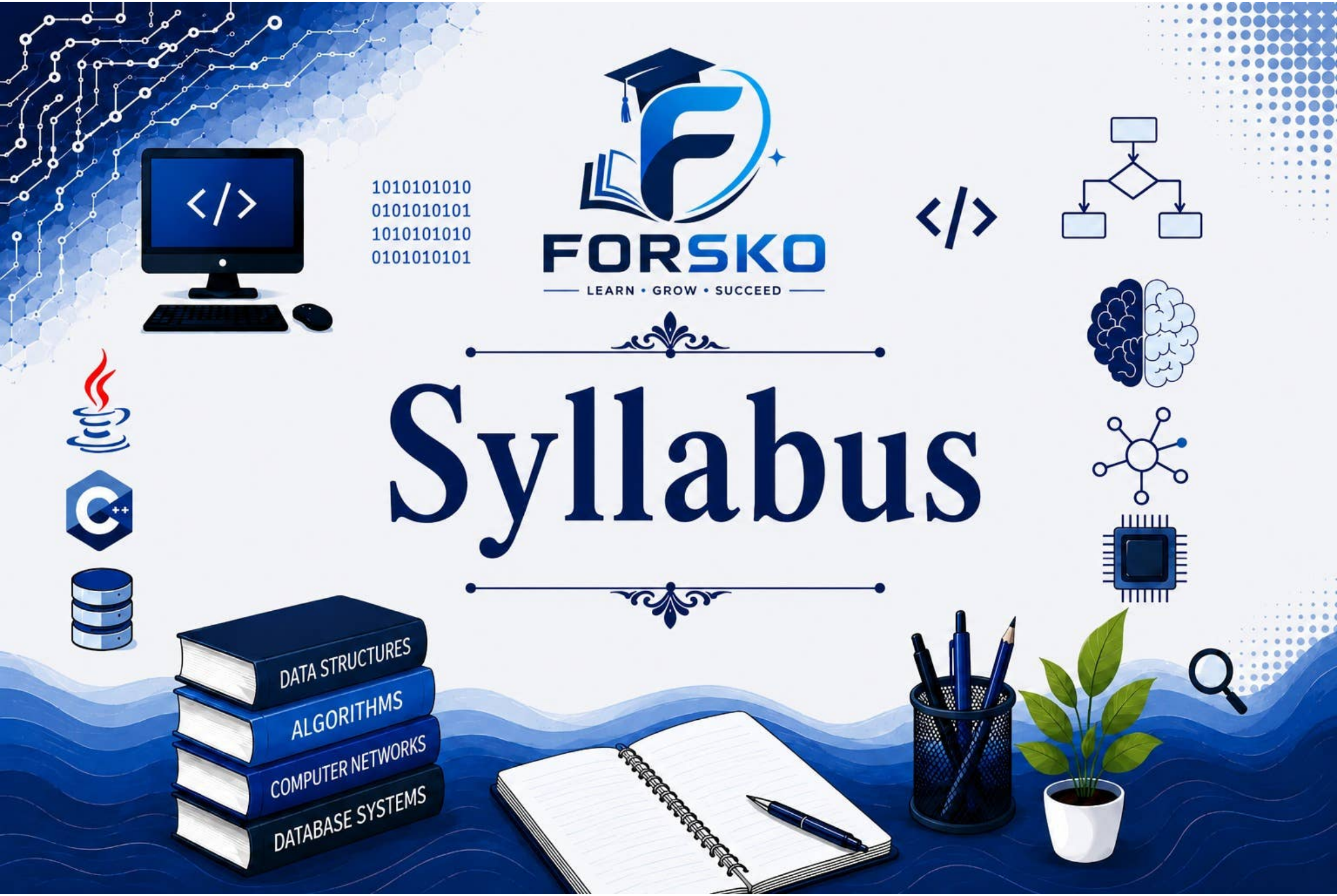
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DATABASE SYSTEMS

Major Course (Elective-1): Data Mining

Level	Semester	Course Code	Course Name	Credits	Teaching Hours	Exam Duration	Max Marks
5.5	V	**112217**	**Data Mining**	2	30	2 Hrs.	30

Course Objectives:	1. To understand basics of Data Mining and preprocessing. 2. To study association rules and classification techniques. 3. To learn OLAP and clustering methods. 4. To understand data mining applications and trends.			
Course Outcomes:	Students will be able to - 1. Explain basic Data Mining concepts and preprocessing. 2. Apply association and classification techniques. 3. Understand OLAP and clustering methods. 4. Identify applications and trends in Data Mining.			
Unit System	**Contents**	**Workload Allotted**	**Weightage of Marks Allotted**	**Incorporation of Pedagogies**
Unit I	**Introduction and Data Preprocessing:** Introduction to Data Mining, Need and Applications of Data Mining, Data Mining Functionalities, Types of Data in Data Mining **Data Preprocessing:** Data Cleaning, Data Integration, Data Transformation, Data Reduction **Introduction to Data Warehouse,** Difference between Data Mining and Data Warehouse	8 Hrs.	8 Marks	Use any pedagogical technique suitable for the topic
Unit II	**Association Rules and Classification:** Frequent Patterns and Association Rules, Basic Concepts of Association Rule Mining, Classification and Prediction, Decision Tree Classification, Bayesian Classification, Rule-Based Classification, Accuracy and Error Measures	7 Hrs.	7 Marks	
Unit III	**Clustering and OLAP Technology:** Overview of OLAP Technology, Multidimensional Data Model, Data Cube and Data Generalization, Introduction to Clustering, Partitioning Methods, Hierarchical Methods, Density-Based Methods,	8 Hrs.	8 Marks	

	Difference between Classification and Clustering			
Unit IV	**Advanced Topics and Applications:** Introduction to Web Mining and Text Mining, Social Network Analysis, Graph Mining, Mining Time-Series Data, Applications of Data Mining in Healthcare, Banking, Education, and Business, Recent Trends in Data Mining	7 Hrs.	7 Marks	
References:	**Course Material/Learning Resources** **Text books:** 1. Data Mining: Concepts and Techniques - J. Han, M. Kambe **Reference Books:** 1. Data Mining: Introductory and Advanced Topics – Margaret H. Dunham, Pearson Education 2. Data Warehousing in the real world - Sam Anahory, Dennis Murry, Pearson Education 3. Principles of Data Mining - David Hand, Heikki Manila, Padhraic Symth, PHI 4. Data Warehousing, Data Mining & OLAP, Alex Bezon, Stephen J. Smith McGraw-Hill Edition 5. Data Warehousing Fundamentals, Paulraj Ponniah, Wiley-Inter science Publication **Weblink to Equivalent MOOC on SWAYAM if relevant:** 1. https://onlinecourses.nptel.ac.in/noc21_cs06/preview 2. https://onlinecourses.swayam2.ac.in/cec19_cs01/preview **Any pertinent media (recorded lectures, YouTube, etc.)if relevant:** 1. https://youtu.be/T_D2tDTmrWE 2. https://youtu.be/cLI_bIlq-oU 3. https://youtu.be/KgjUsie50WQ 4. https://youtu.be/ykZ-_UGcYWg 5. https://youtu.be/jzDZZ-msoQc 6. https://youtu.be/m-aKj5ovDfg			

Assessment Rubric: Internal for Theory Course (Major Elective-1)

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI THEORY EXAMINATION B.Sc. III, SEMESTER – V (NEP)			
Theory	**Course Code:** 112217	**Course Title: Data Mining**	**Max Marks: 20**
Sr. No.	**Assessment Criteria**		**Marks**
1	Any Two of the Activity (weekly or monthly assignment/ Unit Test/Class Test) **(CAT-1)**		**10**
2	Any One of the Activity includes Open Book Test, MCQ Tests, / Theory related Class activity/Task etc.) etc. **(CAT-2)**		**5**
3	Participation in any one Activity includes Quiz, Seminar, Group Discussion, Industry visit, Case Study, Mini project, innovative work, etc. based on Theory Course. Involvement in subject related activities such as Conference, Workshop, Coding Competitions etc. **(CAT-3)**		**5**