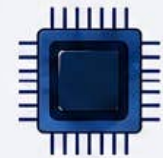
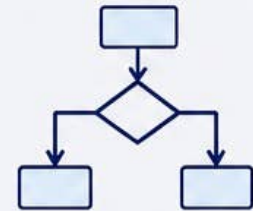




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Syllabus



Minor Theory: Data Structure and RDBMS

Level	Semester	Course Code	Course Name	Credits	Teaching Hours	Exam Duration	Max Marks
5.0	III	109261/ 110261/ 112261/123261/ 134261/135261/138261	Data Structure and RDBMS	2	30	2 Hrs.	30

Course Objectives:	1. To provide the knowledge of basic of Data Structure 2. To understand importance of Algorithms 3. To understand importance of different steps of algorithm in Computer Science 4. To understand the Data Structure concepts 5. Discuss Database management systems, databases and its applications 6. Familiarize the students with a good formal foundation on the relational model. 7. Outline the various systematic database design approaches 8. Familiarize with SQL, a basic language of database and enhance the skill to perform the queries by using functions.			
Course Outcomes:	Students will be able to - 1. Learn the basic types for data structure, implementation and application. 2. Know the strength and weakness of different data structures. 3. Use the appropriate data structure in context of solution of given problem. 4. Understand the fundamental concepts of Database. 5. Knowledge and ability to implement Normalization. 6. Understand the role and responsibility of Database Administrator, 7. Familiar with SQL, a basic language of database and enhance the skill to perform the queries by using functions.			
Unit System	Contents	Workload Allotted	Weightage of Marks Allotted	Incorporation of Pedagogies
Unit I	Data structure: Introduction to data structure, Types of data structure: Primitive and Non-primitive, Linear and Non-linear data structure, Data structure operations. Array: Definition and concepts, Memory Representations, Operations: Traversing, Insertion,	8 Hrs.	8 Marks	Use any pedagogical

	Deletion.			technique suitable for the topic
Unit II	Stacks: Definition and concepts, Memory Representations, Operations: Traversing, Insertion, Deletion. Queue: Definition and concepts, Memory Representations, Operations: Traversing, Insertion, Deletion. Types of Queue.	7 Hrs.	7 Marks	
Unit III	Introduction to Database: Data, Information, Characteristics of Database, Need of database, and Relational Model. Architecture of DBMS, DBA and its Role, Structured Query Language (SQL): Introduction, features, characteristics, advantages, data types, operators, Components of SQL: DDL, DML, DCL and TCL commands, select statement with clauses (Order By, Group By, Having, Where)	8 Hrs.	8 Marks	
Unit IV	Constraint: Data constraints and its type. Operations on Table with constraints. Snapshot, Views: Need, advantage & types. Index: Need, types and advantages, Joins and Union of Tables and its types. In-built Functions: Character Functions, Number Functions, Date Functions, Group Functions, and Conversion Functions, Use of alias, Null, NVL, sub queries.	7 Hrs.	7 Marks	
References :	Course Material/Learning Resources Text books: 1. Data Structures, Seymour Lipschutz, Schaum's Outlines Series, Tata McGraw-Hill. 2. Text Book of Computer Science (Data Structure and C++): S. D. Pachpande, R. B. Ghayalkar and Athar Iqbal, Dnyanpath Publication. 3. SQL, PL/SQL Programming – Ivan Bayross (BPB) 4. SQL A Complete Reference, Alexis Leon, Mathews Leon (Tata McGraw Hill) Reference Books: 1. Fundamentals of Data Structures in C, Ellis Horowitz, Sartaj Sahni and Susan Anderson-Freed. W.H. Freeman and Company. 2. Data Structure and Algorithms: Aho, Hopcroft, Ulman 3. Introduction to Data Structure: Bhagat Singh, Thomas L Naps 4. Database Management System 3rd Ed. by Raghu Ramakrishnan and <i>Johannes Gehrke</i> 5. Oracle PL/SQL Language Pocket Reference, 5E: A Guide to Oracle's Pl/SQL Language Fundamentals. by Steven Feurstein, Bill Pribyl and Chip Dawes (O'REILLY) Weblink to Equivalent MOOC on SWAYAM if relevant: 1. https://onlinecourses.swayam2.ac.in/cec22_cs19/ 2. https://onlinecourses.nptel.ac.in/noc22_cs92/ 3. https://onlinecourses.nptel.ac.in/noc22_cs70/			

	4. https://onlinecourses.swayam2.ac.in/cec19_cs05/preview 5. https://onlinecourses.nptel.ac.in/noc19_cs46/preview 6. https://onlinecourses.nptel.ac.in/noc20_cs60/preview Any pertinent media (recorded lectures, YouTube, etc.) if relevant: 1. https://www.youtube.com/watch?v=RBSGKIAvoiM 2. https://www.youtube.com/watch?v=zg9ih6SVACc 3. https://www.youtube.com/watch?v=3EJlovevfcA 4. https://www.youtube.com/watch?v=U2T_LCdO14Y 5. https://www.youtube.com/watch?v=7wj7UEdLI6U
Model Questions:	

Assessment Rubric: Internal for Data Structure and RDBMS (Minor Specific) Course

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI THEORY EXAMINATION B.Sc. II, SEMESTER – III (NEP)			
Theory	Course Code: 109261/ 110261/ 112261/123261/ 134261/135261/138261	Course Title: Data Structure and RDBMS	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, CaseStudy, Mini project, innovative work, etc. based on Theory Course. Involvement in subject related activities such as Conference, Workshop, Coding Competitions etc. (CAT-3)	5	