

Academic Council Meeting No. and Date : 03 / February 14, 2022

Agenda Number : 7

Resolution Number : 13 / 5.3



**VidyaPrasarak Mandal's
B. N. Bandodkar College of
Science (Autonomous), Thane**



Certificate course in Next Generation Databases

[With effect from Academic Year 2022-2023]

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Eligibility :

Passed 12th standard (HSC) of Maharashtra State Board / CBSE / ICSE board or equivalent.

Mode of Conduct :

Offline lectures / Online lectures

Structure of Programme

CourseCode	Course Title	No. of lectures	Credits
BNBCCND1T1	Certificate course in Next Generation Databases	40	2

Syllabus

Course Code	Course Title	Credits	No. of lectures
BNBCCND1T1	Certificate course in Next Generation Databases	2	
Unit I :	<ul style="list-style-type: none"> Database Revolutions- System Architecture- Relational Database- Database DesignData Storage- Transaction Management- Data warehouse and Data Mining- Information Retrieval. Big Data Revolution- CAP Theorem- Birth of NoSQL- Document Database— XML Databases- JSON Document Databases- Graph Databases 		10
Unit II :	<ul style="list-style-type: none"> The MongoDB Data Model: The Data Model, JSON and BSON, The Identifier (_id),Capped Collection, Polymorphic Schemas, Object Oriented Programming, Schema Evolution Using MongoDB Shell: Basic Querying, Create and Insert, Explicitly Creating Collections, Inserting Documents Using Loop, Inserting by Explicitly Specifying _id, Update, Delete, Read, Using Indexes 		10
Unit III :	<ul style="list-style-type: none"> The End of Disk? SSD and In-Memory Databases: The End of Disk?, Solid State Disk, The Economics of Disk, SSD-Enabled Databases, In-Memory Databases, TimesTen, Redis, SAP HANA, VoltDB 		10

Books for Reference

1.	
2.	
3.	
4.	

Pattern of Evaluation(8 Hours for examination, assessment and evaluation)

MCQ Test/ Online MCQ Test (Duration: 1 Hour)

Assessment and Evaluation of Case Study Reports submitted by participants (Topics for case study to be allotted by teachers in consultation with students)

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