



Department of Computer Applications
National Institute of Technology
Tiruchirappalli – 620 015

COURSE PLAN

1.Course Outline			
Course Title	Next Generation Databases		
Course Code	CA602		
Department	Computer Applications	No. of Credits	3
Pre - Requisite Course	-	Faculty Name	Mr.K.Vignesh Mrs.A.Cynthia Devi
PAC Chairman	Dr. R.Eswari		
Email	vigneshk@nitt.edu cynthia@nitt.edu	Telephone no	9940033292 9791957080
Course Type	Core Course	Office	Lyceum 118
Course Material	GuyHarrison,“NextGenerationDatabases”,Apress,2015.		
2. Course Overview			
The course covers concept of databases. Further this covers the Big Data and NoSQL Databases			
3. Course Objectives			
<ul style="list-style-type: none">• To explore the concepts of NoSQL Databases• To understand and use columnar and distributed database patterns• To learn to use various Data models for a variety of databases			
4.Course Outcomes			
Students will be able to: <ul style="list-style-type: none">• Explore the relationship between Big Data and NoSQL data bases• Work with NoSQL data bases to analyze the big data for useful business applications.• Work with different data models to suit various data representation and storage needs.			

5. Course Teaching and Learning Activities

Wee k	No. of Classes	Topic Covered	Mode of Delivery
1	Class I	Database Revolution - System Architecture	Chalk ,Talk & PPT
	Class II	Relational Database	Chalk ,Talk & PPT
	Class III	Database Design – Data Storage	Chalk ,Talk & PPT
2	Class I	Transaction Management	Chalk ,Talk & PPT
	Class II	Data warehouse and Data Mining	Chalk ,Talk & PPT
	Class III	Information Retrieval	Chalk ,Talk & PPT
3	Class I	Big Data Revolution- CAP Theorem	Chalk ,Talk & PPT
	Class II	Birth of NoSQL- Document Database	Chalk ,Talk & PPT
	Class III	XML Databases-JSON Document Databases.	Chalk ,Talk & PPT
4	Class I	Graph Databases	Chalk ,Talk & PPT
	Class II	Column Databases	Chalk ,Talk & PPT
	Class III	Data Warehousing Schemes- Columnar Alternative	Chalk ,Talk & PPT
5	Class I	Sybase IQ- C Store and Vertica	Chalk ,Talk & PPT
	Class II	Column Database Architectures	Chalk ,Talk & PPT
	Class III	SSD and In- Memory Databases.	Chalk ,Talk & PPT
6	Class I	In Memory Databases	Chalk ,Talk & PPT
	Class II	Berkeley Analytics Data Stack and Spark.	Chalk ,Talk & PPT
	Class III	Distributed Database Patterns	Chalk ,Talk & PPT
7	Class I	Distributed Relational Databases- Non-relational Distributed Databases	Chalk ,Talk & PPT
	Class II	MongoDB	Chalk ,Talk & PPT
	Class III	Sharing and Replication	Chalk ,Talk & PPT
8	Class I	HBase - Cassandr - Consistency Models	Chalk ,Talk & PPT
	Class II	Types of Consistency- Consistency MongoDB	Chalk ,Talk & PPT
	Class III	HBase Consistency-Cassandra Consistency.	Chalk ,Talk & PPT
9	Class I	Data Models and Storage- SQL- NoSQL APIs	Chalk ,Talk & PPT
	Class II	Return SQL- Advance Databases	Chalk ,Talk & PPT
	Class III	PostgreSQL- Riak.	Chalk ,Talk & PPT
10	Class I	CouchDB- NEO4J- Redis- Future Databases	Chalk ,Talk & PPT
	Class II	Revolution RevisitedCounter revolutionaries	Chalk ,Talk & PPT
	Class III	Oracle HQ- Other Convergent Databases- Disruptive Database Technologies.	Chalk ,Talk & PPT

6.Course Assessment Methods - Theory

Sl. No.	Mode of Assessment	Week/	Duration	Weightage(%)
1.	Cycle Test –1	4 th week	60 mins	20
2.	Cycle Test –2	8 th week	60 mins	20
3.	Assignment/ Seminar	7 th to 10thweek	-	10
4.	End Semester Exam	-	180 mins	50

7.Essential Readings (Textbooks, Reference books, Websites, Journals, etc.)**REFERENCES:**

1. Abraham Silberschatz, Henry F. Korth, S. Sudarshan, "Database System Concepts",SixthEdition,McGrawHill.
2. GuyHarrison,"NextGenerationDatabases",Apress,2015.
3. EricRedmond,JimRWilson,"SevenDatabasesinSevenWeeks",LLC.2012.
4. DanSullivan,"NoSQLforMereMortals",Addison-Wesley,2015.
5. AdamFowler,"NoSQLforDummies",JohnWiley&Sons,2015

8.Course Exit Survey

1. The students through the class rep may give their feedback at any time to the course HOD which will be duly addressed.
2. The students may also give their feedback during Class Committee meeting.
3. Course Outcome Survey' form will be distributed on the last working day to all the students and the feedback on various rubrics will be analyzed.
4. The COs will be computed after arriving at the final marks

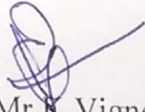
9.Course Policy

1. Attendance 100% is a must. However, relaxation up to 25% will be given for leave on emergency requirements (medical, death, etc.) and representing institute events.
2. Academic Honesty
 - i) Possession of any electronic device, if any, found during the test or exam, the student will be debarred for 3 years from appearing for the exam and this will be printed in the Grade statement/Transcript.
 - ii) Tampering of MIS records, if any, found, then the results of the student will be withheld and the student will not be allowed to appear for the Placement interviews conducted by the Office of Training & Placement.

10. Additional Course Information

The students can get their doubts clarified at any time with their faculty member.

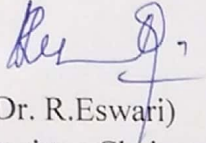
For Senate's Consideration



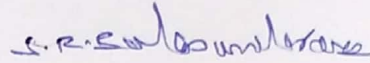
Mr. R. Vignesh
Course faculty



Mrs. A. Cynthia Devi
Course Faculty



(Dr. R. Eswari)
Committee Chairperson



(Dr. S. R. Balasundaram)
Head of the Department