National Institute of Technology Meghalaya

An Institute of National Importance

CURRICULUM

Programme	**Bachelor of Technology in Computer Science and Engineering**	Year of Regulation	**2019-2020**
Department	**Computer Science and Engineering**	Semester	**V**

Course Code	Course Name	Credit Structure				Marks Distribution		
		L	T	P	C	Continuous Assessments	Quiz / Viva	Total
CS 353	**Database Management Systems Lab**	**0**	**1**	**2**	**2**	**70**	**30**	**100**

Course Objectives

- **To understand the concept of Database Management System in practical view and software specific tools for information processing oriented framework.**
- **To understand and demonstrate the E-R data model in formal way and implementation of relational data model (E-R data model) in relational data model using query and procedure.**
- **To understand the real time problem, design an application as the developer to accomplish the given task.**
- **To understand and implement JDBC/ODBC concept for the operations for the developing database, Concurrent transaction processing and recovery in multiuser database environment.**

Course Outcomes

CO1	**Able to understand and demonstrate the real time challenges in the Database Management Systems, components of various software tools.**
CO2	**Able to design, Normalize, and implement the database schema for the given problems.**
CO3	**Able to construct the query using the SQL commands i.e. DDL/DML, declare and keep the integrity constraints on the developing database using the concept of Relational Database Management System.**
CO4	**Able to improve the performance of query and write the programming SQL such as stored procedure, cursor, stored functions.**
CO5	**Able to design and develop the graphical user interface application using fourth generation language to access the database.**

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CO1	3	3	0	0	0	0	0	0	2	0	0	0	3	0	3
2	CO2	3	3	3	1	2	0	0	0	1	0	0	0	2	3	2
3	CO3	1	2	3	3	2	2	0	0	0	0	0	0	2	3	3
4	CO4	1	2	3	3	3	2	3	0	2	0	0	1	2	3	2
5	CO5	2	3	3	2	2	3	2	0	2	0	0	1	3	3	3

SYLLABUS

No.	Content	Hours	COs
I	Assignment on Entity Relationship modeling of real world problems.	02	CO1
II	Assignment on creating relational databases with simple tables	02	CO1, CO2
III	Assignment on implementation of indexing structures	02	CO1, CO2
IV	Assignment on creating databases with indexing structures	02	CO3
V	Assignment on implementing SQL queries	02	CO3
VI	Assignment on creating views and queries based on views	02	CO3, CO4
VII	Assignment on write SQL queries using logical operations (=,<,>,etc)	02	CO3, CO4
VIII	Assignment on implementing embedded SQL queries	02	CO4
IX	Assignment on PL/SQL	02	CO4
X	Assignment on check pointing and recovery	02	CO4
XII	Assignment on implementing multi-user database.	02	CO5
XII	Mini Project using the selected RDBMS and front end tools.	02	CO5
	Total	24	

Essential Readings

1. Silberschatz, Korth and Sudarshan, Database system concepts, McGraw Hill, 7th Edition, 2019.
2. C.J. Date, An Introduction to Database Systems (8th Edition), Pearson, 8th Edition, 2004.
3. Steven Feuerstein, Bill Pribyl, “Oracle PL/SQL Programming,”, O'Reilly Media, 6th Edition, 2014.

Supplementary Readings

1. Elmasri and Navathe, Fundamentals of database systems; Pearson, 7th Edition, 2016.
2. Raghu Ramakrishnan and Gehrke, Database Management System, McGraw-Hill, 3rd Edition, 2014.
3. C. J. Date, SQL and Relational Theory: How to Write Accurate SQL Code, O'Reilly Media, 3rd Edition, 2015.