National Institute of Technology Meghalaya

An Institute of National Importance

CURRICULUM

Programme	**Master of Computer Applications**	Year of Regulation	**2024-25**
Department	**Computer Science and Engineering**	Semester	**III**

Course Code	Course Name	Pre-Requisite	Credit Structure				Marks Distribution		
			L	T	P	C	Continuous Evaluation	Quiz/ Viva	Total
CA553	**Database Management Systems Lab**		**0**	**1**	**2**	**2**	**70**	**30**	**100**

			CO's	Statement	Bloom's Taxonomy
Course Objectives	**To understand the concept of Database Management System in practical view and software specific tools for information processing oriented framework.**	Course Outcomes	CA553.1	**Able to understand and demonstrate the real time challenges in the Database Management Systems, components of various software tools.**	Apply
	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.		CA553.2	**Able to design, Normalize, and implement the database schema for the given problems.**	Create
	To understand the real time problem, design an application as the developer to accomplish the given task.		CA553.3	**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.**	Create
	To understand and implement JDBC/ODBC concept for the operations for the developing database, Concurrent transaction processing and recovery in multiuser database environment.		CA553.4	**Able to improve the performance of query and write the programming SQL such as stored procedure, cursor, stored functions.**	Apply
			CA553.5	**Able to design and develop the graphical user interface application using fourth generation language to access the database.**	Create

COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CA553.1	**3**	**3**							**2**				**3**		**3**
CA553.2	**3**	**3**	**3**	**1**	**2**				**1**				**2**	**3**	**2**
CA553.3	**1**	**2**	**3**	**3**	**2**	**2**							**2**	**3**	**3**
CA553.4	**1**	**2**	**3**	**3**	**3**	**2**	**3**		**2**			**1**	**2**	**3**	**2**
CA553.5	**2**	**3**	**3**	**2**	**2**	**3**	**2**		**2**			**1**	**3**	**3**	**3**
CA553	2.00	2.60	3.00	2.25	2.25	2.33	2.50		1.75			1.00	2.40	3.00	2.60

SYLLABUS

No.	Content	Hours	COs
I	Assignment on Entity Relationship modeling of real world problems.	**02**	**CA553.1**
II	Assignment on creating relational databases with simple tables	**02**	**CA553.1, CA553.2**
III	Assignment on implementation of indexing structures	**02**	**CA553.1, CA553.2**
IV	Assignment on creating databases with indexing structures	**02**	**CA553.3**
V	Assignment on implementing SQL queries	**02**	**CA553.3**
VI	Assignment on creating views and queries based on views	**02**	**CA553.3, CA553.4**
VII	Assignment on write SQL queries using logical operations (=,<,>,etc)	**02**	**CA553.3, CA553.4**
VIII	Assignment on implementing embedded SQL queries	**02**	**CA553.4**
IX	Assignment on PL/SQL	**02**	**CA553.4**
X	Assignment on check pointing and recovery	**02**	**CA553.4**
XII	Assignment on implementing multi-user database.	**04**	**CA553.5**
XII	Mini Project using the selected RDBMS and front end tools.	**04**	**CA553.5**
Total Hours		**28**	

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.