**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Even Semester) Session (2019-2020)**

*Class: M.Sc (IT) IInd Sem Name of the Teacher: Anu Chawla*

*Subject:* Advanced Database Programming & MySQL *Period : 3rd(Mon-Tue,Thurs-Sat),6th(Thurs)*

*Paper : MS-60 Room No : Lab 3 (IT Block)*

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 09-01-2020 to 11-01-2020 | Introduction to Database Management Systems, Database Management Systems: Definition, Characteristics |
| Week 2 | 13-01-2020 to 18-01-2020 | Advantages of Using DBMS Approach , Data Models |
| Week 3 | 20-01-2020 to 25-01-2020 | Classification of DBMSs, Database Schema and Instance, Three Schema Architecture, Data  Independence – Physical and Logical data Independence |
| Week 4 | 27-01-2020 to 01-02-2020 | Entity- relationship model : Entities, Relationships, Representation of entities, attributes, Representation of relationship set, Generalization, aggregation. |
| Week 5 | 03-02-2020 to 08-02-2020 | Normalization: Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive Dependency, Normal Forms– 1NF, 2NF, 3NF, BCNF, Multi-valued Dependency. |
| Week 6 | 10-02-2020 to 15-02-2020 | Relational Algebra and Relational Calculus  : Relational Algebra: Operations- Union, Intersection, Difference, Cartesian product, Projection, Selection, Division and relational algebra queries; |
| Week 7 | 17-02-2020 to 22-02-2020 | Relational Calculus: Tuple oriented and domain oriented relational calculus and its operations. |
| Week 8 | 24-02-2020 to 29-02-2020 | MySQL : Introduction; Why MySql; Tools provided with MySQL; MySQL Architectural Terminology;Databases:Creating, Selecting, Dropping and Altering Databases;  Tables: Creating, dropping Altering, Indexing Tables; Adding new rows, Retrieving Information, Deleting or Updating Existing rows; |
| Week 9 | 02-03-2020 to 05-03-2020 | Foreign *Keys and Referential Integrity; MySQL DataTypes; Sequences.* |
| Mid Semester Exams (06-03-2020 to 13-03-2020) | | |
| Week 11 | 14-03-2020, 16-03-2020 to 21-03-2020 | Obtaining MySQL Metadata; Joins; Subqueries; Views; Multiple Tables Deletion and Updation; |
| Week 12 | 24-03-2020 to 28-03-2020 | Transaction and Concurrency control  : Concept of transaction, ACID properties, Serializibility, States of  Transaction |
| Week 13 | 30-03-2020 to 04-04-2020 | Concurrency control: Locking techniques, Time stamp based protocols, Granularity of data items, Deadlock. |
| Week 14 | 07-04-2020 to 11-04-2020 | Data Warehousing: Introduction; Features; Data modeling for Data Warehousing; Building Data  warehouse; Comparison between Data Warehouse and DBMS Metadata; Problems and issues in Data Warehouse. |
| Week 15 | 15-04-2020 to 18-04-2020 | Data Mining: Overview; Goals of Data Mining; Techniques: Association rules(Market Basket Algorithm, Apriori Algorithm); |
| Week 16 | 20-04-2020 to 24-04-2020 | Classification: Decision Tree, Induction Algorithm;  Applications of Data Mining |
| Week 17 | 27-04-2020 to 02-05-2020 | Revision |
| Week 18 | 04-05-2020 | Revision |