Syllabus

B.Sc. Comp Sc. (Minor)

Programme/Class: **Certificate**	Year: **First**	Semester: **First & Second**
Subject: **Computer Science**		
Course Code: B070202T	Course Title: **Computer Fundamental (Minor)**	

Course outcomes:

After the completion of the course the students will be able to:

1 Understands the basic concepts of data base management systems.
2 Design E-R diagrams for real world applications.
3 Formulate relational algebraic expressions using relational data models and languages.
4 Apply normalization transaction properties and concurrency control to design database.
6. Analyze the security algorithms for database protection.

Credits: **4**	**Core Minor**
Max. Marks: **25+75**	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): **4-0-0**

Unit	Topic	No. of Lectures
I	Introduction to computer, Basics of Computer its operation, History of Computer, Advantage and Disadvantage of computer, Type of computers, Hardware and Software, Various Storage Devices.	14
II	Windows Operating System: Basics of Operating System, The User Interface (Task bar, Icons, Menu, Running an application), File and Directory Management (Creating and rename of file and directories), Operating System Simple setting (Changing date & time, changing display properties, changing mouse properties, changing keyboard properties).	16
III	Understanding Word Processing & Spread Sheet: Basic Concept of Word Processing, Opening and Closing Document, Text Create and Manipulation, Formatting the Text, Element of Spread Sheet, Manipulation of Spread Sheet.	14
IV	Computer Network & Internet: Data Communication, Computer Network, Internet, Popular Web Browsing, Software, Search Engine, Web Page, Website, URL, E-Mail, Application of Internet.	16

Suggested Readings:

1. Henry F. Korth and Abraham Silberschatz, "Database System Concepts," Second Edition, McGraw Hill, 1991.
2. AtulKahate, "Introduction to Database Management Systems," Pearson India, 2004.
3. Raghu Ramakrishnan and Johannes Gehrike, "Database Management Systems," Third McGraw Hill, Edition, 2003.
4. R. Elmasri, S.B. Navathe Database Systems Models, Languages, Design and application Programming, 6 Edition, Pearson Education,2013.
5. A. Silberschatz, H.F. Korth, S. Sudarshan, Database System Concepts 6th Edition, McGraw Hill, 2010.
6. C.J Date " An Introduction to Database Systems", Addison Wesley

This course can be opted as an elective by the students of following subjects:
B. Sc in Engineering and BCA

Suggested Continuous Evaluation Methods:

5. **Assessment Type: Class Tests (Max. Marks 14)**
   Suggested Usage:
   Include all types of questions-essay, short answer, objective; Design to test all levels of domain; Exam Blue Print be prepared to ensure inclusion of all types & levels of questions and proper sampling of content; Marking Criteria made known to students; Teacher should provide written feedback selectively and discuss answers in the class; Only Role/Code numbers , not names be written to avoid bias in marking; Display of model answer copies.
   After Completion of Unit I and Unit II, a first class test of max. marks of 7 shall be conducted.
   After Completion of Unit III and IV, a second class test of max. marks of 7 shall be conducted.
   If any student does not appear in any one or both class test, a makeup test shall be conducted of max. marks of 5 instead of total 14 marks.
6. **Assessment Type: Quizzes/ Objective Tests / Recognition Type (such as MCQs; True or False; Matching; Classifying) /Recall Type -Filling Blanks; One word / Phrase Answers (Max Marks: 5)**
   Suggested Usage: Teachers be trained in construction, advantages, disadvantages and precautions while preparing different types of objective items; Go beyond factual information to High Order Thinking (HOT) Skills. It shall be "End of the class quiz".
7. **Assessment Type: Assignments (Max Marks: 4)**
   Suggested Usage: Some class assignments shall be given to students at the end of each Unit. Note making techniques be taught to students; Not just direct questions from notes, but application analysis and synthesis of that knowledge.
8. **Assessment Type: Class Interaction (Max. marks: 2)**

Course prerequisites: To study this course, a student must have had the subject Mathematics in class 12th and Problem solving using computers in first semester.

Suggested equivalent online courses:

Further Suggestions:

Programme/Class: **Certificate**	Year: Second	Semester: ~~Second~~ Forth & **Forth**
Subject: **Computer Science**		
Course Code: B070402T	Course Title: **Database Management System (DBMS)(Minor)**	

Course outcomes:

After the completion of the course the students will be able to:

7. Understands the basic concepts of data base management systems.
8. Design E-R diagrams for real world applications.
9. Formulate relational algebraic expressions using relational data models and languages.
10. Apply normalization transaction properties and concurrency control to design database.
11. Analyze the security algorithms for database protection.

Credits: **4**	**Core Compulsory**
Max. Marks: **25+75**	Min. Passing Marks:

Total No. of Lectures-Tutorials-Practical (in hours per week): **4-0-0**

Unit	Topic	No. of Lectures
I	Introduction: Introduction to Database, Relational Data Model, Database Management Architecture, Data Independence, Data Abstraction, DBA Data Users, End Users, Front end Tools. Data Modeling: Entity Types, Entity Set, Attribute and Key, Relationships, Relation Types, ER Diagrams, Database Design using ER Diagrams.	15
II	Relational Data Model: Relational Model Concepts, Relational Constraints, Primary Key, Foreign Key, Candidate Key, Alternate Key, Composite & Super Key. Data Redundancy, Normalization: 1NF, 2NF, 3NF.	15
III	Structured query Language: Introduction to SQL, Concepts of Data Definition Language, Concepts of Data Manipulation Language, DDL Queries: Such as - Create Database, Drop a Database, Create Table, Drop Table, Alter Table. DML Queries: Inserting Data in a Table, Update in a Table, Delete data From a Table, Filter Data,	15
IV	Create Relationship Between Database Table, Auto Increment, Check, Null values, Aggregate Function- Min, Max, Count, Average, Sum, Join Operation.	15

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