

University of Mumbai



Title of the program

- A-** U.G. Certificate in Information Technology
- B-** U.G. Diploma in Information Technology
- C-** B.Sc. (Information Technology)
- D-** B.Sc. (Honours) in Information Technology
- E-** B.Sc. (Honours with Research) in Information Technology

Syllabus for Semester –

Sem I & II

Ref: GR dated 20th April, 2023 for Credit Structure of UG

(With effect from the academic year 2024-25 Progressively)

Skill Enhancement Course (SEC)

Name of the Course: Office Tools for Data Management

| Sr.No. | Heading | Particulars |
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| 1 | Description the course: | <ul style="list-style-type: none">• Introduction: The MS Access course offers a comprehensive understanding of Microsoft's relational database management system, making it a valuable skill in today's data-driven environment. This course is designed to empower individuals with the tools needed to efficiently organize, manage, and analyse data.• Relevance and Usefulness: It provides practical insights into leveraging a relational database system for enhanced efficiency and organization. The MS Access course is useful for individuals seeking to enhance their data management skills.• Applications: With applications in various sectors, from business to research and project management, MS Access is versatile. It facilitates the creation of databases for tasks ranging from contact management to complex systems for inventory and financial analysis.• Interest and Connection with Other Courses: Its practical applications and user-friendly interface make it attractive to individuals looking to boost their data management skills. The MS Access course establishes a practical link with other data-related courses, offering foundational knowledge in database management. It complements courses in data analysis, business intelligence, and information systems.• Demand in the Industry: As businesses increasingly rely on data for decision-making, there is a growing demand for professionals skilled in database management. Proficiency in MS Access is particularly sought after in roles involving data organization, analysis, and reporting.• Job Prospects: Professionals completing the MS Access course are well-positioned for roles requiring efficient data management and analysis. Job prospects include positions in database administration, data analysis, and business intelligence, where MS Access proficiency is a valuable asset. |
| 2 | Vertical : | Skill Enhancement Course(SEC) |
| 3 | Type : | Practical |
| 4 | Credits : | 2 credits |
| 5 | Hours Allotted : | 60 Hours |
| 6 | Marks Allotted: | 50 Marks |
| 7 | Course Objectives (CO): | |

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| | <p>CO 1. Participants will grasp essential database concepts, including tables, relationships, and normalization principles.</p> <p>CO 2. Participants will design and construct well-organized databases in MS Access, showcasing proficiency in table design and data validation.</p> <p>CO 3. Participants will master the creation of complex queries in MS Access, enabling them to extract specific information efficiently.</p> <p>CO 4. Participants will develop expertise in crafting user-friendly forms and interfaces in MS Access, optimizing data entry processes.</p> <p>CO 5. Participants will generate comprehensive reports in MS Access, demonstrating skills in grouping, sorting, and presenting data for meaningful analysis.</p> | |
| <p>8</p> | <p>Course Outcomes (OC):</p> <p>OC 1. Participants can explain normalization importance, identify table relationships, and justify database design choices.</p> <p>OC 2. Participants create well-structured MS Access databases with proper relationships, data types, and normalization.</p> <p>OC 3. Participants execute advanced queries in MS Access, retrieving specific information based on diverse criteria.</p> <p>OC 4. Participants design intuitive MS Access forms, incorporating controls for an efficient and user-friendly data entry experience.</p> <p>OC 5. Participants produce insightful MS Access reports, organizing and presenting data effectively for analysis.</p> | |
| <p>9</p> | <p>Modules:- All Practicals are based on MS Access</p> <p>Module 1:</p> <p>Practical 1:</p> <p>A. Getting familiar with MS Access Ribbon options.</p> <p>B. With the help of access wizard Create Database. Add 2 Tables. In each table add 5 columns of different data types. Add 10-10 entries in each table. Add necessary integrity constraints.</p> <p>C. Use the Table Wizard to create a table. Add and delete fields in an existing table. Establish an input mask and validation rule for fields within a table. Switch between the Design and Datasheet views of a table.</p> <p>Practical 2:</p> <p>A. Create and use an Input Mask to enter the data in sample table.</p> <p>B. Adding records in table by using Datasheet View, using a Form and using SQL.</p> <p>C. Create the Employee Database with necessary table and data and then implement the following transitions:</p> <ul style="list-style-type: none"> • Delete the record for Kelly Marder. • Change Pamela Milgrom's salary to \$59,500. • Use the Replace command to change all occurrences of "Manager" to "Supervisor". <p>Practical 3:</p> <p>A. Create the Bookstore database with necessary table and data and modify the database to accommodate the following:</p> | <p>30 Hrs</p> |

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| | <ul style="list-style-type: none"> i. Add the book Exploring Microsoft Office 2000 Vol II (ISBN: 013-011100-7) by Grauer/Barber, published in 1999 by Prentice Hall, selling for \$45.00. ii. Change the price of Memory Management for All of Us to \$29.95. iii. Delete The Presentation Design Book. <p>B. Create a table employ with (idno, name, job, age, salary). Insert 10 records. Create a query to display the information of all managers. Create a query to display the names of employs who"s salary is >15000.</p> <p>C. Use the Form Wizard to create a form, Move and size controls within a form. Use the completed form to enter data into the associated table.</p> <p>Practical 4:</p> <ul style="list-style-type: none"> A. Add fields to an existing table. Use the Lookup Wizard to create a combo box. Add controls to an existing form to demonstrate inheritance. Add command buttons to a form. B. Generate and use various the queries using Query Wizards. C. Generate and use various the Query with User Input. D. Demonstrate use of Expression Builder. <p>Practical 5:</p> <ul style="list-style-type: none"> A. Use the report wizard to create a new report. Modify an existing report by adding, deleting, and/or modifying its controls. B. Create a query containing a calculated control. Then, create report based on that query. Use the Sorting and Grouping command to add a group header and group footer to a report. C. Use action queries to modify a database. Create a crosstab query to display summarized values from a table. | |
| Module 2: | | |
| | <p>Practical 6:</p> <ul style="list-style-type: none"> A. Create and Open a database with multiple tables; Identify the one-to-many relationships within the database and to produce reports based on those relationships. B. Create and Open a database with multiple tables; Identify the one-to-one relationships within the database and to produce reports based on those relationships. C. Create and Open a database with multiple tables; Identify the Many-to-Many relationships within the database and to produce reports based on those relationships. <p>Practical 7:</p> <ul style="list-style-type: none"> A. Demonstrate use of look up tables. B. Use the Report Wizard to create a report having the following requirements: <ul style="list-style-type: none"> i. Select the LastName field from the Author table. ii. Select the Title and Price fields from the Book table. iii. Select the PubName field from the Publisher table. | <p>30 Hrs</p> |

- iv. View the data by Publisher.
 - v. Add a grouping level using LastName.
 - vi. Sort the report by the Title field in ascending order.
 - vii. Choose Stepped layout and Portrait orientation.
 - viii. Type Book List as the report's title.
- C. Define the relationship between two tables and add a subform to a form.

Practical 8:

- A. Import an Access table from an Excel workbook. Create a one-to-many relationship between tables in a database. Create a multiple-table query.
- B. Import external data from the Excel spreadsheet file Bookstore.
- i. Make sure Import the source data into a new table in the current database is selected.
 - ii. Select the Author worksheet.
 - iii. Make sure that First Row Contains Column Headings is selected.
 - iv. For the AuthorID field, set the Data Type option to Long Integer and set the Indexed option to Yes (No Duplicates).
 - v. Select Choose my own primary key and make sure the AuthorID field is selected.
 - vi. Save the table with the name Author.
- C. Export data from access to various formats.

Practical 9:

- A. Relationships: Create and Use Author and Book Table.
- i. Create a relationship between the AuthorID field in the Author table and the AuthorCode field in the Book table. Put a checkmark in the box labeled Enforce Referential Integrity.
 - ii. Create a relationship between the PubID field in the Publisher table and the PubID field in the Book table. Put a checkmark in the box labeled Enforce Referential Integrity.
- B. Create a switchboard; Use the Link Tables command to associate tables in one database with the objects in a different database.
- C. Create an AutoExec and a Close Database macro and demonstrate the use.

Practical 10:

- A. Create the College Library database find out the following: -
- i. Total no. of copies of books subject wise.
 - ii. A report displays all books group by Publisher.
 - iii. A report displays all books group by Book Title.
 - iv. A report displays all books group by Book Edition
- B. Demonstrate the use of Database Splitter Wizard by splitting database.
- C. Make Access database as an executable-only

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Online reference/Text Books

1. https://www.quackit.com/microsoft_access/tutorial/

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| | 2. https://www.tutorialspoint.com/ms_access/index.htm 3. Access 2016 in easy steps, by Mike McGrath, In Easy Steps, 1st Edition, 2017 4. Relational Databases and Microsoft Access, by Ron McFadyen, 1st Edition |
| 11 | Reference Books 1. MICROSOFT ACCESS 2019 by David Murray, Kendall Hunt Publishing, 1 st Edition, 2020. 2. Step by Step Microsoft Access 2013, by Joyce Cox and Joan Lambert, 1 st Edition, Microsoft Press, 2013 3. Access 2019 Bible, by Michael Alexander, Richard Kusleika, Wiley, 1 st Edition, 2018 4. Access 2019 For Dummies, by Laurie A. Ulrich, Ken Cook, Wiley, 1 st Edition, 2018 |
| 12 | Internal Continuous Assessment: 40% Semester End Examination: 60% |
| 13 | Continuous Evaluation through: Students are expected to attend each practical and submit the written practical of the previous session. Performing Practical and writeup submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and writeup submission totalling to 50 marks and can be converted to 20 marks. |
| 14 | Format of Question Paper: Duration 2 hours. Certified copy of Journal is compulsory to appear for the practical examination Practical Slip: Q1. From Module 1 13 marks Q2. From Module 2 12marks Q3. Journal and Viva 05 marks |

Name of the Course: Fundamentals of Telecommunication Systems

| Sr.No | Heading | Particulars |
|----------|---|---|
| 1 | Description the course : Including but Not limited to: | <p>The course on Fundamentals of Telecommunication Systems aims to provide an in-depth understanding of the basic concepts and theories of signals and systems, as well as their applications in the field of telecommunication engineering. The course also focuses on the latest trends in 5G technology, providing students with insights into the driver, pillars, and challenges of 5G networks.</p> <p>Relevance and Usefulness: The course is highly relevant to students pursuing degrees in electronics and communication engineering, as well as those interested in telecommunications engineering. By focusing on key concepts and terminologies, such as sets, mappings, functions, and systems operators, the course provides a foundation for understanding both the theoretical and</p> |