

Agenda No. 2.03 in AC 2022-23 and Date: 23/03/2022



Vidya Prasarak Mandal's
K.G. Joshi College of Arts & N.G. Bedekar College of
Commerce
(Autonomous)

(Affiliated to University of Mumbai)

Program:BCOM

Specific Programme: Computer Programming - JBCUCCP

Syllabus for SYBCOM

Year of Establishment: 1969

Year of Upgrading: 2022-2023

Specific Programme: Computer Programming - JBCUCCP

PREAMBLE

The syllabus is about developing skills to learn new technology, grasping the concepts and issues behind its use and the use of Computers. It enables the students to gain knowledge which is concerned with the software and hardware of a computer, its logic design, organization and Computer programming.

The main objective of this program is to inculcate among the students, the practical as well as the theoretical knowledge about the computer devices and Python Programming concepts and its applications.

Students need to encourage and understand the computer architecture in order to make best use of the CPU, software tools and computer languages they use to write and solve practical programs. Also facilitating the student to understand the various functionalities of DBMS software using MySQL to create and modify the database.

In addition to theoretical knowledge, significant emphasis has been given to provide hands on practical experiences to the students in the various concepts included such as Algorithms, Flow charts & Internet and Network models.

Eligibility: A student must have successfully cleared the HSC (12th) examination

Programme Duration: Three years (Entire BCOM Course)

Mode of Delivery: Offline (Online, in case of emergency)

DISTRIBUTION OF TOPICS AND CREDITS

Course	Course name	Semester	Course Nomenclature	Course Code	Credits
1	Computer Programming	III	Computer Programming-I	JBCUCCP301	3
		IV	Computer Programming-II	JBCUCCP401	3

**(Credit Based Semester and Grading System with effect from
the academic year 2022–2023)**

**Programmes-Specific Outcomes:
Computer Programming -JBCUCCP**

PROGRAMME - SPECIFIC OUTCOMES

PSO	PSO Description
PSO1	To impart knowledge about commercial and managerial aspects of business along with social and ethical issues
PSO2	To acquaint the learners about basic concepts of business communication, mathematical and statistical tools, environmental and other social issues related to commerce and management
PSO3	To make the learners aware about basic concepts of marketing management, production management, human resource management, export marketing and financial management along with the recent trends and developments in it
PSO4	To give a working knowledge in respect of cost accounting, management accounting, financial accounting, auditing and taxation
PSO5	To make the learners aware about various aspects of micro and macro economics and also about Indian financial system and recent development in it
PSO6	To acquaint the learners about business law, company secretarial practices and computer systems, its applications and network infrastructure

COURSE OUTCOMES

Semester-III

Course Nomenclature: Computer Programming-I

Course Code: JBCUCCP301

1. To get an overview of Computer Programming.
2. To learn the basic components of a Digital Computer, CPU, Number systems.
3. To learn detailed knowledge about Hardware & Software, their types and language translators.
4. To get theory and practical knowledge exposure to Algorithm writing, Flow Charts drawing, and Python-Programming language.

Semester-IV

Course Nomenclature: Computer Programming-II

Course Code: JBCUCCP401

1. To learn the basics of Computer Communication Systems.
2. To understand Internet, types of connections, OSI and TCP/IP model, e-Mail, Protocols, IP address, DNS, WWW, Browsers, Search Engines and Web Crawlers.
3. To be train in Database, Introduction to DB, Relational databases, MySQL Basics.
4. To get theory and practical knowledge exposure to SQL: using software study of RDBMS using MySQL.
5. To improve practical understanding and develop the competence of DB, data types, keys and creating DB, Table structure, MySQL Simple queries, and Multi-Table Queries.

SYBCOM

Computer Programming-I

SEMESTER-III

TITLE: COMPUTER PROGRAMMING

SUB-TITLE: COMPUTER PROGRAMMING

Total No. of lectures: (45)
(11)

1 **HARDWARE**

COMPUTER GENERATIONS, TYPES, SPEED, BINARY NUMBERS

HARDWARE: Evolution of Computers - Generations, Types of computers, Computer system, characteristics, Basic components of a Digital Computer - Control Unit, ALU, Input / Output, functions and memory, Memory addressing capability of a CPU, Binary number system, Binary addition (1's complement, 2's complement), Binary to decimal and decimal to binary conversion, Octal number, Hexadecimal number system, Word length of a computer, processing speed of a computer.

2 **SOFTWARE**

SOFTWARE: Software and its Need, Types of Software - System software, Application software. System Software - Operating System, Utility Program, Algorithms, Flow Charts - Symbols, Rules for making Flow chart, Programming languages, Assemblers, Compilers and Interpreter, Computer Applications in Business.

3 **PYTHON PROGRAMMING**

Introduction, Syntax, Comments, Variables, Data Types (text, numeric), Numbers, Casting, String, Booleans Operators, Lists, Tuples, Sets, Dictionaries.

4 **PYTHON PROGRAMMING**

if..else, loops (while, for loops), Functions, lambda, date and time functions (datetime module, now, strftime), Math functions (Math module, min, max, abs, pow, sqrt, ceil, floor, pi, fmod, fsum, prod, trunc), string functions (String Methods, capitalize, lower, upper, center, count, find, endswith, startswith, lstrip, rstrip, replace, split, rsplit), string formatting, Data Visualization - Labels, Bar, Line, Scatter, Pie Chart and Histogram.

Computer Programming-II

SEMESTER-IV

TITLE: COMPUTER PROGRAMMING

SUB-TITLE: COMPUTER PROGRAMMING

Total No. of lectures: (45)

1 Computer Communications Systems (12)

1. **Computer Communications Systems:** The Internet, Internet connections, ISO's Open system interconnection reference model, The TCP/IP stack, E-Mail, Internet addresses, Internet Protocol, SMTP, MIME POP, IMAP, Domain Name system, Telnet, FTP, WWW, Browsers, HTML, HTTP, JAVA. Intranet, Intranet Services and their advantages. Extranets. Search Engine and Web Crawlers.

2 Database and MySQL (09)

1. **Introduction:** To Databases, Relational and Non-relational database system MySQL as a Nonprocedural Language. View of data.

2. **MySQL Basics:** Statements (Schema Statements, Data statements, Transaction statements), names (table & column names), data types (Char, Varchar, Text, Mediumtext, Longtext, Smallint, Bigint, Boolean, Decimal, Float, Double, Date, Date Time, Timestamp, Year, Time).

3 Database and MySQL (12)

1. **MySQL Basics**—Creating Database, Inserting data, Updating data, Deleting data, expressions, Built-in-functions- lower, upper, reverse, length, ltrim, rtrim, trim, left, right, mid, concat, now, time, date, curdate, day, month, year, dayname, monthname, abs, pow, mod, round, sqrt Missing Data (Null and Not Null Default Values) Create, Use, Alter (Add, Remove, Change Columns), Rename, Show, Describe (Create Table, Columns, Status and Databases Only) and Drop (Table, Column, Databases Statements), Primary Key Foreign Key (One and More Columns) Simple Validity Checking Using Constraints.

2. **MySQL Simple queries:** The SELECT Statement (From, Where, Group By, Having, Order By, Distinct), Filtering Data By Using Conditions. Simple and Complex Conditions Using Logical, Arithmetic and Relational Operators (=, !=, <, >, AND, OR, NOT, LIKE) Aggregate Functions - Count, Sum, Avg, Max, Min.

4 Database and MySQL (12)

1. **Multi-table queries:** Simple joins (INNER JOIN), SQL considerations for multi table queries (table aliases, qualified column names, all column selections self joins).

2. **Nested Queries (Only upto two levels) :** Using sub queries, sub query search conditions, sub queries & joins, nested sub queries, correlated sub queries, sub queries in the HAVING clause. Simple Transaction illustrating START, COMMIT, and ROLLBACK.

Paper I: Computer Programming
Semester-III

Course Nomenclature: COMPUTER PROGRAMMING-I

Course Code: JBCUCCP301

	Lectures
Unit I: Hardware	11
1. Computer Generations, Types, Speed, Binary Numbers	
Unit II: Software	11
1. Software and Its Needs	
2. Algorithms	
3. Flowcharts	
4. Computer Applications in Business	
Unit III: Introduction to Python-Programming	10
1. Introduction, Syntax, Comments, Variables	
2. Data Types, Numbers, Casting, String, Booleans	
3. Operators, Lists, Tuples, Sets, Dictionaries	
Unit IV: Python-Programming - Decision & Loop Statements	13
1. if..else, loops (while, for), Loops	
2. Functions, lambda, date and time functions	
3. Maths functions, string functions, string formatting	
4. Data Visualization - Labels, Bar, Line, Scatter, Pie Chart and Histogram	

Paper II: Computer Programming

Semester-IV

Course Nomenclature: COMPUTER PROGRAMMING-II

Course Code: JBCUCCP401

	Lectures
Unit I: Computer Communications Systems	12
1. Computer Communications Systems	
Unit II: Database and MySQL	09
1. Database and SQL	
2. Introduction to MySQL	
Unit III: Database and MySQL	12
1. Creating Database and Tables	
2. Built in functions in MySQL	
Unit IV: Database and MySQL	12
1. Retrieving Data from MySQL Table	
2. MySQL Sub Queries	

REFERENCES

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- Raghu Ramakrishnan, Johannes Gehrke - Database Management Systems -Third Edition - McGraw-Hill – 2006

Modality of Assessment

A. Internal Assessment: 40% - 40 Marks

Serial No.	Evaluation Type	Marks
1	Practical (Machine) Test	20
2	Practical/Assignment/File	10
3	Viva Voce	05
4	Class Participation/Attendance	05
	Total:	40

B. External Examination: 60%- 60 Marks

Semester End Theory Examination

Time: 2 hours

- NB.
1. All questions are compulsory.
 2. Each question has internal options.
 3. Figures to the right indicate marks.

Q1. A. MCQs - Attempt <u>any SIX</u> out of eight questions (Unit I to IV)	06
B. True or False - Attempt <u>any SIX</u> out of eight questions (Unit I to IV)	06
Q2. Attempt <u>any TWO</u> out of three/four questions (Unit I)	12
a) b) c) d)	
Q3. Attempt <u>any TWO</u> out of three/four questions (Unit II)	12
a) b) c) d)	

Q4. Attempt <u>any TWO</u> out of three/four questions (Unit III) a) b) c) d)	12
Q5. Attempt <u>any TWO</u> out of three/four questions (Unit IV) a) b) c) d)	12

Semester – III: Practicals JBCUCCP301

Python Practicals based on JBCUCCP301

1. Algorithm (Simple, if..else, loops)
2. Flowchart (Simple, if..else, loops)
3. Python basic programs (Syntax, Variables, Data Types, Operators, Lists, Tuples, Sets, Dictionaries)
4. Conditional statements (if...else)
5. Loops (while, for)
6. Create Functions, use of In-built Functions (Date and Time, Maths, String functions)
7. Data Visualization (Labels, Bar, Line, Scatter Pie Chart and Histogram)

Semester – IV: Practicals JBCUCCP401

MySQL Practicals Based on JBCUCCP401

1. Database and Table (Primary Key, Foreign Key, Create, Alter, Change, Use, Show)
2. Working with Data (Select, Insert, Update, Delete)
3. Select Statement, Expressions, Clause
4. Functions (Built-in-Functions)
5. Filtering Data (Conditions, Logical, Arithmetic and Relational Operators)
6. Simple Joins, Using Sub Queries
7. Simple Transactions (START, ROLLBACK, COMMIT)

Workload:

Theory: 3 lectures per week.

Practicals : 3 lecture periods per week per batch.

