

**Savitribai Phule Pune University, Pune**

**Bachelor of Business Administration (Computer Application)**

**BBA(CA)**

**(Under faculty of Commerce & Management)**

**(To be implemented from Academic year 2019-20)**

**1. Name of Programme:** Bachelor of Business Administration (Computer Application)

**2. Introduction:**

The degree shall be titled as Bachelor of Business Administration (B.B.A.)( Computer Application) under the Faculty of Commerce and Management. First Year B.B.A.(CA) choice based credit system is implemented w.e.f. the academic year 2019-2020 , Second Year B.B.A.(CA) II will be implement w.e.f. 2020-2021 and Third Year B.B.A.(CA) III w.e.f. 2021-2022

**3. Programme Objectives:**

- To produce skill oriented human resource.
- To impart practical skills among students.
- To make industry ready resource.
- To bring the spirit of entrepreneurship.

**4. Programme Structure:**

- The Programme is of a Three Year (Six semesters) Full Time Degree Programme.
- The programme shall be based on credit system comprising 132 credits.

## **5. Eligibility for Admission**

- A candidate is eligible for admission to the Degree in Bachelor of Business Administration – Computer Application after passing 12th Std. examination (H.S.C. 10 +2) from any stream with English as passing subject and has secured 40% marks at 12<sup>th</sup> std.
- Three Years Diploma after S.S.C. i.e. 10<sup>th</sup> Standard of Board of Technical Education conducted by Government of Maharashtra or its equivalent.
- Two Years Diploma in Pharmacy after H.S.C., of Board of Technical Education conducted by Government of Maharashtra or its equivalent.
- MCVC

## **6. Medium of Instruction: English**

## **7. Award of Credits:**

- Each course having 3 credits shall be evaluated out of 100 marks and student should secure at least 40 marks to earn full credits of that course.
- Each course with 2 credits for Sem-I & Sem-II, Sem-V & Sem-VI is divided in theory (50%) & practical (50%) and for Sem-III, IV there will be project work for students. For all practical and project there will be university evaluation. For Sem-I, II, V & VI (30% Internal & 70% External) is the pattern of evaluation.
- GPA shall be calculated based on the marks obtained in the respective subject provided that student should have obtained credits for that course.

## **8. Evaluation Pattern:**

- Each course carrying 100 marks shall be evaluated with Continuous Assessment (CA) and University Evaluation (UE) mechanism. Continuous assessment shall be of 30 marks while University Evaluation shall be of 70 marks. To pass in the course, a student has to secure minimum 40 marks provided that he should secure minimum 28 marks in University Evaluation (UE).
- CA shall be based on internal tests (minimum 2 for 20 marks). In addition, for remaining 10 marks a teacher may assign various activities such as home assignments,

tutorials, seminars, presentations, group discussion etc, to the students and evaluate accordingly.

**9. Method of Evaluation and Evaluation Criteria:** - 1. Internal Assessment 30 marks for all theory related subjects 2. Practical and Project will be evaluated separately 3.SPPU - Examination will be 70 marks

- **1. Instructions for teachers for internal evaluation for 30 Marks** - The purpose of internal evaluation is to assess the depth of knowledge, understanding and awareness. For this purpose a teacher is expected to use different evaluation methods in order to have rational and objective assessment of the learners and available resources.
- The class work will carry 30 marks in each course. Internal Evaluation includes continuous evaluation of a student by adopting variety of techniques such as Assignments, Presentation, Internal examination, Group Discussions , Projects etc.
- There shall be Four small projects /Tutorials for internal evaluation as compulsory part of assessment (Semester I ,II ,III and IV).

## **2. Project Examination**

For course on Practical and Project work as per the regular practice there will be Written Report and viva presentation of 100 marks at SPPU level.

**3. External Examination:** - There will be written Examination of 70 marks and 3 hrs duration for every course at the end of each Semester.

### **Setting of Question Papers (Applicable to theory subjects)**

1. A candidate shall have to answer the questions in all the subjects in English only.
2. Question papers shall be framed so as to ensure that no part of the syllabus is left out of study by a candidate.
3. question paper shall be balanced in respect of various topics outlined in the syllabus.
4. The question papers shall have a combination of long, short answer and MCQ type questions.

#### 10. Restructuring of courses –Equivalence and Transitory Provision

The University will conduct examination of old course for next three academic years from the date of implementation of new course.

The candidate of old course will be given three chances to clear his subjects as per the old course and thereafter he will have to appear for the subjects under new course as per the equivalence given to old course.

#### 11. Completion of Degree Programme:

A student who earns 132 credits, shall be considered to have completed the requirements of the B.B.A.(CA) degree program and CGPA will be calculated for such student.

#### 12. Credit Allocation

**CC-Core Course, EC-Elective Course, PR-Practical, PJ-Project, AECC-Ability Enhancement Compulsory Courses, SEC-Skill Enhancement Courses.**

**Total - 132 Credits for Three years Programme**

| Sr. No. | Sem ester | CC – Credit | EC Credit | PR Credit | PJ Credit | AEC C-credit | SEC – Credit | Lectures + Project +add on courses= Total Credits |
|---------|-----------|-------------|-----------|-----------|-----------|--------------|--------------|---------------------------------------------------|
| 1       | I         | 15          |           | 4         |           |              | 2            | 15+4+2 =21                                        |
| 2       | II        | 15          |           | 4         |           |              | 2            | 15 +4 +2=21                                       |
| 3       | III       | 9           | 6         | 6         |           | 2            |              | 9+6+6+2=23                                        |
| 4       | IV        | 9           | 3         | 4         | 4         |              | 2            | 9+3+4+4+2=22                                      |
| 5       | V         | 9           | 3         | 4         | 4         |              | 2            | 9+3+4+4+2=22                                      |
| 6       | VI        | 10          | 3         | 4         | 4         |              | 2            | 10+3+4+4+2=23                                     |
| Total   |           | 67          | 15        | 26        | 12        | 2            | 10           | 67+15+26+12+2+10=132                              |

**13. Titles of Papers and Scheme of Study for B.B.A. (C.A.) Programme****CC-Core Course, EC-Elective Course, PR-Practical, PJ-Project,****AECC-Ability Enhancement Compulsory Courses, SEC-Skill****Enhancement Courses.****SEMESTER- I**

| <b>Subject Code</b> | <b>Subject Name</b>                                       | <b>Course</b> | <b>Credits</b> |           |
|---------------------|-----------------------------------------------------------|---------------|----------------|-----------|
|                     |                                                           |               | <b>Th</b>      | <b>Pr</b> |
| CA-101              | Business Communication                                    | CC            | 3              |           |
| CA-102              | Principles of Management                                  | CC            | 3              |           |
| CA-103              | C Language                                                | CC            | 3              |           |
| CA-104              | Database Management System                                | CC            | 3              |           |
| CA-105              | Statistics                                                | CC            | 3              |           |
| CA-106              | Computer Laboratory Based on 103 &104<br>(2 credits each) | PR            |                | 4         |
| 107                 | Add-On (PPA) (30 Hours)                                   | SEC           | 2              |           |

**SEMESTER- II**

| <b>Subject Code</b> | <b>Subject Name</b>                                    | <b>Course</b> | <b>Credits</b> |           |
|---------------------|--------------------------------------------------------|---------------|----------------|-----------|
|                     |                                                        |               | <b>Th</b>      | <b>Pr</b> |
| CA-201              | Organization Behavior & Human Resource Management      | CC            | 3              |           |
| CA-202              | Financial Accounting                                   | CC            | 3              |           |
| CA-203              | Business Mathematics                                   | CC            | 3              |           |
| CA-204              | Relational database                                    | CC            | 3              |           |
| CA-205              | Web Technology HTML-JS-CSS                             | CC            | 3              |           |
| CA-206              | Computer Laboratory Based on 204 & 205(2 credits each) | PR            |                | 4         |
| 207                 | Add-On (Advance C) (30 Hours)                          | SEC           | 2              |           |

**SEMESTER- III**

| Subject Code | Subject Name                                                    | Course | Credits |              |
|--------------|-----------------------------------------------------------------|--------|---------|--------------|
|              |                                                                 |        | Th      | Pr           |
| CA-301       | Digital Marketing                                               | CC     | 3       |              |
| CA-302       | Data Structure                                                  | CC     | 3       |              |
| CA-303       | Software Engineering                                            | CC     | 3       |              |
| CA-304       | Angular JS                                                      | EC     | 3       |              |
| OR           |                                                                 |        |         |              |
| CA-304       | PHP                                                             | EC     | 3       |              |
| CA-305       | Big data                                                        | EC     | 3       |              |
| OR           |                                                                 |        |         |              |
| CA-305       | Block chain                                                     | EC     | 3       |              |
| CA-306       | Computer Laboratory Based on 302 , 304 and 305 (2 credits each) | PR     |         | 2+2+2<br>= 6 |
| 307<br>AECC  | Environment Awareness                                           | AECC   | 2       |              |

#### **SEMESTER- IV**

| Subject Code  | Subject Name                                          | Course    | Credits  |    |
|---------------|-------------------------------------------------------|-----------|----------|----|
|               |                                                       |           | Th       | Pr |
| CA-401        | Networking                                            | CC        | 3        |    |
| CA-402        | Object Oriented Concepts Through CPP                  | CC        | 3        |    |
| CA-403        | Operating System                                      | CC        | 3        |    |
| <b>CA-404</b> | <b>NODE JS</b>                                        | <b>EC</b> | <b>3</b> |    |
| OR            |                                                       |           |          |    |
| <b>CA-404</b> | <b>Advance PHP</b>                                    | <b>EC</b> | <b>3</b> |    |
| CA-405        | Project                                               | EC        |          | 4  |
| CA-406        | Computer Laboratory Based on 402,404 (2 credits each) | PR        |          | 4  |
| 4             | ADD-On (30 Hours)                                     | SEC       | 2        |    |

#### **SEMESTER- V**

| Subject Code | Subject Name                                             | Course | Credits |    |
|--------------|----------------------------------------------------------|--------|---------|----|
|              |                                                          |        | Th      | Pr |
| CA-501       | Cyber Security                                           | CC     | 3       |    |
| CA-502       | OOSE                                                     | CC     | 3       |    |
| CA-503       | Core Java                                                | CC     | 3       |    |
| CA-504       | Mongo DB                                                 | EC     | 3       |    |
| OR           |                                                          |        |         |    |
| CA-504       | Python                                                   | EC     | 3       |    |
| CA-505       | Project                                                  | PJ     |         | 4  |
| CA-506       | Computer Laboratory Based on 503 and 504(2 credits each) | PR     |         | 4  |
| 5            | Add on Course-IOT(30 Hours)                              |        | 2       |    |

#### **SEMESTER- VI**

| Subject Code | Subject Name                                                 | Course | Credits |    |
|--------------|--------------------------------------------------------------|--------|---------|----|
|              |                                                              |        | Th      | Pr |
| CA-601       | Recent Trends in Information Technology(Tutorial/Assignment) | CCT    | 3+1     |    |
| CA-602       | Software Testing                                             | CC     | 3       |    |
| CA-603       | Advanced Java                                                | CC     | 3       |    |
| CA-604       | Android Programming                                          | EC     | 3       |    |
| OR           |                                                              |        |         |    |
| CA-604       | Dot Net framework                                            | EC     | 3       |    |
| CA-605       | Project                                                      | PJ     |         | 4  |
| CA-606       | Computer Laboratory Based on 603 and 604(2 credits each)     | PR     |         | 4  |
| 6            | Add on Course-Soft Skills Training                           |        | 2       |    |

**14. Acknowledgement:** The focus of BBA CA Programme (CBCS-2019 Pattern) has always been raising the academic standards, excellence and holistic development of students. Hon. Prof.

Dr. Nitin Karmalkar, Vice Chancellor, Hon. Dr. N. S. Umarani, Pro-Vice Chancellor, Hon. Dr. Parag Kalkar, Dean, and Associate Dean, Dr. Yashodhan Mithare, Faculty of Commerce and Management have given insights in designing the BBA CA Programme.

Dr. Sanjay Kaptan ,Head ,Savkar Chair has shared his immense knowledge and expertise for designing the structure. Also, the Industry experts panel has added insights in course titles of the BBA CA Programme. Dr. Tanuja Devi co-ordinated the BBA CA Restructuring Committee Dr. Ranjit Patil , Shakila Sishawantan , Prashant Mule Shivendu Bhushan have contributed greatly. This synergy of contributors is very crucial in fine tuning of the BBA CA Programme in its present form.

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# Savitribai Phule Pune University, Pune

## B.B.A. (Computer Application)

(Under faculty of Commerce & Management)

(To be implemented from Academic year 2019-20)

### Business Communication Skills

Course Code: -- 101

Credit 3

Depth of the syllabus - Reasonable knowledge of the communication

#### Program objectives

- 1 To understand what is the role of communication in personal and business world
2. To understand system and communication and their utility
3. To develop proficiency in how to write business letters and other communications in required b

| Unit No. | Contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Lectures |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1        | <b>1. Concept of Communication and Introduction to Communication</b><br><br>1.1 Role of Communication in social and economic system<br>1.2 Need for effective communication<br>1.3 Meaning and definition<br>1.4 Principles of effective communication<br>1.5 Barriers to communication and overcomings                                                                                                                                                                                                        | 12       |
| 2        | <b>Methods and types of Communication</b><br><br>2.1 Written communication,<br>2.2 Forms of written communication.<br>2.3 Qualities, difficulties in written communication ,<br>2.4 Constraints in developing effective written communication<br>2.5 Merits and Limitations of written communication<br>2.6 Listening Written communication,<br>2.7 Forms of written communication.<br>2.8 Qualities, difficulties in written communication ,<br>2.9 Constraints in developing effective written communication | 12       |
| 3.       | <b>Business Correspondence</b><br><br>3.1 Concept ,<br>3.2 Need and functions of Business .Correspondence ,<br>3.3 Types of Business letters ,<br>3.4 Layout Drafting of business ,<br>3.5 Sales Letter ,<br>3.6 Orders sales circulars and business promotion letters<br>3.7 written methods& types of communication                                                                                                                                                                                          | 12       |
| 4.       | <b>Analysis of different Media of Communication</b><br><br>4.1 Fax communication ,                                                                                                                                                                                                                                                                                                                                                                                                                             | 12       |

|  |                                                                                                        |  |
|--|--------------------------------------------------------------------------------------------------------|--|
|  | 4.2 Voice mail ,<br>4.3 e-mails ,<br>4.4 Tele conferencing ,<br>4.5 Communication through social media |  |
|--|--------------------------------------------------------------------------------------------------------|--|

## References

| Sr. No. | Title of the Book                                             | Author/s                                               | Publication                  |
|---------|---------------------------------------------------------------|--------------------------------------------------------|------------------------------|
| 1       | Business Communication                                        | Meenakshi Raman ,<br>Prakash Singh                     | Oxford                       |
| 2       | Business Communication                                        | HomaiPradhan , N.S.<br>Pradhan                         | Himalaya Publishing<br>House |
| 3       | Business Communication                                        | R.K. Madhukar                                          | Vikas Publishing<br>House    |
| 4       | Business Communication and<br>personality Development         | BiswajitDas<br>.ipswwtaSatpathy                        | Excel Books                  |
| 5       | Business Communication –<br>Concepts , Cases and applications | P.D Chaturvedi ,<br>MukeshChaturvedi                   | Dorling Kindersley           |
| 6       | Business Communication –<br>Connecting at work                | HorySankarMukerjee                                     | Oxford                       |
| 7       | Business Communication Today                                  | Courtland L. Bovee , John<br>V. Thill , AbhaChatterjee | Pearson                      |
| 8       | Hand Book of internal<br>Communication                        | Eileen Scholes                                         | Infinity Books               |

**Principles of Management**  
**Course Code 102**  
**Credit -3**

**Depth of the course-** Reasonable working knowledge

**Program Objectives**

- To understand basic concept regarding org. Business Administration
- To examining how various management principles
- To develop managerial skills among the students

| Unit No. | Contents                                                                                                                                                                                                                                                                                                                                                                                  | Lectures  |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1        | <b>Nature of management</b><br><br>Meaning , importance , functions ,types<br>Management as an art ,science and social system<br>Universality of concept of management<br>and organization                                                                                                                                                                                                | <b>12</b> |
| 2        | <b>Evolution of management thoughts</b><br><br>Concept of managerial thoughts<br>Contribution of Taylor, Mayo and Fayol and Drucker and<br>Indian Management Ethos                                                                                                                                                                                                                        | <b>12</b> |
| 3.       | <b>Major managerial Functions</b><br><br>Planning , need types ,methods , advantages ,merits<br>Forecasting. need types ,methods , advantages ,merits<br>Decision making types process and techniques<br>Directions nature and principles and<br>Motivation –nature, principles and theories<br>Organizing –concept delegation of authorities decentralization<br>concepts and importance | <b>12</b> |
| 4.       | <b>Recent trends in Management</b><br><br>Management of change , Mgt of crises ,TQM ,stress<br>management<br>(Principles ,concepts merits )                                                                                                                                                                                                                                               | <b>12</b> |

## References

| Sr. No. | Title of the Book                                   | Author/s                                              | Publication                           |
|---------|-----------------------------------------------------|-------------------------------------------------------|---------------------------------------|
| 1       | Management Concepts and Strategies                  | J.S. Chandan                                          | Vikas Publishing House Pvt. Ltd.      |
| 2       | Principles of Management                            | Harold Koontz , Heinz Weihrich , A. RamachandraArysri | McGraw hill companies                 |
| 3       | Management A Global and Entrepreneurial Perspective | Heinz Weihrich , Mark V. Cannice , Harold Koontz      | McGraw hill companies                 |
| 4       | Management – 2008 Edition                           | Robert Kreitner , MamataMohapatra                     | Biztantra – Management For Flat World |
| 5       | Introduction to Management                          | John R. Schermerhorn                                  | Wiley India Pvt. Ltd.                 |
| 6       | Principles of Management                            | P.C. Tripathi , P.N. reddy                            | McGraw hill companies                 |
| 7       | Management Text and Cases                           | R. SatyaRaju , A. Parthasarthy                        | PHI learning Pvt. Ltd                 |
| 7       | Management (Multi-Dimensional Approach )            | H. R. Appannaiah , G. Dinakar , H.A. Bhaskara         | Himalaya Publishing House             |

**Subject : C-Programming**  
**Course Code-103**  
**Credit-3**

| Unit No. | Topics                                                                                                                                                                                                                                                                                                                                                                                                                                      | No. of Lectures |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1        | <b>Introduction to C language</b><br>1.1 History<br>1.2 Basic structure of C Programming<br>1.3 Language fundamentals<br>1.3.1 Character set, tokens<br>1.3.2 Keywords and identifiers<br>1.3.3 Variables and data types<br>1.4 Operators<br>1.4.1 Types of operators<br>1.4.2 Precedence and associativity<br>1.4.3 Expression                                                                                                             | 3               |
| 2        | <b>Managing I/O operations</b><br>2.1 Console based I/O and related built-in I/O functions<br>2.1.1 printf(), scanf()<br>2.1.2 getch(), getchar()<br>2.2 Formatted input and formatted output                                                                                                                                                                                                                                               | 2               |
| 3        | <b>Decision Making and looping</b><br>3.1 Introduction<br>3.2 Decision making structure<br>3.2.1 If statement<br>3.2.2 If-else statement<br>3.2.3 Nested if-else statement<br>3.2.4 Conditional operator<br>3.2.5 Switch statement<br>3.3 Loop control structures<br>3.3.1 while loop<br>3.3.2 Do-while loop<br>3.3.3 For loop<br>3.3.4 Nested for loop<br>3.4 Jump statements<br>3.4.1 break<br>3.4.2 continue<br>3.4.3 goto<br>3.4.4 exit | 9               |
| 4        | <b>Programs through conditional and looping statements</b><br>Addition / Multiplication of integers<br>Determining if a number is +ve / -ve / even / odd<br>Maximum of 2 numbers, 3 numbers<br>Sum of first n numbers, given n numbers<br>Integer division, Digit reversing, Table generation for n, ab<br>Factorial, sine series, cosine series, nCr , Pascal Triangle<br>Prime number, Factors of a number                                | 5               |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
|   | Other problems such as Perfect number, GCD of 2 numbers etc (Write algorithms and draw flowcharts)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |
| 5 | <b>Arrays and Strings</b><br>5.1 Introduction to one-dimensional Array<br>5.1.1 Definition<br>5.1.2 Declaration<br>5.1.3 Initialization<br>5.2 Accessing and displaying array elements<br>5.3 Finding smallest and largest number from array<br>5.4 Reversing array<br>5.5 Finding odd/even/prime number from array<br>5.4 Introduction to two-dimensional Array<br>5.4.1 Definition<br>5.4.2 Declaration<br>5.4.3 Initialization<br>5.5 Accessing and displaying array elements<br>5.6 Matrices: Addition, Multiplication, Transpose, Symmetry, upper/lower triangular<br>5.7 Introductions to Strings<br>5.7.1 Definition<br>5.7.2 Declaration<br>5.7.3 Initialization<br>5.8 Standard library functions<br>5.9 Implementations without standard library functions. | 12 |
| 6 | <b>Functions</b><br>6.1 Introduction<br>6.1.1 Purpose of function<br>6.1.2 Function definition<br>6.1.3 Function declaration<br>6.1.4 Function call<br>6.2 Types of functions<br>6.3 Call by value and call by reference<br>6.4 Storage classes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 9  |
| 7 | <b>7 Introduction to pointer</b><br>7.1 Definition<br>7.2 Declaration<br>7.3 Initialization<br>7.4 Indirection operator and address of operator<br>7.5 Pointer arithmetic<br>7.6 Dynamic memory allocation<br>7.7 Functions and pointers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4  |
| 8 | 8 Structures<br>8.1 Introduction to structure<br>8.2 Definition<br>8.3 Declaration<br>8.4 Accessing members<br>8.5 structure operations<br>8.6 nested structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4  |

Reference Book :-

- 1) Let us C –YashwantKanetkar, BPB publication.
- 2) Ansi C- Balagurusamy
- 3) The complete Reference- HerbertSchildt

**Subject Name :- Database Management Systems**  
**Course Code: 104**  
**Credit-3**

| <b>Sr. No.</b> | <b>Chapter No.</b> | <b>Name of Chapter and Contents</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>No. of Lect.</b> |
|----------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>1</b>       | <b>1</b>           | File Structure and Organization<br>1.1 Introduction<br>1.2 Logical and Physical Files<br>1.2.1 File<br>1.2.2 File Structure<br>1.2.3 Logical and Physical Files Definitions<br>1.3 Basic File Operations<br>1.3.1 Opening Files<br>1.3.2 Closing Files<br>1.3.3 Reading and Writing<br>1.3.4 Seeking<br>1.4 File Organization<br>1.4.1 Field and Record structure in file<br>1.4.2 Record Types<br>1.4.3 Types of file organization<br>1.4.3.1 Sequential<br>1.4.3.2 Indexed<br>1.4.3.3 Hashed<br>1.5 Indexing<br>1.5.1 What is an Index?<br>1.5.2 When to use Indexes?<br>1.5.3 Types of Index<br>1.5.3.1 Dense Index<br>1.5.3.2 Sparse Index | <b>6</b>            |

|   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |    |
|---|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 2 | 2 | Database Management System<br>2.1 Introduction<br>2.2 Basic Concept and Definitions<br>2.2.1 Data and Information<br>2.2.2 Data Vs Information<br>2.2.3 Data Dictionary<br>2.2.4 Data Item or Field<br>2.2.5 Record<br>2.3 Definition of DBMS<br>2.4 Applications of DBMS<br>2.5 File processing system Vs DBMS<br>2.6 Advantages and Disadvantages of DBMS<br>2.7 Users of DBMS<br>2.7.1 Database Designers<br>2.7.2 Application programmer<br>2.7.3 Sophisticated Users<br>2.7.4 End Users<br>2.8 Views of Data<br>2.9 Data Models | 14 |
|   |   | 2.9.1 Object Based Logical Model<br>a. Object Oriented Data Model<br>b. Entity Relationship Data Model<br>2.9.2 Record Base Logical Model<br>a. Relational Model<br>b. Network Model<br>c. Hierarchical Model<br>2.10 Entity Relationship Diagram(ERD)<br>2.11 Extended features of ERD<br>2.12 Overall System structure                                                                                                                                                                                                             |    |

|          |          |                                                                                                                                                                                                                                                                                                                                                                                                                                |           |
|----------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>3</b> | <b>3</b> | <b>Relational Model</b><br>3.1 Introduction<br>3.2 Terms<br>a. Relation<br>b. Tuple<br>c. Attribute<br>d. Cardinality<br>e. Degree of relationship set<br>f. Domain<br>3.3 Keys<br>3.3.1 Super Key<br>3.3.2 Candidate Key<br>3.3.3 Primary Key<br>3.3.4 Foreign Key<br>3.4 Relational Algebra Operations<br>a. Select<br>b. Project<br>c. Union<br>d. Difference<br>e. Intersection<br>f. Cartesian Product<br>g. Natural Join | <b>8</b>  |
| <b>4</b> | <b>4</b> | <b>SQL (Structured Query Language)</b><br>4.1 Introduction<br>4.2 History Of SQL<br>4.3 Basic Structure<br>4.4 DDL Commands<br>4.5 DML Commands<br>4.6 Simple Queries<br>4.7 Nested Queries<br>4.8 Aggregate Functions                                                                                                                                                                                                         | <b>12</b> |
| <b>5</b> | <b>5</b> | <b>Relational Database Design</b><br>5.1 Introduction<br>5.2 Anomalies of un normalized database<br>5.3 Normalization<br>5.4 Normal Form<br>5.4.1 1 NF<br>5.4.2 2 NF<br>5.4.3 3 NF<br>5.4.3.4 BCNF                                                                                                                                                                                                                             | <b>8</b>  |

**References:**

- 1) Database System Concepts By Henry korth and A. Silberschatz
- 2) SQL, PL/SQL The Programming Language Oracle :- Ivan Bayross, BPB Publication.
- 3) Database Systems Concepts, Designs and Application by Shio Kumar Singh, Pearson
- 4) Introduction to SQL by Reck F. van der Lans by Pearson
- 5) Modern Database Management by Jeffery A Hoffer , V.Ramesh, Heikki Topi ,Pearson
- 6) Database Management Systems by Debabrata Sahoo ,Tata MacgrawHill

**Business Statistics****Course code 105****Credit 3**

Depth Reasonable working knowledge

Objective of the program

1. To understand role and importance of statistics in various business situations
2. To develop skills related with basic statistical technique
3. Develop right understanding regarding regression, correlation and data interpretation

| Unit No. | Contents                                                                                                                                                                                                                                                                                                                                                                                        | Lectures |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 1        | <b>Concept of statistics.</b><br><br>Role of statistics. In informatics business science<br>Tabulation, Data condensations and tabulation, Data Condensation and graphical Methods :Raw data , attributes and variables , classification , frequency distribution ,cumulative frequency distributions.<br>Graphs - Histogram, Frequency polygon. Diagrams - Multiple bar , Pie ,Subdivided bar. | 12       |
| 2        | <b>Measures of central tendency and dispersion</b><br><br>Criteria for good measures of central tendency, Arithmetic mean, Median and Mode for grouped and ungrouped data, combined mean.                                                                                                                                                                                                       | 12       |
| 3.       | <b>Measures of Dispersion :</b><br><br>Concept of dispersion , Absolute and relative measure of dispersion, Range, Variance, Standard deviation, Coefficient of variation, Quartile Deviation , Coefficient of Quartile deviation.                                                                                                                                                              | 12       |
| 4        | <b>Correlation and Regression( for ungrouped data )</b><br><br>Concept of correlation, positive & negative correlation, Karl Pearson's Coefficient of correlation, meaning of regression, Two regression equations, Regression coefficients and properties.                                                                                                                                     | 12       |

## References

| Sr. No. | Title of the Book                                    | Author/s                    | Publication                |
|---------|------------------------------------------------------|-----------------------------|----------------------------|
| 1       | Business Statistics                                  | Girish Phatak               | Tech – Max                 |
| 2       | Statistics for Business                              | Dr. S. K. Khandelwal        | International Book House   |
| 3       | Fundamentals of Business Statistics                  | J.K. Sharma                 | Pearson                    |
| 4       | Business Statistics                                  | G.C. Beri                   | The McGraw-Hill companies  |
| 5       | Statistics Theory and Practice                       | R.S. N. Pillai<br>Bagavathi | S. Chand                   |
| 6       | Statistics for Managerial decision Making            | Dr. S. K. Khandelwal        | International Book House   |
| 7       | Business Statistics For Contemporary Decision Making | Ken Black                   | Wiley India Edition        |
| 8       | Fundamentals of statistics                           | S.C. Gupta                  | Himalaya Publication House |

**Savitribai Phule Pune University**  
**FY BBA- CA Semester II (CBCS) Pattern 2019**  
**Organizational Behavior & Human Resource Management**  
**Course code 201**  
**Credit 3**

**Depth of the course-** Basic working knowledge

**Program Objectives:**

- i) To understand basic concept of HRM & OB
- ii) To make aware students about traditional & modern methods of procurement & development in organization.
- iii) To know the major trends in HRM & OB

| Unit No. | Unit Title                                     | Contents                                                                                                                                                                                                                                                                                                                                                                                                              | Purpose and Skills to be developed                                                                                                                                                 |
|----------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | <b>Introduction to Organizational Behavior</b> | Definition, concept, scope, Models of OB,<br>Major trends in OB:-Total Quality management, Cultural diversity,<br>Organizational change, Stress Management: Sources of Stress, Effects of Stress & Stress Management, Work life Balance and Quality of Work Life                                                                                                                                                      | To understand the basic concept of OB & To develop knowledge about major trends & ability to handle cultural diversity Stress, change and to maintain work life balance.           |
| 2        | <b>Introduction to HRM</b>                     | <b>Introduction to HRM-</b> Definition, Concepts, scope, importance<br>Functions ,Objectives & limitations, , Role of HR Manager , Areas in which Human Resource Manager can be of assistance                                                                                                                                                                                                                         | To understand the basic concept of HRM & developing knowledge & ability of the student about HRM.                                                                                  |
| 3        | <b>Procurement</b>                             | <b>HRP-</b> Concept, Definition, Merits & Demerits, process , influencing factors of HRP<br><b>Recruitment-</b> Concept, Definition, sources of recruitment and their utility in identifying vacancies, methods, E-recruitment,<br><b>Selection-</b> Concepts, definition, process, Types of interviews and frequently asked interview questions from the candidate at each step and how to answer them, E- selection | To understand process & importance of HR procurement and to develop the skills among students regarding awareness of new trends of Recruitment Selection and interview preparation |
| 4        | <b>Training &amp; Development</b>              | <b>Training &amp; Development-</b> Concept, definition, importance, Methods, E- Training, Recent trends in Training                                                                                                                                                                                                                                                                                                   | To know the training & performance appraisal methods & To develop evaluation skill.                                                                                                |

### Teaching Methodology

| Teaching Hours | Innovative methods to be used                                         | Project                 | Expected Outcome                                                      |
|----------------|-----------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------|
| 10             | Lecture ,Interactive teaching & Ice breaking session                  | Role play on HR Manager | To develop group cohesiveness.                                        |
| 10             | Lab activity of Searching links about E-recruitment and E- selection. | Project report          | Up gradation of knowledge of new trends in Recruitment and Selection. |
| 12             | Guest lecture                                                         | Assignment              | Up gradation of skill.                                                |
| 13             | Case Study , Video clips on Cultural Diversity and Stress management  | Case study report       | To develop decision making skill.                                     |

### Evaluation Method

| Internal Evaluation                                                                                                                                                 | External Evaluation                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>One project Report : 5 Marks</b><br><b>One assignment : 5 marks</b><br><b>One Case Study Solution Report : 5 marks</b><br><b>Internal Examination : 15 marks</b> | <b>25% MCQ</b><br><b>Short notes 35%</b><br><b>Long answers 40%</b> |
| <b>30</b>                                                                                                                                                           | <b>70</b>                                                           |

### Suggested references

| <b>Sr. No.</b> | <b>Title of the Book</b>                      | <b>Author/s</b>  | <b>Publication</b>                             | <b>Place</b>     |
|----------------|-----------------------------------------------|------------------|------------------------------------------------|------------------|
| <b>1</b>       | Human Resources Management.                   | –L.M. Prasad     | <b>Sultan and Chand<br/>Publishing Company</b> | <b>New Delhi</b> |
| <b>2</b>       | Human Resources Management.                   | K. Ashwathappa – | <b>Tata McGraw Hill</b>                        | <b>New Delhi</b> |
| <b>3</b>       | Personnel Management.                         | C. B. Mamoria    |                                                |                  |
| <b>4</b>       | Organizational Behavior Text, Cases and Games | - K. Aswathappa, | <b>Tata McGraw Hill</b>                        | <b>New Delhi</b> |
| <b>5</b>       | Organizational Behavior -                     | L.M. Prasad      | <b>Sultan and Chand<br/>Publishing Company</b> | <b>New Delhi</b> |

**Savitribai Phule Pune University**  
**FY BBA- CA Semester II (CBCS) Pattern 2019**  
**Financial Accounting**  
**Course code 202**  
**Credit 3**

**Depth of the syllabus: Reasonable working knowledge**

**Program objectives**

- i) To develop right understanding regarding role and importance of monetary and financial transactions in business
- ii) To cultivate right approach towards classifications of different transactions and their implications
- iii) To develop proficiency preparation of basic financial as to how to write basis accounting statement - Trading and P&L

| <b>Unit No.</b> | <b>Unit Title</b>                                 | <b>Contents</b>                                                                                                                                                                                            | <b>Purpose and Skills to be developed</b>                                                                                                                                                                                                       |
|-----------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b>        | <b>Financial Accounting-</b>                      | definition and Scope, objectives, Accounting concepts, principles and conventions                                                                                                                          | To understand role and importance of accounting in Business and how accounting concept can be implemented in business<br>Computation ability in business ability to distinguished between various accounting concepts and practices             |
| <b>2</b>        | <b>Accounting Transactions and Final Accounts</b> | Voucher system; Accounting Process, Journals, Ledger, Cash Book , subsidiary books ,Trial Balance preparation of Final Accounts of Sole Proprietorship(Trading and Profit & Loss Account and Balance Sheet | To understand how to record different financial transactions and their financial implications<br>Ability to write different accounting tractions and prepare basic financial tractions                                                          |
| <b>3.</b>       | <b>Bank Reconciliation Statements</b>             | Meaning, importance and preparation of Bank Reconciliation Statement                                                                                                                                       | To understand the kind of accounting relationship between customer and bank<br>Ability to write necessary set of entries in books of accounts and in cash book and compare them with bank statement to understand their implications and effect |

|  |                                |                                                                           |                                                                                                                                                                                |
|--|--------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Computerized Accounting</b> | Role of computers and Financial application, Accounting Software packages | Ability to understand growing importance of software and to know how to use software and to write books of accounts Ability to use software like tally for writing of accounts |
|--|--------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Teaching Methodology

| Teaching Hours | Innovative methods to be used                                                                                                      | AV Applications                                                                                                                            | Project                                                                                                               | Expected Outcome                                                                                              |
|----------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 10             | Appling accounting concepts in real life business<br>Ability to distinguish between accounting tractions and real life business    | Role of accounting in business                                                                                                             | Importance of accounting of business and nonprofit organizations                                                      | To learn about importance of acc. In business                                                                 |
| 15             | Using practical situations for writing Transactions<br>And applying accounting concepts different situations                       | Writing ledger and cash book                                                                                                               | Developing model of Journals and model books of accounts<br>Preparing flow chart of accordance of different tractions | Ability to distinguish between different tractions and its nature                                             |
| 11             | Interpretation of bank passbook and its statement<br>Comparative analysis of bank pass book and statement and their interpretation | Lesson on How to write bank reconciliations. Statement from YouTube                                                                        | Preparing BR. With imaginary data                                                                                     | Ability to prepare and interpret bank reconciliation statement                                                |
| 12             | NIL                                                                                                                                | To Understand how various tractions are recorded while using software and what cautions are need to be taken while recording transactions. | Film on silent features of tally accounting<br>As business software                                                   | Appling software basic financial statement and converting row financial data into well written financial data |

### Evaluation Method

| Unit No | Internal Evaluation                                                                                    | External Evaluation                                    | Suggested Add on Course                    |
|---------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------|
| I       | MCQ on various aspects of accounting Presentations on accounting and its importance in business        | <b>25%MCQ<br/>Short notes 35%<br/>Long answers 40%</b> | <b>Tally and computer based accounting</b> |
| II      | Practical problems on how to write different accounting tractions and maintaining books of accounts    |                                                        |                                            |
| III     | Practical problems on Bank Reconciliation                                                              |                                                        |                                            |
| IV      | Demonstrations and hands on of experience regarding application of Tally and other accounting software |                                                        |                                            |
|         | <b>30</b>                                                                                              | <b>70</b>                                              |                                            |

### References

| Sr. No. | Title of the Book                 | Author/s                                                   | Publication                               | Place     |
|---------|-----------------------------------|------------------------------------------------------------|-------------------------------------------|-----------|
| 1       | Advance Accounting Vou- I         | S.N. Maheshwari & S.K. Maheshwari                          | Vikas Publication                         | New Delhi |
| 2       | Advance Accounting Vou- I         | M.C. Shukla , T.C. Grewal , S.C Gupta                      | S. Chand                                  | New Delhi |
| 3       | Accountancy (Vol- I )             | S. Kr. Paul                                                | Central Educational Enterprises (P). Ltd. | Kolkata   |
| 4       | Accounting (text and Cases )      | Robert N. Anthony , David F. Hawkins , Kenneth A. Merchant | McGraw Hill Companies                     | New Delhi |
| 5       | Advanced Accountancy( Volume – I) | R.L. Gupta , M. Radhaswamy                                 | Sultan Chand & Sons                       | New Delhi |

**Savitribai Phule Pune University**  
**FY BBA- CA Semester II (CBCS) Pattern 2019**  
**Business Mathematics**  
**Course code 203**  
**Credit 3**

**Course Depth:** Fundamental Knowledge

**Objectives:**

- i) To understand role and importance of Mathematics in various business situations and while developing softwares.
- ii) To develop skills related with basic mathematical technique

| Unit No. | Topic                                                                                                                                                                                                                                                              | No. of Lecture |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 1        | <b>1. Ratio, Proportion and Percentage:</b><br>Ratio – Definition, Continued Ratio, Inverse Ration, Proportion, Continued Proportion, Direct Proportion, Inverse Proportion, Variation, Inverse Variation, Joint Variation, Percentage, computation of Percentage. | 8              |
| 2        | <b>2. Profit and Loss: -</b><br>Terms and Formulae, Trade discount, Cash discount, Problems involving cost price, selling price, Trade discount and cash discount. Introduction to Commission and brokerage, Problems on commission and brokerage                  | 6              |

|              |                                                                                                                                                                                                                                                                                                 |           |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 3            | <b>3. Interest and Annuity: -</b> Simple interest, Compound interest, Equated monthly Installments (EMI) by interest of reducing balance and flat interest methods and problems.<br><br>Ordinary annuity, sinker fund, annuity due, present value and future value of annuity.                  | 7         |
|              | <b>Shares and Mutual Funds:-</b> Concepts of Shares, face value, market value, dividend, brokerage, equity shares, preferential shares, bonus shares, examples and problems, Concept of Mutual Funds, Change in Net Asset Value (NAV), Systematic Investment Plan (SIP), Examples and Problems. | 7         |
| 4            | <b>4. Matrices and Determinant: -</b> Definition of Matrices, Types of Matrices, Algebra of Matrices, Determinant, Adjoint of Matrix, Inverse of Matrix, System of Linear equations, Solution of System of Linear Equation by adjoint method (upto 3 variables only).                           | 10        |
| 5            | <b>5. Linear Programming Problem (LPP)</b> Concept of LPP, Formulation of LPP and solution of LPP by graphical method.                                                                                                                                                                          | 5         |
|              | <b>Transportation Problem (T.P.): -</b><br><br>Concept of Transportation Problem, Initial Basic Feasible Solution, North-West Corner Method (NWCM), Least Cost Method (LCM), Vogel's Approximation Method (VAM).                                                                                | 5         |
| <b>Total</b> |                                                                                                                                                                                                                                                                                                 | <b>48</b> |

**Reference Books:**

- 1) Business Mathematics by Dr. AmarnathDikshit and Dr. Jinendrakumar Jain.
- 2) Business Mathematics by V. K. Kapoor – Sultan, Chand and sons. Delhi.
- 3) Business Mathematics by Bari – New Literature publishing company, Mumbai.
- 4) Operation Research by S. D. Sharma - Sultan, Chand and sons.
- 5) Operation Research by J. K. Sharma - Sultan, Chand and sons.

**Savitribai Phule Pune University**  
**FY BBA- CA Semester II (CBCS) Pattern 2019**  
**Relational Data Base**  
**Course code 204**  
**Credit 3**

**Course Depth:** Fundamental Knowledge

**Objectives:**

- i) Enables students to understand relational database concepts and transaction management concepts in database system.
- ii) Enables student to write PL/SQL programs that use: procedure, function, package, cursor and trigger.

| Unit No. | Unit Title                   | Contents                                                 | Purpose                                                                                   | Expected Outcome                                |
|----------|------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------|
| 1.       | <b>Introduction To RDBMS</b> | Introduction to popular RDBMS product and their features | To understand concept of RDBMS & use in business                                          | Understanding of various RDBMS products()       |
|          |                              | Difference Between DBMS and RDBMS                        | To understand advantages of RDBMS over DBMS                                               | Use of relational database                      |
|          |                              | Relationship among application programs and RDBMS        | To understand interface between application programs and data                             | To get knowledge of Front End and Backend       |
| 2.       | <b>PL-SQL</b>                | Overview of PLSQL Data Types ,PLSQL Block                | To understand various data types , operators , functions and control statements           | Understanding of various programming aspects    |
|          |                              | Exception Handling                                       | To understand predefined and user defined exceptions                                      | Learning of different exceptions                |
|          |                              | Functions, Procedures                                    | To understand concept of compact program writing by making use of functions and procedure | Writing of compact code (Small program writing) |
|          |                              | Cursor                                                   | To understand types of cursors and selective data retrieval                               | Understanding of exact data retrieval           |
|          |                              | Trigger Package                                          | To understand concept of stored                                                           | Writing of triggers and                         |

|    |                                                  |                                      |                                                                                               |                                                                                                              |
|----|--------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|    |                                                  |                                      | procedure and compiled data                                                                   | packages(Shell application using all contents)                                                               |
| 3. | <b>Transaction Management</b>                    | Transaction Concept                  | To understand effect of transaction process on database                                       | Understanding use of transaction and effect on database                                                      |
|    |                                                  | Transaction Properties               | To understand properties like atomicity, consistency, isolation and durability                | Application of properties (Case solving)                                                                     |
|    |                                                  | Transaction States                   | To understand various states such as active, partially committed, Failed , aborted, committed | Understanding of various states                                                                              |
|    |                                                  | Concurrent Execution                 | To understand concept of reduction in waiting time                                            |                                                                                                              |
|    |                                                  | Serializability                      | To understand Conflict Serializability and View Serializability                               |                                                                                                              |
| 4  | <b>Concurrency Control &amp; Recovery System</b> | Lock Based Protocol                  | To understand meaning Locks, Granting of Locks ,Two Phase Locking Protocol                    | To understand concept of shared and exclusive lock                                                           |
|    |                                                  | Timestamp Based Protocol             | To understand Timestamp and timestamp ordering protocol                                       | To learn how to prevent deadlock situation                                                                   |
|    |                                                  | Deadlock Handling                    | To understand dead lock detection, prevention and recovery                                    | Understand what deadlock is and how it can occur when giving mutually exclusive access to multiple resources |
|    |                                                  | Failure Classification               | To understand transaction failure and system crash                                            | To learn concepts related to hardware failures                                                               |
|    |                                                  | Recovery & Atomicity                 | To understand log based recovery and checkpoint                                               | Data recovery with different techniques                                                                      |
|    |                                                  | Recovery with concurrent transaction | To understand concept of transaction rollback                                                 | Restoring of data which is changed by mistake                                                                |

**Suggested References:**

| <b>Sr. No.</b> | <b>Title of the Book</b>                           | <b>Author/s</b>                    | <b>Publication</b>    | <b>Place</b>  |
|----------------|----------------------------------------------------|------------------------------------|-----------------------|---------------|
| <b>1</b>       | Database Management System                         | Bipin Desai                        | Galgotia Publications | New Delhi     |
| <b>2</b>       | SQL/PLSQL the programming language of oracle       | Ivan Bayross                       | BPB Publications      | New Delhi     |
| <b>3</b>       | An Introduction to Database Systems Eighth Edition | C. J.Date, A.Kannan, S.Swamynathan | Pearson Publications  | North America |
| <b>4</b>       | Database System Concepts 5th Edition               | Silberschatz, Korth, Sudershan     | McGraw-Hill           | New York      |

**Savitribai Phule Pune University**  
**FY BBA- CA Semester II (CBCS) Pattern 2019**  
**Web Technology (HTML-JSS-CSS)**  
**Course code 205**  
**Credit 3**

**Course Depth:** Fundamental Knowledge

**Objectives:**

- i) To know & understand concepts of internet programming.
- ii) To understand how to develop web based applications using JavaScript.

| Unit No | Topic                                                                                                                                                                                                                                                                                                                                           | No. of Lecture |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 1       | <b>1. Introduction</b><br><br>1.1 Clients- Servers and Communication<br>1.2 Internet-Basic, Internet Protocols (HTTP, FTP, IP)<br>1.3 World Wide Web(WWW)<br>1.4 HTTP request message, HTTP response message                                                                                                                                    | <b>5</b>       |
| 2       | <b>2. Web Design</b><br>2.1 Concepts of effective web design<br>2.2 Web design issues including Browser Bandwidth and Cache<br>2.3 Display resolution<br>2.4 Look and Feel of the Website<br>2.5 Page Layout and linking<br>2.6 User centric design<br>2.7 Sitemap<br>2.8 Planning and publishing website<br>2.9 Designing effective navigation | <b>9</b>       |

|              |                                                                                                                                                                                                                                                                                                                                        |           |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>3</b>     | <b>3. HTML</b><br>3.1 Introduction to HTML<br>3.2 Basic HTML Structure<br>3.3 Common HTML Tags<br>3.4 Physical and Logical HTML<br>3.5 Types of Images, client side and server-side Image mapping<br>3.6 List, Table, Frames<br>3.7 Embedding Audio, Video<br>3.8 HTML form and form elements<br>3.9 Introduction to HTML Front Page   | <b>12</b> |
| <b>4</b>     | <b>4. Style sheets</b><br>4.1 Need for CSS<br>4.2 Introduction to CSS<br>4.3 Basic syntax and structure<br>4.4 Using CSS-<br>4.4.1 background images, colors and properties,<br>4.4.2 manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS<br>4.5 Overview and features of CSS2 and CSS3  | <b>10</b> |
| <b>5</b>     | <b>5. JavaScript</b><br>5.1 Introduction to Java Script<br>5.2 Identifier & operator, control structure, functions<br>5.3 Document object model(DOM),<br>5.4 DOM Objects (window, navigator, history, location)<br>5.5 Predefined functions, math & string functions<br>5.6 Array in Java scripts<br>5.7 Event handling in Java script | <b>12</b> |
| <b>Total</b> |                                                                                                                                                                                                                                                                                                                                        | <b>48</b> |

**Reference Books:**

1. Complete HTML- Thomas Powell
2. HTML and JavaScript – Ivan Bayross
3. HTML & CSS: The Complete Reference, Fifth Edition
4. Mastering HTML, CSS & Javascript Web Publishing

**Reference websites:**

1. [www.w3schools.com](http://www.w3schools.com)
2. [www.tutorialspoint.com](http://www.tutorialspoint.com)

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