# DEPARTMENT OF COMPUTER SCIENCE

## COURSE CURRICULUM & MARKING SCHEME

# B.Com. III, IV, V, VI Semester

# COMPUTER APPLICATION

## (Based on Choice Based Credit System)

### SESSION : 2024-25



**ESTD : 1958**

# GOVT. V.Y.T. PG AUTONOMOUS COLLEGE, DURG, 491001 (C.G.)

(Former Name – Govt. Arts & Science College, Durg)

NAAC Accredited Grade A⁺, College with CPE - Phase III (UGC), STAR COLLEGE (DBT)

Phone : 0788-2212030

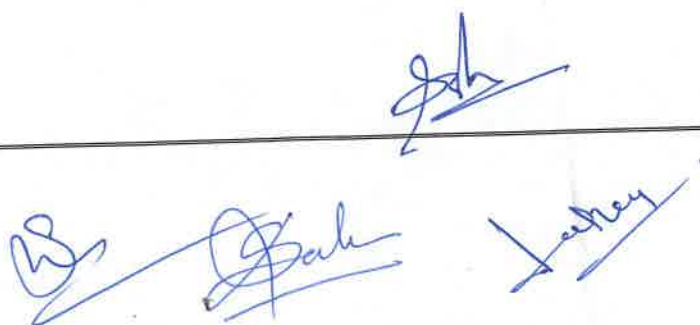Website - www.govtsciencecollegedurg.ac.in, Email – autonomousdurg2013@gmail.com

# Course Structure for CBCS
## B.Com. (CA)- III Semester

| Course Code | Course Type | Course Name | Theory Marks | | Internal Marks | | Practical Marks | | Total Marks | | Teaching Load per Week | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Max. (A) | Min. (B) | Max. (C) | Min. (D) | Max. (E) | Min. (F) | Max. | Min. | L | T | P | |
| BCS 301(L) | DSC | DBMS | 60 | 24 | 15 | 6 | | | 75 | 30 | 3 | 1 | | 3 |
| BCS 302(P) | | DBMS Lab | | | | | 25 | 10 | 25 | 10 | | | 1x2 | 1 |
| BCS 303 (L+P) | SEC | | 25 | 10 | | | 25 | 10 | 50 | 20 | 1 | | 1X2 | 2 |
| BCS 304 | VAC | | 25 | 10 | | | 25 | 10 | 50 | 20 | 1 | | 1X2 | 2 |
| | | TOTAL | | | | | | | 200 | 80 | | | | 8 |

# Course Structure for CBCS
## B.Com. (CA)- IV Semester

| Course Code | Course Type | Course Name | Theory Marks | | Internal Marks | | Practical Marks | | Total Marks | | Teaching Load per Week | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Max. (A) | Min. (B) | Max. (C) | Min. (D) | Max. (E) | Min. (F) | Max. | Min. | L | T | P | |
| BCS 401(L) | DSC | Internet Technology | 60 | 24 | 15 | 6 | | | 75 | 30 | 3 | 1 | | 3 |
| BCS 402(P) | | Internet Technology Lab | | | | | 25 | 10 | 25 | 10 | | | 1x2 | 1 |
| BCS 403 (L+P) | SEC | | 25 | 10 | | | 25 | 10 | 50 | 20 | 1 | | 1X2 | 2 |
| BCS 404 (L+P) | VAC | | 25 | 10 | | | 25 | 10 | 50 | 20 | 1 | | 1X2 | 2 |
| | | TOTAL | | | | | | | 200 | 80 | | | | 8 |

The syllabus for B.Com. (CA) is hereby approved for the session 2023-24.

**GOVT. V.Y.T. P.G. AUTONOMOUS COLLEGE, DURG (C.G.)**
**SYLLABUS FOR AY 2024-25**
**B. Com (CA) – III Semester**

# Database Management System
**Course Code– BCOCA-301 (L)**

Max Mark: 60
Min Marks: 24
Note: The Question Paper setter is advised to prepare unit-wise question with the provision of internal choice. Only Simple calculators allowed not scientific calculator.

| Part A: Database Management System | | | | |
|---|---|---|---|---|
| Program: B. Com (CA) | Class: B. Com (CA) Semester | Year: 2024 | Session:2024-25 | |
| Course Code | BCOCA-301 (L) (Additional Course) | | | |
| Course Title | Database Management System | | | |
| Course Type | Core Course | | | |
| Pre-requisite (if any) | None | | | |
| Course Outcome | At the end of this course, the students will be able to: <br> 1. Understand the Databases and their design & development <br> 2. Intellectual Cognitive/ analytical skills: Normalization of Databases. <br> 3. Transferable skills: Usage of DBMS design and administration. <br> 4. Gather data to analyze and specify the requirements of a system and Design system components and environments. <br> 5. 7. Build general and detailed models that assist programmers in implementing a system. | | | |
| Credit Value | 3 Credits | 1 credit =15 Hours – Learning and Observation | | |
| Total Marks | Maximum Marks :100 | Minimum Passing Marks:40 | | |

| PART B: CONTENT OF THE COURSE | | |
|---|---|---|
| Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours) | | |
| Unit | Topics (COURSE CONTENTS) | No. of Periods |
| 1. | **Overview of Database Management** <br> Data. Information and knowledge, increasing use of data as a corporate resource, data processing verses data management, file-oriented approach verses database oriented approach to data management, data independence, | 9 |

| | | |
|---|---|---|
| | database administration roles, DBMS architecture, different kinds of DBMS users, importance of data dictionary, contents of data dictionary, types of database languages. Data models: network, hierarchical, relational. | |
| 2 | **UNIT-II: Relational Model & Relational Algebra**<br><br>Entry-Relational model as a tool for conceptual design-entities, attributes and relationships. ER diagrams; Concept of keys, Case studies of ER modelling Generalization; specialization and aggregation converting an ER model into relational schema. Extended ER features. Introduction to UML, Representation in UML, diagram (Class Diagram etc.) | 9 |
| 3 | **UNIT-III: Relational Model & Relational Design**<br><br>**Relational Algebra:** select, project, cross product different types of joins (inner join, outer joins, self-join); set operations, Tuple relational calculus, Domain relational calculus, Simple and complex queries using relational algebra, stand alone and embedded query languages. | 9 |
| 4 | **UNIT-IV: Structured Query Language (SQL)**<br><br>Normalization concept in logical model; Pitfalls in database design, update anomalies: Functional dependencies, Join dependencies, Normal forms(1NF,2NF,3NF), Boyce Codd Normal form, Decomposition, Multi-Valued Dependencies, 4NF, 5NF, De-normalization. | 9 |
| 5 | **UNIT-V: Query Processing and Security**<br><br>Introduction to SQL, constructs (SELECT-----FROM, WHERE----GROUP BY---HAVING------ORDERBY------) INSERT, DELETE, UPDATE, DROP, VIEW definition and use, Temporary tables, Nested queries and correlated nested queries, Integrity constraints; Not Null unique, check, primary, key, foreign key, references, Inner and Outer joins. **Query processing:** parsing, translation, optimization, evaluation and overview of Query processing **protecting the Data Base:** Integrity, Security and Recovery. Domain Constraints, Referential Integrity, Assertion, Triggers, Security & Authorization in SQL. | 9 |

## Part C -Learning Resources

Text Books, Reference Books, Other Resources

**BOOKS RECOMMENDED:**

1. **Database System Concept:** *A. Silberschatz, H. F. Korth and S. Sudarshan, TMH*
2. **Fundamentals of database Systems:** *Elmasri&Nawathe, pearson Education*
3. **An Introduction to Database Systems:** *C.J. Date, AWL publishing Company*
4. **SQL, PL/SQL:** *Ivan Bayross, BPB Publication*
5. **An Introduction to Database Systems:** *Bipin Desai, Galgotia publication.*
6. **Datebase Management System:** *A. K. Majumdar & P. Bhattacharya, TMH.*

## PART D: ASSESSMENT AND EVALUATION

| Suggested Continuous Evaluation Methods: | |
|---|---|
| Maximum Marks: | 100 Marks |
| Continuous Comprehensive Evaluation (CCE): | 20 Marks |
| Semester End Exam (SEE): | 80 Marks |

| Internal Assessment: | Internal Test of 20 Marks each and Assignment of 20 Marks |
|---|---|
| Continuous Comprehensive Evaluation (CCE) | |

| Semester End Exam (SEE) | Pattern -FOUR Questions (A, B, C, D) from each Unit | |
|---|---|---|
| | Question - A & B: (Compulsory) Very short answer type (02 each) | 04 x 5 = 20 Marks |
| | Question - C: Short answer type question | 05 x 5 = 25 Marks |
| | Question -D: Long answer type question | 07 x 5 = 35 Marks |
| | **Total** | **= 80 Marks** |

### PART A: INTRODUCTION

| Program: B.Com (CA) | Class: B. Com (CA) – III Semester | | Session:2024-2025 |
|---|---|---|---|
| 1 | Course Code | BCOCA-302 (P) | |
| 2 | Course Title | DBMS Lab | |
| 3 | Course Type | Practical | |
| 4 | Course Learning Outcome (CLO) | This Course will enable the students to: <br> 1. Demonstrate an understanding of the relational data model. <br> 2. Transform an information model into a relational database schema and to use a DDL,DCL and DML, and/or utilities to implement the schema using a DBMS. <br> 3. Formulate, using relational algebra, solutions to a broad range of query problems. <br> 4. Formulate, using SQL, solutions to a broad range of query and data update problems. | | |
| 5 | Credit Value | 1 Credit | 1 credit =15 Hours – Learning and Observation |
| 6 | Total Marks | Maximum Marks: 50 | Minimum Passing Marks: 20 |

**Note:**
1. In every program there should be comment for each coded line or block of code.
2. Practical files should contain printed program with name of author, date,path of program, unit no and printed output.
3. All the following programs or a similar type of programs should be prepared.

### List of Practical
1. Using the following database,

Colleges ( ename, city, address, phone, afdate)
Staffs (sid, sname, saddres, contacts)
Staffjoines (sid, cname, dept, DOJ, post salary0
Techings (sid, class, paperid, fsession, tsession)
Subject ( paperid subject paperno, papername)

Write SQL statements for the following –
a) Create the above tables with the given specifications and constraints.
b) Insert about 10 rows as are appropriate to solve the following queries.
c) List the name of the teachers teaching computer subjects.

d) List the name and cities of all staff working in your college.
e) List the names and cities of all staff working in your college who earn more than 15,000
f) Find the staffs whose names start with 'M' or 'R' and ends with 'A' and /or 7 characters long
g) Find the staffs whose date of joining is 2005.
h) Modify the database so that staff N1 now works in C2 College
i) List the names of subjects, which T1 teaches in this session or all sessions.
j) Find the classes that T1 do not teach at present session.
  a. Find the colleges who have most number of staffs.
  b. Find the staffs that earn a higher salary who earn greater than average salary of their college.
  c. Find the colleges whose average salary is more than average salary of C2
  d. Find the college that has the smallest payroll.
  e. Find the colleges where the total salary is greater than the average salary of all colleges
  f. List maximum average, minimum salary of each college.
    a. List the names of the teachers, departments teaching in more than one department
    b. Acquire details of staffs by name in a college of each college.
    c. Find the names of staff that earn more than each staff of C2 College.
    d. Give all principals a 10% rise in salary unless their salary become greater than 20,000 in such case give 5% rise.
    e. Find all staff that do not work in same cities as the colleges they work.
    f. List names of employees in ascending order according to salary who are working in your college or all colleges.
  a. Create a view having fields sname, cname, dept, DOJ, and post
  b. Create a view consisting of cname, average salary and total salary of all staff in that college.
  c. Select the colleges having highest and lowest average salary using above views.
2. Create the following database,
      Enrollment (enrollno, name, gender, DOB, address, phone)
      Admission (admno, enrollno, course, yearsem, date, cname)
      Colleges (cname, city, address, phone, afdate)
      Fee Structure (course, yearsem, fee)
      Payment (billno, admno, amount, pdate, purpose)
a) Create the above tables with the given specifications and constraints.
b) Insert about 10 rows as are appropriate to solve the following queries.
c) Get full detail of all students who took admission this year class wise
d) Get detail of students who took admission in Bhilai colleges.
e) Calculate the total amount of fees collected in this session
  i)      By your college ii)    by each college  iii)  by all colleges
    a) List the students who have not payed full fee

i)    in your college ii) in all colleges

b) List the number of admission in your class in every year.

c) List the students in the session who are not in the colleges in the same city as they live in.

d) List the students in colleges in your city and also live in your city.

3. Create the following database,

Subjects (paperid, subject, paper, papername)
Test (paperid, date, time, max, min)
Score (rollno, paperid, marks, attendence)
Students (admno, rollno, class, yearsem)

a. Create the above tables with the given specifications and constraints.

b. Insert about 10 rows as are appropriate to solve the following queries.

c. List the students who were present in a paper of a subject.

d. List all roll numbers who have passed in fi9rst division

e. List all student in BCOM-II who have scored higher than average

i)    in your college ii) in every college

f. List the highest score, average and minimum score in BCOM-II

i)    In your college ii)  in every college

4. Using the following database

Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
Staff Joins (sid, cname, dept, DOJ, post salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

Write SQL statements for the following –

a. Create the above tables with the given specifications and constraints.

b. Insert about 10 rows as are appropriate to solve the following queries.

c. List the name of the teachers teaching computer subjects.

d. List the names and cities of all staff working in your college.

e. List the names and cities of all staff working in your college who earn more than 15,000

f. Using the following database

Colleges (cname, city, address, phone, afdate)

5. Using the following database

Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
Staff Joins (sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the staffs whose names start with 'M' or 'R' and ends with 'A' and/or 7 characters long.

b. Find the staffs whose date of joining is 2005.

c. Modify the database so that staff N1 now works in C2 college

d. List the names of subjects which T1 teaches in this session or all sessions.

6. Using the following database

Colleges (cname, city, address, phone, afdate)
Staff (sid, sname, saddress, contacts)
Staff Joins (sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the classess that T1 do not teach at present session.
b. Find the college who have most number of staffs.
c. Find the staffs who earn a higher salary who earn greater than everage salary of their college.
d. Find the colleges whose average salary is more than average salary of C2
e. Find the college that has the smallest payroll.
f. Find the colleges where the total salary is greater than the average salary of all colleges.
g. List maximum, average, minimum salary of each college

7. Using the following database

Colleges (cname, city, address, phone, afdate)
Staffs ( sid, sname, saddress, contacts)
Staff Joins ( sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the classes that T1 do not teach at present session.
b. List the names of the teachers, departments teaching in more than one departments.
c. Acquire details of staffs by name in a college or each college.
d. Find the names of staff who earn more than each staff of C2 college.
e. Give all principals a 10% rise in salary unless their salary becomes greater than 20,000 in such case give 5% rise.
f. Find all staff who do not work in same cities as the colleges they work.
g. List names of employees in ascending order according to salary who are working in your college or all colleges.

8. Using the following database

Colleges (cname, city, address, phone, afdate)
Staffs (sid, sname, saddress, contacts)
Staff Joins (sid, cname, dept, DOJ, post, salary)
Teachings (sid, class, paperid, fsession, tsession)
Subjects (paperid, subject, paperno, papername)

a. Find the classes that T1 do not teach at present session.
b. Create a view having fields sname, cname, dept, DOJ, and post
c. Create a view consisting of cname, average salary and total salary of all staff in that college.
d. Select the colleges having highest and lowest average salary using above views.
e. List the staff names of a department using above views.

9. Enrollment (enrollno, name, gender, DOB, address, phone)
Admission (admno, enrollno, course, yearsem, yearsem, data, cname)

     a.     Create the above tabls with the given specifications and constraints.

     b.     Insert about 10 rows as are appropriate to solve the following queries.

     c.     Get fullo detail of all students who took admission this year Classwise

     d.     Get detail of students who took admision in Bhilai colleges.

     e.     Calculate the total amount of fees collected in this session
          i) by your college ii)bye each college iii)by all colleges

10. Enrollment (enrollno. Name, gender, DOB, address, phone)
    Admission (admno, enrollno, course, yearsem, date, cname)
    Colleges (cname, city, address, phone, afdate)
    Fee Structure (course, yearsem, fee)
    Payment (billno, admno, amount, pdate, purpose)
    a.List the students who have not payed full fee
        i)     In your college ii) in all colleges

    b.     List the number of admissions in your class in every year.

    c.List the students in the session who are nt in the colleges in the same city as they live in.

    d.     List the student in colleges in your city and also live in your city.

11.     Subjects (paperid, subject, paper, papername)
    Test (paperid, date, time, max, min)
    Score (rollno, paperid, marks, attendence)
    Students (admno, rollno, class, yearsem)
    a.Create the above tables with the given specifications and Constraints

    b.     Insert about 10 rows as are appropriate to solve the following queries.

    c.List the students who were present in paper of a subject.

    d.     List all roll numbers who have passed in first division.

    e.     Lit all students in BCOM-III who have scored higher than average
    i) in your college ii) in every college

    f.     List the highest score, average and minimum score in BCOM-III
    i) in your college  ii)  in every college

## PART C - LEARNING RESOURCES

### Text Books, Reference Books, Other Resources

**BOOKS RECOMMENDED:**
1. **Database System Concept:** *A. Silberschatz, H. F. Korth and S. Sudarshan, TMH*
2. **Fundamentals of database Systems:** *Elmasri&Nawathe, pearson Education*
3. **An Introduction to Database Systems:** *C.J. Date, AWL publishing Company*
4. **SQL, PL/SQL:** *Ivan Bayross, BPB Publication*
5. **An Introduction to Database Systems:** *Bipin Desai, Galgotia publication.*
6. **Datebase Management System:** *A. K. Majumdar & P. Bhattacharya, TMH.*

**Online Resources: ( e- Resources/ e- Books/ e- Learning Portals)**

1. https://www.javatpoint.com/dbms-tutorial
2. https://www.geeksforgeeks.org/dbms/
3. https://www.tutorialspoint.com/dbms/index.htm

## PART D: ASSESSMENT AND EVALUATION

**Suggested Continuous Evaluation Methods:**

**Maximum Marks: 50 Marks**

**(Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)**

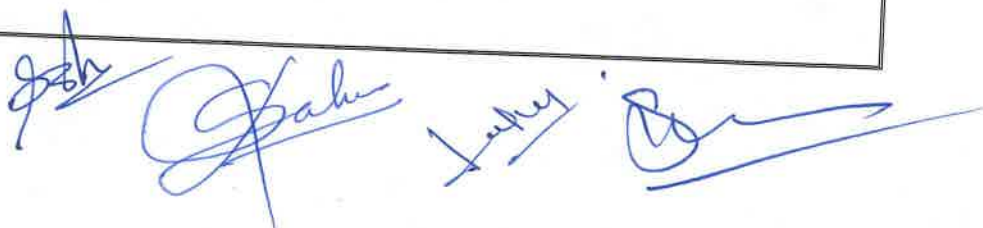| Semester End Exam (SEE) | Laboratory performance: As per Dept. (LOCF) |
|---|---|

**Name & Signature of Members of Board of Studies**

# Course Structure for CBCS
## B.Com. (CA)- IV Semester

| Course Code | Course Type | Course Name | Theory Marks | | Internal Marks | | Practical Marks | | Total Marks | | Teaching Load per Week | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Max. (A) | Min. (B) | Max. (C) | Min. (D) | Max. (E) | Min. (F) | Max. | Min. | L | T | P | |
| BCS 401(L) | (Additional) | Internet Technology | 80 | 32 | 20 | 8 | | | 100 | 40 | 3 | 1 | | 3 |
| BCS 402(P) | | Internet Technology Lab | | | | | 50 | 20 | 50 | 20 | | | 1x2 | 1 |
| | | TOTAL | | | | | | | 150 | 60 | | | | 4 |
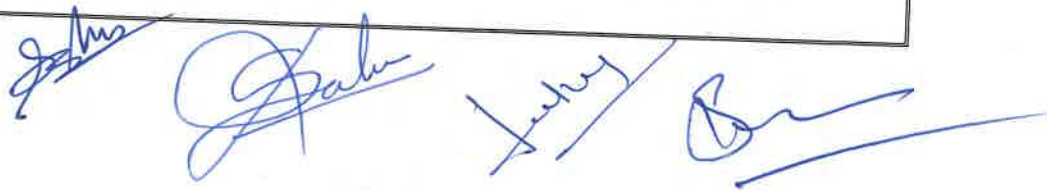
The syllabus for B.Com. (CA) is hereby approved for the session 2024-25.

## Part A: Introduction

| Program: B. Com (CA) | Class: B. Com (CA)- IV Semester | Session:2025-2025 |
|---|---|---|
| Course Code | BCOCA-401 (L) (Additional Course) | |
| Course Title | Internet Technology | |
| Course Type | Core Course | |
| Pre-requisite (if any) | None | |
| Course Outcome | On successful completion of the course, thestudentwillbeableto: 1. Understand the basics of Internet and its protocol. 2. Analyze a web page and identify its elements and attributes. 3. Create web pages using HTML and Cascading Styles sheets 4. Understand the concept of inserting image in web page and hyper link. 5. Build dynamic web pages using JavaScript (client-side programming), CSS and XML. | |
| Credit Value | 3 Credits | 1 credit =15 Hours – Learning and Observation |
| Total Marks | Maximum Marks :100 | Minimum Passing Marks:40 |

## PART B: CONTENT OF THE COURSE

### Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours)

| Unit | Topics (COURSE CONTENTS) | No. of Periods |
|---|---|---|
| I | **Basics of Internet** <br><br> History, Evolution, Internet applications, Intranet, WWW, Emergence of Web, Web Site, client, Web Servers, Web Browser, web standards, Web concept, Search Engine, URL, DNS, Internet Connection, Internet Service Provider, Web Design Strategies, OSI and TCP/IP model, various protocols like HTTP, FTP, SMTP, TELNET. Internet services: Email concept, Sending and receiving secure Email, Voice and video Conferencing, web Based chat services, Chat Services, Internet Messaging, Internet Relay Chat, News Group. | 9 |

| | | |
|---|---|---|
| II | **Basics of HTML**<br><br>Introduction, Html version, HTML tags, what is HTML?, HTML editor, explanation of the structure of the homepage, element in HTML documents, HTML tags, basic HTML tags, comments tag in HTML, viewing the source of the web page, how to download the web page source?, HTML document structure: head section, illustration of document structure. <BASE> element, <ISINDEX> element, <LINK> element, META, <TITLE> element, <SCRIPT> element, practical applications, HTML document structure- body section:- body element and its attributes: Background; Background color, Text; Link; Active Link(ALINK); visited link(VLINK); Left margin; top margin; organization of elements in BODY of the document; Text Block Elements; Text Emphasis Elements. | 9 |
| III | **HTML SPECIAL ELEMENTS**<br><br>Creating headings on a web pages : Aligning the headings, creating list, Working with Links: Creating a Hyperlinks, Setting the Hyperlink Colors, Linking Different sections of A web page, Creating Paragraph, Working with Images, Using Images as Links, Working with Tables, Working with Frames : Creating a Frame, Creating Vertical and Horizontal Frames, Setting the Frame Border Thickness, Applying Hyperlink Targets to a Frame, Creating and HTML Form, Specifying the Action URL and Method to Send the Form, Using the HTML Controls. | 9 |
| IV | **IMAGE, INTERNAL AND EXTERNAL LINKING BETWEEN:**<br><br>Insertion of image using the element IMG (Attributes: SRC (Source), WIDTH, HEIGHT, ALT(alternative), ALIGN), IMG(In – Line Images) Element and Attributes; Illustrations of IMG Alignment, Image as Hypertext Anchors, Internal and External Linking between web pages hypertext anchors, HREF in anchors, Links to a particular place in a document, NAME attribute in anchor, Targeting NAME, TITLE attribute, Practical IT Application Designing web pages links with each other, Designing Frames in HTML. Practical Examples. | 9 |
| V | **CSS, DHTML and Java Script: CSS:** Introduction, Cascading style sheet (CSS), Inline Style sheet, External Style Sheet, Internal Style Sheets, **DHTML:** DHTML document object model, Event handling.<br><br>**Java Script:** Introduction, Language elements, Variables, operators, control statement Array and function in Java Script, Objects of Java script, Client-Side and server-side Java script, Benefits of using Java Script, Embedding JavaScript into HTML Page, Handling Events, overview of VB Script. XHTML, CSS, Extensible Markup Language (XML), Extensible Style sheet Language (XSL). | 9 |

## Part C -Learning Resources

### Text Books, Reference Books, Other Resources

**BOOKS RECOMENDED:**

1. Web Technology, A developer's Perspective, N.P. Gopalan and J. Akilandeswari, PHI publication.
2. Web Technologies : HTML, JAVASCRIPT, PHP, JAVA, JSP, ASP, NET, XML and Ajax, Black Book by Dream Tech Press.
3. Internet : The Complete Reference Millennium Edition Margaret Levine Young, Doug Muder.
4. The Complete Reference : HTML and CSS, Thomas A, Powell, Mc Graw Hill.
5. Java Script The Complete Reference, Thomas Powell, Fritz Schenider, McGrawHill, Third Edition
6. Introduction To HTML, Kamlesh N.Agrawal, O.p, Vyas, P.A. Agrawal.
7. Web Technology and Design, Xavier, C, New Age International.
8. HTML, DHTML, Java Script, Perl and CGI, Ivan Bayros, BPB Publication.
9. Internet and Web Design, Ramesh Bangia, New Age International.
10. Business on the net, Kamlesh N. Agarawala, Amit Lal & Deeksha Agarawal, Macmillan India Ltd.

## PART A: INTRODUCTION

| Program: B. Com (CA) | Class: B. Com (CA) – III Semester | | Session:2024-2025 |
|---|---|---|---|
| 1 | Course Code | BCOCA-402 (P) | |
| 2 | Course Title | Internet Technology Lab | |
| 3 | Course Type | Practical | |
| 4 | Course Learning Outcome (CLO) | This Course will enable the students to: <br><br> 1. Write program and Design web pages using HTML <br> 2. Discuss modular approach by working with functions and derive datatypes. <br> 3. Format and validate web pages using CSS and Java Scipt <br> 4. Understand the basics of PHP and Design web sites and deploy it on web servers. | |
| 5 | Credit Value | 1 Credit | 1 credit =15 Hours – Learning and Observation |
| 6 | Total Marks | Maximum Marks: 50 | Minimum Passing Marks: 20 |

Note:
1. In every program there should be comment for each coded line or block of code.
2. Practical file should contain printed programs with name of author, date, path of program, unit no. and printed output.
3. All the following programs or a similar type of programs should be prepared.

## List of Practical

### HTML

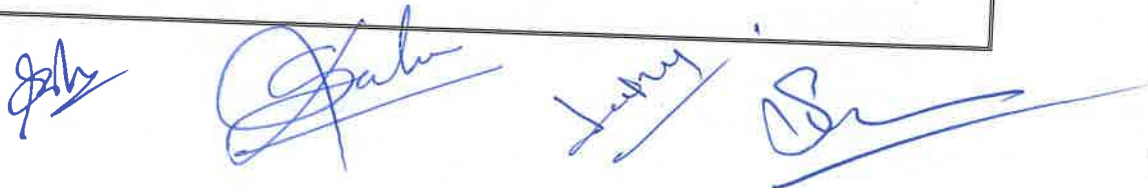Q.1. Write an HTML program to create the following table:

| Class | Subject1 | Subject2 | Subject3 |
|---|---|---|---|
| BCOM I | Visual Basic | PC Software | Electronics |
| BCOM II | C++ | DBMS | English |
| BCOM III | Java | Multimedia | CSA |

Q.2. Write an HTML program to create the following lists:
1. C
2. C++
3. Fortran
4. COBOL

Q.3. Write an HTML program to create the following lists:
1. Java

2. Visual Basic

3. BASIC

4. COBOL

Q.4. Write an HTML program to demonstrate hyperlinking between two web pages. Create a marquee and also insert an image in the page.

Q.5. Write an HTML program to create frames in HTML with 3 columns (Width = 30%, 30% , 40%).

Q.6. Write an HTML program to create a web page with a blue background and the following text:

## *New Delhi*

*New Delhi, the capital and the third largest city of India is a fusion of the ancient and the modern. The refrains of the Muslim dynasties with its architectural delights, give the majestic ambience of the bygone era.*

Q.7. Write an HTML program to create the following table:

### Admission

| Course | OC | BC | MBC | SC/ST | TOTAL |
|---|---|---|---|---|---|
| Computer science | 9 | 18 | 5 | 5 | 37 |
| Commerce | 14 | 25 | 6 | 5 | 50 |
| Grand total | | | | | 87 |

Q.8. Write an HTML program to create the following table:

### Car Price List

| Maruti | | Tata | | Ford | |
|---|---|---|---|---|---|
| Model | Price | Model | Price | Model | Price |
| Maruti 800 | 2 Lac | Sumo | 2 Lac | Ikon | 5 Lac |
| Omni | 3 Lac | Scorpio | 3 Lac | Gen | 2 Lac |

Q.9. Write an HTML program to create the following table:

### Students Records

| Name | Subject | Marks |
|---|---|---|
| Arun | Java | 70 |
| | C | 80 |
| Ashish | Java | 75 |
| | C | 69 |

Q.10. Create an HTML document and embed a flash movie in it.

Q.11. Write the HTML coding to display the following table. Also insert an image in the web page.

| Subject | Max | Min | Obtain |
|---|---|---|---|
| Java | 100 | 33 | 75 |
| Multimedia | 100 | 33 | 70 |
| Operating System | 100 | 33 | 68 |
| C++ | 100 | 33 | 73 |

Q.12. Write the HTML coding to display the following table:

| Name | | Rahul | |
|---|---|---|---|
| Roll No. | | 101 | |
| Subject | Max | Min | Obtain |
| Java | 100 | 33 | 75 |
| Multimedia | 100 | 33 | 70 |

Q.13. Write an HTML program to create a form as the following:

```
Enter Name:
Enter Roll No.:
Enter Age:
Enter DOB:
```

Q.14. Write an HTML program to create a web page with an image as background and the following text:

## New Delhi

New Delhi, the capital and the third largest city of India is a fusion of the ancient and the modern. The refrains of the Muslim dynasties with its architectural delights, give the majestic ambience of the bygone era.

On the other side New Delhi, the imperial city built by British, reflect the fast paced present. The most fascinating of all is the character of Delhi which varies from the 13th present century mausoleum of the Lodi kings to ultra modern glass skyscrapers.

Q.15. Create the following HTML form.

```
USERNAME :  [          ]

PASSWORD :  [          ]

When user types characters in a password field, the browser displays
asterisks or bullets instead of characters.

[ Submit Query ]
```

Done                                    My Computer          100%

Q.16. Create the following HTML form.

```
FIRSTNAME : [          ]
LASTNAME :  [          ]


GENDER :
Male  O   Female  O


SUBJECTS:  [ Multimedia        v ]
           Multimedia
           Operating System
           CSA
[ Submit Query ]
```
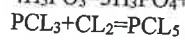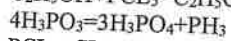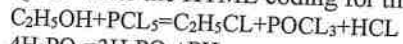
Q.17. Create the following HTML form.

Enter your name : [                    ]
Enter your rollno : [                    ]

Subjects :
☐ Java
☐ C
☐ Visual Basic
☐ C++

Class: [ BCA I      ▾ ]
       | BCA I  |
       | BCA II |
       | BCA III|
[ Submit Query ]

Q.18. Write the HTML coding for the following equations:
$C_2H_5OH + PCL_5 = C_2H_5CL + POCL_3 + HCL$
$4H_3PO_3 = 3H_3PO_4 + PH_3$
$PCL_3 + CL_2 = PCL_5$

Q.19. Write the HTML code to display the following:
1. Actors

    1. Bruce Willis

    2. Gerard Butler

    3. Vin Diesel

    4. Bradd Pitt

2. Actress

    1. Julia Roberts

    2. Angelina Jolie

    3. Kate Winslet

    4. Cameron Diaz

Q.20. Write the HTML code to display the following:
1. Cricket Players
  **1.** Batsman

    1. Sachin Tendulkar

    2. Rahul Dravid

    3. Virendra Sehwag

  **2.** Bowler

    a. Kumble

b. Zaheer Khan

c. Balaji

3. Spinner

   a) Harbhajan

   b) Kumble

   c) Kartik

**Note: At least 5 programs of CSS and Java Script to be done separately.**

## PART C - LEARNING RESOURCES

### Text Books, Reference Books, Other Resources

1. Web Technology, A developer's Perspective, N.P. Gopalan and J. Akilandeswari, PHI publication.
2. Web Technologies : HTML, JAVASCRIPT, PHP, JAVA, JSP, ASP, NET, XML and Ajax, Black Book by Dream Tech Press.
3. Internet : The Complete Reference Millennium Edition Margaret Levine Young, Doug Muder.
4. The Complete Reference : HTML and CSS, Thomas A, Powell, Mc Graw Hill.
5. Java Script The Complete Reference, Thomas Powell, Fritz Schenider, McGrawHill, Third Edition
6. Introduction To HTML, Kamlesh N.Agrawal, O.p, Vyas, P.A. Agrawal.
7. Web Technology and Design, Xavier, C, New Age International.
8. HTML, DHTML, Java Script, Perl and CGI, Ivan Bayros, BPB Publication.
9. Internet and Web Design, Ramesh Bangia, New Age International.
10. Business on the net, Kamlesh N. Agarawala, Amit Lal & Deeksha Agarawal, Macmillan India Ltd.

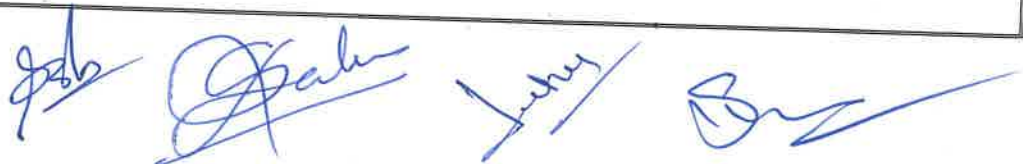## PART D: ASSESSMENT AND EVALUATION

**Suggested Continuous Evaluation Methods:**

**Maximum Marks: 50 Marks**

**(Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)**

| Semester End Exam (SEE) | Laboratory performance: As per Dept. (LOCF) |
|---|---|

Name and Signatures

V.C. Nominee .............................................

Subject Expert .............................................

Subject Expert.............................................

Alumni(member).......................................

Prof. from other Dept. of Sc. Faculty ............

Specialist from Industry .........................

Departmental members

1. HOD- Dr. Sanat Kumar Sahu.................

2. Mr. Dileep Kumar Sahu.................
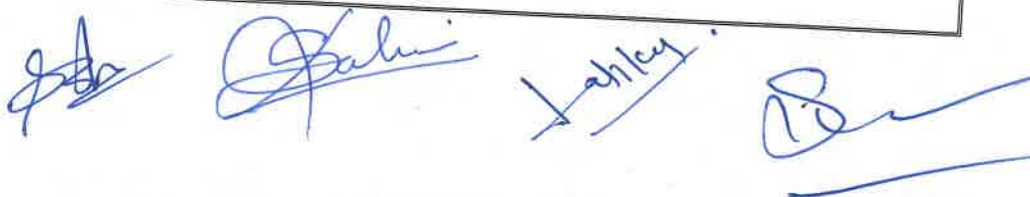
3. Dr. LatikaTamrakar ...................

# Course Structure for CBCS
## B.Com. (CA)- V Semester

| Course Code | Course Type | Course Name | Theory Marks | | Internal Marks | | Practical Marks | | Total Marks | | Teaching Load per Week | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Max. (A) | Min. (B) | Max. (C) | Min. (D) | Max. (E) | Min. (F) | Max. | Min. | L | T | P | |
| BCOCA - 501(L) | Additional | DOT NET TECHNOLOGY | 60 | 24 | 15 | 6 | | | 75 | 30 | 3 | 1 | | 3 |
| BCOCA - 502(P) | | DOT NET TECHNOLOGY Lab | | | | | 25 | 10 | 25 | 10 | | | 1x2 | 1 |
| BCOCA-503 | SEC | Project | | | | | 50 | 20 | 50 | 20 | 1 | | 1x2 | 2 |
| | | TOTAL | | | | | | | 150 | 60 | | | | 6 |

# Course Structure for CBCS
## B.Com. (CA)- VI Semester

| Course Code | Course Type | Course Name | Theory Marks | | Internal Marks | | Practical Marks | | Total Marks | | Teaching Load per Week | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Max. (A) | Min. (B) | Max. (C) | Min. (D) | Max. (E) | Min. (F) | Max. | Min. | L | T | P | |
| BCOCA 601(L) | Additional | PROGRAMMING IN PYTHON | 60 | 24 | 15 | 6 | | | 75 | 30 | 3 | 1 | | 3 |
| BCOCA 602(P) | | PROGRAMMING IN PYTHON LAB | | | | | 25 | 10 | 25 | 10 | | | 1x2 | 1 |
| BCOCA-603 | SEC | Internship | | | | | 50 | 20 | 50 | 20 | 1 | | 1x2 | 2 |
| | | TOTAL | | | | | | | 150 | 60 | | | | 6 |

The course curriculum for B.Com. (CA) is hereby approved for the session 2024-25.

## GOVT. V.Y.T. P.G. AUTONOMOUS COLLEGE, DURG (C.G.)
## Department of Computer Science
## Course Curriculum for AY 2024-25

### PART A: INTRODUCTION

| Program: (UG) | Class: B. ComS(CA)    Semester - V | | Session:2024-2025 |
|---|---|---|---|
| 1 | Course Code | BCOCA-501(L)(Additional Course) | |
| 2 | Course Title | DOT NET TECHNOLOGY | |
| 3 | Course Type | Theory (Additional Course) | |
| 4 | Course Learning Outcome (CLO) | This Course will enable the students to: <ul><li>**Create** and **manipulate** GUI components in VB.Net</li><li>**Design** and **Implement** Windows Applications using Windows Forms, Control Library, Advanced UI Programming & Data Binding concepts</li><li>**Design** and **Implement** database connectivity using ADO.NET in window-based application.</li><li>**Identify** and resolve problems (debug /trouble shoot) in VB.NET window-based application</li><li>**Identify** Industry defined problem and suggesting solution(s) using .NET application.</li></ul> | |
| 5 | Credit Value | 3 Credits | 1 credit =15 Hours – Learning and Observation |
| 6 | Total Marks | Maximum Marks :75 | Minimum Passing Marks:30 |

### PART B: CONTENT OF THE COURSE

| Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours) | | |
|---|---|---|
| Unit | Topics (COURSE CONTENTS) | No. of Periods |
| I | **Inside the .Net Framework:** Overview of .Net framework, Features of .Net, CLR, Common Language Specification, !IT compilation, MSIL, Namespace, FCL, Assemblies, Common Type System, Cross Language, interoperability, Garbage Collection. | 9 |
| II | **Programming with VB.Net:** Data types, Variables, Constant, Type Conversions, Operators, Control Structure: Conditional Statement, loops(do loop, for loop, while loop, for Each...Next loop), arrays, Declaring arrays and dynamic arrays, Types, Structure, Enumeration, Sub Procedure, Functions. | 9 |

| | | | |
|---|---|---|---|
| III | **Windows Form:** Windows Form: Working with visual Studio IDE, Creating a .Net Solution, simple forms, MDI forms, windows forms: Control class, TextBox, Richtextboxes, Labels, Button, Checkbox, Radio Button, Panels, Group box, Listbox , Checked list box, Combobox , Picture box, Scrollbar, Timer, Trackbar, Progress bar. Msgbox Function, Message Box. Show Method, Input Box function, Creating MDI application. Menus, creating Menu, sub menu Items, Context Menu. | 9 |
| IV | **OOPS concept:** Class and objects, creating classes, objects, creating data member, creating class shared data member, shared methods, shared properties, overloading methods and properties, with statement, constructor, Destructor(using finalize method), Inheritance, overriding base class member, inheriting constructor, overloading base class member. | 9 |
| V | **Database Programming:** Database concept, Ado.net Architecture, .Net Data Provider (Connection class: OledbConnection, SqIConnection, Command class : SqICommand class, OleDbCommand class, DataAdapter class, DataReader class), Dataset Component, Creating Database application using windows forms(DB connectivity through ADO.Net), accessing data from database, navigate in data, working with Data Grid. | 9 |

## PART C - LEARNING RESOURCES

### Text Books, Reference Books, Other Resources

**TEXT BOOKS Recommended:**

1. MSDN online — By Microsoft.
2. Visual Basic .NET Complete — BPB Publications, New Delhi.
3. The Complete Reference VB. NET — Jeffery R. Shapiro, Tata McGraw Hill.
4. Visual Basic .NET Programming Black Book — Steven Holzner by Dreamtech Press.

**Online Resources: ( e- Resources/ e- Books/ e- Learning Portals):**

1. https://dotnettutorials.net/
2. https://dotnet.microsoft.com/en-us/learn
3. https://www.javatpoint.com/net-framework
4. https://www.tutorialspoint.com/dotnet_core/index.htm
5. https://www.w3schools.com/asp/default.ASP

## PART D: ASSESSMENT AND EVALUATION

**Suggested Continuous Evaluation Methods:**

| | |
|---|---|
| **Maximum Marks:** | **75 Marks** |
| **Continuous Comprehensive Evaluation (CCE):** | **15 Marks** |
| **Semester End Exam (SEE):** | **60 Marks** |

| Internal Assessment: | Internal Test of 15 Marks and Assignment of 15 Marks |
|---|---|
| Continuous Comprehensive Evaluation (CCE) | |

| Semester End Exam (SEE) | Pattern -FOUR Questions (A, B, C, D) from each Unit | |
|---|---|---|
| | Question - A & B: (Compulsory) Very short answer type (01 each) | 02 x 5 = 10 Marks |
| | Question - C: Short answer type question | 03 x 5 = 15 Marks |
| | Question - D: Long answer type question | 07 x 5 = 35 Marks |
| | **Total** | **= 60 Marks** |

**Name & Signature of Members of Board of Studies**

# GOVT. V.Y.T. P.G. AUTONOMOUS COLLEGE, DURG (C.G.)
## Department of Computer Science
## Course Curriculum for AY 2024-25
## Lab Course

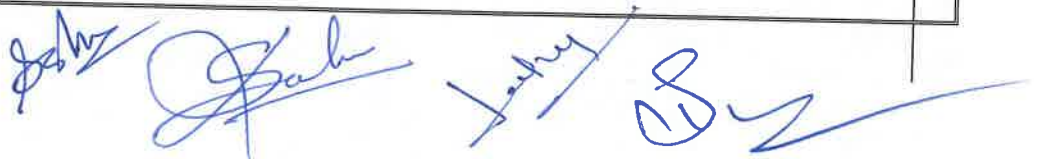| PART A: INTRODUCTION | | | |
|---|---|---|---|
| **Program: UG** | **Class: B. Com (CA) – V SemesteR** | | **Session:2024-2025** |
| 1 | **Course Code** | BCOCA-502 (P) | |
| 2 | **Course Title** | Dot Net Technology Lab | |
| 3 | **Course Type** | Practical | |
| 4 | **Course Learning Outcome (CLO)** | This Course will enable the students to: <br><br> • Create and manipulate GUI components in VB.Net <br> • Design and Implement Windows Applications using Windows Forms, Control Library, Advanced UI Programming & Data Binding concepts <br> • Design and Implement database connectivity using ADO.NET in window based application. <br> • Identify and resolve problems (debug /trouble shoot) in VB.NET window based application <br> • Identify Industry defined problem and suggesting solution(s) using .NET application. | |
| 5 | **Credit Value** | 1 Credit | 1 credit =15 Hours – Learning and Observation |
| 6 | **Total Marks** | Maximum Marks :25 | Minimum Passing Marks:10 |

**Note:**
1. In every program there should be comment for each coded line or block of code.
2. Practical files should contain printed program with name of author, date, path of program, unit no and printed output.
3. All the following programs or a similar type of programs should be prepared.

## List of Programs:

1. Write a program to find maximum between three numbers.
2. Write a program to check whether a number is negative, positive or zero.
3. Write a program to check whether a year is leap year or not.
4. Write a program to check whether a character is alphabet or not.
5. Write a program to find all roots of a quadratic equation

6. Design an application to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:
   Percentage >= 90% :
   Grade A Percentage >=
   80% : Grade B Percentage
   >= 70% : Grade C
   Percentage >= 60% :
   Grade D Percentage >=
   40% : Grade E Percentage
   < 40% : Grade F

7. Design an application to input basic salary of an employee and calculate its Gross salary according to following:
   Basic Salary <= 10000: HRA = 20%, DA = 80%
   Basic Salary a 20000: HRA = 25%, DA = 90%
   Basic Salary > 20000: HRA = 30%, DA = 95%

8. Design an application to input electricity unit charges and calculate total electricity bill according to the given condition:
   For first 50 units Rs. 0.50/unit
   For next 100 units Rs. 0.75/unit
   For next 100 units Rs. 1.20/unit
   For unit above 250 Rs. 1.50/unit
   An additional surcharge of 20% is added to the bill

9. Write a program to convert decimal to binary number system using bitwise operator.

10. Write a program to swap two numbers using bitwise operator

11. Write a program to create Simple Calculator using select case.

12. Write a program to find sum of all natural numbers between 1 to n .

13. Write a program to find first and last digit of any number
    1

14. Write a program to enter any number and print its reverse.

15. Write a program to enter any number and check whether the number is palindrome or not.

16. Write a program to check whether a number is Armstrong number or not.

17. Write a program to print Fibonacci series up to n terms.

18. Write a program to print Pascal triangle upto n rows.

19. Write a program to print all negative elements in an array.

20. Design a digital clock using timer control.

21. Design an application that accepts the item name from the user and add it to a listbox and combobox.

22. Create an application that offers various food items to select from check boxes and a

mode of payment using radio button. It then display the total amount payable.

23. Create an application to implement the working of Context menu on textbox.

24. WAP to illustrate all functionalities of listbox and combobox.

25. WAP using checkboxes for the following font effects.

>    Bold
>    Italic
>    Underline
>    Increase Font size
>    Decrease Font size
>    Font Color

26. WAP for temperature conversion using radiobutton

27. WAP to launch a rocket using Picturebox and Timer control.

28. WAP to change the back color of any control using scrollbox. 29. WAP to search an element for one dimensional array.

29. Design a menu such that it contain submenu such as Addition, Subtraction, Scalar Multiplication, Multiplication, Transpose of two metrics.

30. Develop an application which is similar to notepad using menus.
31. Develop an application for facilitating purchasing order.

32. Develop an application for billing system in coffee shop

33. Develop an application which is similar to login formDefine a Class 'ACCOUNT' include following Data members: Name of depositor, Account no, type of Account, balance amount. Member Functions: To Deposit an amount, to withdraw an amount after checking balance, to show balance. Also provide proper validations wherever necessary. Write a main program to test above class.

34. Develop a project which displays the student information in the relevant fields from the database which already exists.

35. WAP to display records of a table using data dapter and code for buttons to move at first record, next record, previous record, last record in the table.

36. Create a table for employee and write a program using Dataset to add, delete, edit & navigate records.
37. WAP to access a database using ADO.net & display a key column in the combo box or list box when an item is selected in it, its corresponding records is shown in Datagridcontrol.

## PART C - LEARNING RESOURCES

| Text Books, Reference Books, Other Resources |
|---|

**TEXT BOOKS Recommended:**

5. MSDN online — By Microsoft.
6. Visual Basic .NET Complete — BPB Publications, New Delhi.
7. The Complete Reference VB. NET — Jeffery R. Shapiro, Tata McGraw Hill.
8. Visual Basic .NET Programming Black Book — Steven Holzner by Dreamtech Press.

**Online Resources: ( e- Resources/ e- Books/ e- Learning Portals):**

6. https://dotnettutorials.net/

7. https://dotnet.microsoft.com/en-us/learn

8. https://www.javatpoint.com/net-framework

9. https://www.tutorialspoint.com/dotnet_core/index.htm

10. https://www.w3schools.com/asp/default.ASP

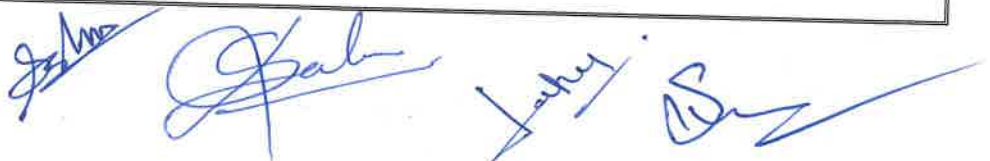## PART D: ASSESSMENT AND EVALUATION

**Suggested Continuous Evaluation Methods:**

**Maximum Marks:**                      **25 Marks**

**(Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)**

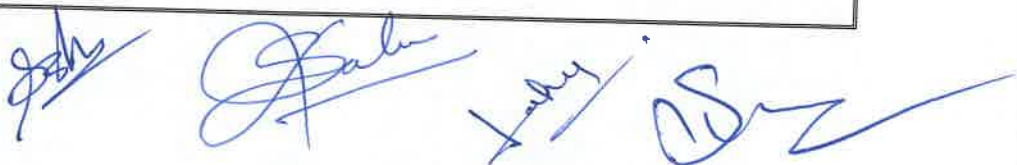| Semester End Exam (SEE) | Laboratory performance: As per Dept. (LOCF) |
|---|---|

**Name & Signature of Members of Board of Studies**

# Course Structure for CBCS
## B.Com. (CA)- VI Semester

| Course Code | Course Type | Course Name | Theory Marks | | Internal Marks | | Practical Marks | | Total Marks | | Teaching Load per Week | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Max. (A) | Min. (B) | Max. (C) | Min. (D) | Max. (E) | Min. (F) | Max. | Min. | L | T | P | |
| BCOCA 601(L) | Additional | PROGRAMMING IN PYTHON | 60 | 24 | 15 | 6 | | | 75 | 30 | 3 | 1 | | 3 |
| BCOCA 602(P) | | PROGRAMMING IN PYTHON LAB | | | | | 25 | 10 | 25 | 10 | | | 1x2 | 1 |
| BCOCA-603 | SEC | Internship | | | | | 50 | 20 | 50 | 20 | 1 | | 1x2 | 2 |
| | | TOTAL | | | | | | | 150 | 60 | | | | 6 |

The course curriculum for B.Com. (CA) is hereby approved for the session 2024-25.

## Part A: Introduction

| | | | |
|---|---|---|---|
| Program: **Degree Course** | | Class: **B.Com (CA)**  Semester - VI | Session:**2024-2025** |

| | | | |
|---|---|---|---|
| 1. | Course Code | **B.Com (CA)-601(L)** | |
| 2. | Course Title | **Programming in Python** | |
| 3. | Course Type | **Theory** | |
| 4. | Pre-requisite (if any) | Basic knowledge of programming and concept of object-oriented programming | |
| 5. | Course Learning. Outcomes (CLO) | At the end of this course, the students will be able to: <ul><li>Define the structure and components of a Python program.</li><li>Demonstrate proficiency in handling of loops and creation of functions. Identify the methods to create and manipulate lists, tuples and dictionaries.</li><li>Discover the commonly used operations involving regular expressions and file system.</li><li>Interpret the concepts of Object-Oriented Programming as used in Python.</li><li>Determine the concept of Data visualization using matplotlib.</li></ul> | |
| 6. | Credit Value | **3 Credits** | **1 credit =15 Hours – Learning and Observation** |
| 7. | Total Marks | **Maximum Marks :75** | **Minimum Passing Marks:30** |

## Part B: Content of the Course

### Total no. of Teaching/ Learning Periods = 45 Periods (45 Hours)

| Unit | Topics | No. of Periods |
|---|---|---|
| I | **Introduction to Python:** Installing Python, basic syntax, interactive shell, editing, saving, and running a script, the concept of data types; variables, assignments; immutable variables; numerical types, **Operators in Python** (Arithmetic Operator, Relational Operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bit wise Operator, Increment or Decrement operator) and Expressions, Input and Output Statements, understanding error messages. | 9 |
| II | **Creating Python Programs:**, Control statements (Branching, Looping, Conditional Statement, exit function, **Function:** Defining a function, calling a function, Types of functions, Function Arguments, Anonymous functions, Global and local variables. | 9 |
| III | **String manipulations:** subscript operator, indexing, slicing a string; **strings and number system:** converting strings to numbers and vice-versa. Binary, Octal, Hexadecimal numbers. <br><br>**Lists, Tuples, Dictionaries and Set ;** Basic list Operators, replacing, inserting, removing an element, searching and sorting lists, Accessing tuples, Operations, Working, Functions and Methods, dictionary literals, adding and removing keys, accessing and replacing values, Traversing Dictionaries. Using Set data types, operations on Set. | 9 |

| | | | |
|---|---|---|---|
| IV. | **Classes and Objects:** Class Fundamentals, Declaring Object, Constructors, Defining Methods, method overloading, Inheritance: Inheritance basic and types, Member accessibility modifier: public, protected, private.<br><br>**Exception Handling:** Exception, Exception Handling, except clause, try, finally clause, User defined exceptions. | 9 | |
| V. | **Python File Operations:** manipulating files and directories, os and sys modules; text files: reading/writing text and numbers from/to a file; creating and reading a formatted file (csv or tab-separated).<br><br>**Data Visualization using Matplotlib:** - Purpose of plotting, drawing and saving of different basic Matplotlib charts (line plot, bar graph, histogram). Basic customization of plots: adding label, title, and legend in plots. | 9 | |

## Part C - Learning Resources

Text Books, Reference Books, Other Resources

**Text Books Recommended:**

1. T. Budd, Exploring Python, TMH, 1st Ed, 2011
2. Allen Downey, Jeffrey Elkner, Chris Meyers, How to think like a computer scientist: Learning with Pyth, Freelyavailableonline, 2012
3. Luca Massaron John Paul Mueller, Python for Data Science For Dummies, Wiley, 2ed, 2019

**Reference Books:**

1. Allen B. Downey, Think Python: How to Think Like a Computer Scientist, 2nd edition, O'Reilly, 2015
2. Zed A. Shaw, Learn Python 3 the Hard Way, Addison-Wesley, 2016

**Online Resources: (e- Resources/ e- Books/ e- Learning Portals)**

1. https://www.w3schools.com/python/
2. https://docs.python.org/3/tutorial/index.html
3. https://www.tutorialspoint.com/python/index.htm
4. https://www.javatpoint.com/python-tutorial
5. https://www.geeksforgeeks.org/python-programming-language-tutorial/
6. https://www.python.org/about/gettingstarted/

## PART D: ASSESSMENT AND EVALUATION

| Suggested Continuous Evaluation Methods: | |
|---|---|
| **Maximum Marks:** | **75 Marks** |
| **Continuous Comprehensive Evaluation (CCE):** | **15 Marks** |
| **Semester End Exam (SEE):** | **60 Marks** |
| **Internal Assessment:** | Internal Test of 15 Marks and Assignment of 15 Marks |
| Continuous Comprehensive Evaluation (CCE) | |

| **Semester End Exam (SEE)** | **Pattern -FOUR Questions (A, B, C, D) from each Unit** | |
|---|---|---|
| | Question - A & B: (Compulsory) Very short answer type (01 each) | 02 x 5 = 10 Marks |
| | Question - C: Short answer type question | 03 x 5 = 15 Marks |
| | Question - D: Long answer type question | 07 x 5 = 35 Marks |
| | **Total** | **= 60 Marks** |

**Name & Signature of Members of Board of Studies**

# Lab Course
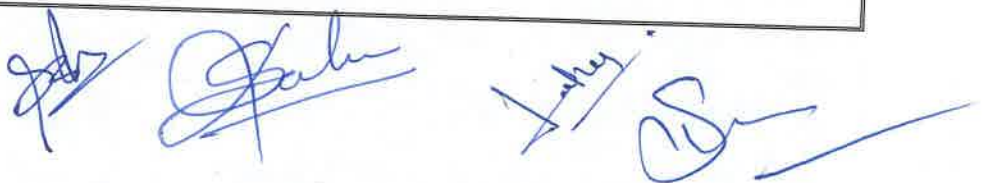
## PART A: INTRODUCTION

| Program: B (UG) | Class: B. Com(CA) | Semester – VI | Session:2024-2025 |
|---|---|---|---|
| **1** | **Course Code** | B.Com(CA) -602(P) | | |
| **2** | **Course Title** | **Programming in Python Lab** | | |
| **3** | **Course Type** | Practical | | |
| **4** | **Course Learning Outcome (CLO)** | **This Course will enable the students to:** <br><br> 1. Know basics of f python to write Programs. <br> 2. Write program to handle String and List. <br> 3. Implement program related to tuples and dictionary. <br> 4. Design program related to objects and classes. <br> 5. Design and plot various graph using matplotlib in python | | |
| **5** | **Credit Value** | 1 Credit | 1 credit =15 Hours – Learning and Observation | |
| **6** | **Total Marks** | Maximum Marks :25 | | Minimum Passing Marks:10 |

## PART B: List of Programs

1. Find the largest/smallest number in a list/tuple

2. Input a list of numbers and swap elements at the even location with the elements at the odd location.

3. Input a list/tuple of elements, search for a given element in the list/tuple.

4. Input a list of numbers and test if a number is equal to the sum of the cubes of its digits. Find the smallest and largest such number from the given list of numbers.

5. Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have marks above 75.

6. To print the highest and lowest values in the dictionary

    1. Read a text file line by line and display each word separated by #. Read a text file and
        a. display thenumber of vowels/ consonants/ uppercase/ lowercase characters in the
        b. file.

    2. Create a binary file with name and roll number. Search for a given roll number and display the name, ifnot found display appropriate message.

    3. Create a binary file with roll number, name and marks. Input a roll number and update the marks.

    4. Remove all the lines that contain the character `a' in a file and write it to another file.

5. Write a program that reads an integer value and prints —leap year or —not a leap year.

6. Write a program that takes two number and print the sum of these numbers.

7. Write a program to create the following Pattern

8. For example enter a size: 5 -

9. *

10. **

11. **

12. ****

13. *****

14. Write a function that takes an integer n as input and calculates the value of $1 + 1/1! +$

15. $1/2! + 1/n!$

16. Write a function that takes an integer input and calculates the factorial of that number,

17. Write a function that takes a string input and checks if it is a palindrome or not.

18. Write a list function to convert a string into a list, as in list (-abc) gives [a, b, c].

19. Write a program to generate Fibonacci series.

20. Write a program to check whether the input number is even or odd.

21. Write a program to compare three numbers and print the largest one.

22. Write a program to print factors of a given number.

23. Write a method to calculate GCD of two numbers.

24. Write a program to create Stack Class and implement all its methods, (Use Lists).

25. Write a program to create Queue Class and implement all its methods, (Use Lists)

26. Write a program to implement linear and binary search on lists,

27. Write a program to sort a list using insertion sort and bubble sort and selection sort.

28. Write a Python program to generate a bar graph using matplotlib module.

## PART C - LEARNING RESOURCES

### Text Books, Reference Books, Other Resources

### Text Books Recommended:

4. T. Budd, Exploring Python, TMH, 1st Ed, 2011
5. Allen Downey, Jeffrey Elkner, Chris Meyers, How to think like a computer scientist: Learning with Pyth, Freelyavailableonline, 2012
6. Luca Massaron John Paul Mueller, Python for Data Science For Dummies, Wiley, 2ed, 2019

### Reference Books:

3. Allen B. Downey, Think Python: How to Think Like a Computer Scientist, 2nd edition, O'Reilly, 2015
4. Zed A. Shaw, Learn Python 3 the Hard Way, Addison-Wesley, 2016

### Online Resources: (e- Resources/ e- Books/ e- Learning Portals)

7. https://www.w3schools.com/python/
8. https://docs.python.org/3/tutorial/index.html
9. https://www.tutorialspoint.com/python/index.htm
10. https://www.javatpoint.com/python-tutorial
11. https://www.geeksforgeeks.org/python-programming-language-tutorial/
12. https://www.python.org/about/gettingstarted/

## PART D: ASSESSMENT AND EVALUATION

### Suggested Continuous Evaluation Methods:

**Maximum Marks:**                                    **25 Marks**

(Will include Internal assessment, Lab records and End Semester Viva/Voce and performance)

| Semester End Exam (SEE) | Laboratory performance: As per Dept. (LOCF) |
|---|---|

**Name & Signature of Members of Board of Studies**