Bachelor of Commerce (Computer Appliation) (OB & CBCS) Examination

Scheme of Examination for Bachelor of Commerce with Computer Application (BCCA) Outcome Based & Choice Based Credit System (OB & CBCS) from Academic Session 2022-23

As Approved by the Academic Council vide Item No. 23 in its meeting held on 8th July 2022

1. **Details of eligibility for BCCA semester 1 examination**

   A) For the **BCCA 1st Semester**, Examinee shall have Passed the 12th Standard Examination of the Maharashtra State Board of Secondary and Higher Secondary Education/CBSE/ICSE, with English at Higher or Lower level and any Modern Indian Language at higher or lower level with any combination of optional subjects;

   OR

   B) XII Standard Examination of Maharashtra State Board of Secondary and Higher Secondary Education in Vocational Stream with one language only; OR any other examination recognized as equivalent thereto; in such subjects and with such standards of attainments as may be prescribed Minimum Competition vocation course (MCVC).

   OR

   C) Any other Equivalent Examination of any State in (10+2) pattern with any combination of subjects.

2. **Teaching and Examination Scheme**

   Course Nomenclature:

   CC – Core course
   AE – Ability Enhancement Courses
   SE – Skill Enhancement Course
   DSE – Discipline Specific Electives
   GE – Generic Elective
   ODL – Open and Distance Learning

   Bachelor of Computer Application (BCCA)
   BCCA – Semester I

Sr. No.	Course Type	Course/Subject Name	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
				Total Periods per Week	Max. Marks (TH) *	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	1AE1	English and Business Communication – I	1T1	5	80	20	100	40	100	4
2	1CC2	MS Office (IT)	1T2	5	80	20	100	40	100	4
3	1CC3	Fundamentals of Computers	1T3	5	80	20	100	40	100	4
4	1GE4	Professional Ethics & Human Values OR	1T4	5	80	20	100	40	100	4

		Personal Wellbeing								
Practical										
5	1CC5	Tally I (ERP 9)	1P5	9	100	-	100	40	100	4
		Total		29	420	80	500	200	500	20

Notes:

   i.   Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.

   ii.   TH = Theory, PR = Practical, IA = Internal Assessment.

   iii. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.

   iv. The practical shall be treated as a separate passing head.

   v.   Record should be prepared for Practical. Both Components should be included in Practical Record.

   vi. The candidate has to pass theory papers and Practical Paper separately.

   vii. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

   viii. Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits

   ix. Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

   x.   Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.

BCCA – Semester - II

Sr. No.	Course Type	Course/Subject Name	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
				Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	2AE1	English and Business Communication – II	2T1	5	80	20	100	40	100	4
2	2CC2	Principles of Business Management	2T2	5	80	20	100	40	100	4
3	2CC3	Data Base Management System	2T3	5	80	20	100	40	100	4
4	2SE4	E-Commerce and Web Designing	2T4	5	80	20	100	40	100	4
Practical										
5	2CC5	Tally II (ERP 9)	2P5	9	100	-	100	40	100	4
		Total		29	420	80	500	200	500	20

Notes:

i. Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.
ii. TH = Theory, PR = Practical, IA = Internal Assessment.
iii. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
iv. The practical shall be treated as a separate passing head.
v. Record should be prepared for Practical. Both Components should be included in Practical Record.
vi. The candidate has to pass theory papers and Practical Paper separately.
vii. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.
viii. Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits
ix. Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.
x. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.

BCCA – Semester - III

Sr. No.	Course Type	Course/Subject Name	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
				Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	3AE1	Environmental Studies & Community Engagement	3T1	5	80	20	100	40	100	4
2	3CC2	Business Studies	3T2	5	80	20	100	40	100	4
3	3AE3	CSS & Java Script	3T3	5	80	20	100	40	100	4
4	3GE4	Ethical Hacking OR Computer Network OR Content Writing & Analysis	3T4	5	80	20	100	40	100	4
Practical										
5	3CC5	CSS & Java Script and Statistical Techniques using Excel	3P5	9	100	-	100	40	100	4
		Total		29	420	80	500	200	500	20

Notes:

i. Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.
ii. TH = Theory, PR = Practical, IA = Internal Assessment.
iii. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.
iv. The practical shall be treated as a separate passing head.

v. Record should be prepared for Practical. Both Components should be included in Practical Record.

vi. The candidate has to pass theory papers and Practical Paper separately.

vii. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

viii. Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits

ix. Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

x. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.

BCCA – Semester – IV

Sr. No.	Course Type	Course/Subject Name	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
				Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	4CC1	Business Economics	4T1	5	80	20	100	40	100	4
2	4GE2	Business Law & Cyber Security OR Research Methodology	4T2	5	80	20	100	40	100	4
3	4DSE3	Cloud Computing OR AI & ML OR MIS	4T3	5	80	20	100	40	100	4
4	4SE4	PHP & MySQL	4T4	5	80	20	100	40	100	4
Practical										
5	4CC5	PHP & My SQL	4P5	9	100	-	100	40	100	4
		Total		29	420	80	500	200	500	20

Notes:

i. Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.

ii. TH = Theory, PR = Practical, IA = Internal Assessment.

iii. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.

iv. The practical shall be treated as a separate passing head.

v. Record should be prepared for Practical. Both Components should be included in Practical Record.

vi. The candidate has to pass theory papers and Practical Paper separately.

vii. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

viii. Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits

ix. Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

x. Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.

BCCA – Semester – V

Sr. No.	Course Type	Course/Subject Name	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
				Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	5CC1	Python	5T1	5	80	20	100	40	100	4
2	5AE2	Internet of Things	5T2	5	80	20	100	40	100	4
3	5DSE3	Big Data OR Block chain Technology OR Software Project Management	5T3	5	80	20	100	40	100	4
4	5CC4	Internship	5T4	5	00	00	100	40	100	4
Practical										
5	5CC5	Practical of Python & Data Visualization	5P5	9	100	-	100	40	100	4
		Total		29	340	60	500	200	500	20

Notes:

i.   Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.

ii.   TH = Theory, PR = Practical, IA = Internal Assessment.

iii.   Minimum passing marks shall be 40 including internal assessment & University theory papers put together.

iv.   The practical shall be treated as a separate passing head.

v.   Record should be prepared for Practical. Both Components should be included in Practical Record.

vi.   The candidate has to pass theory papers and Practical Paper separately.

vii.   One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

viii.   Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits

ix.   Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

x.   Each semester will consist of 15 – 18 weeks of Academic Work equivalent to 90 actual teaching days.

BCCA – Semester – VI

Sr. No.	Course Type	Course/Subject Name	Course Code	Teaching Scheme	Examination Scheme				Total Marks	Credits
				Total Periods per Week	Max. Marks (TH)	Max. Marks (IM)	Total Marks	Min. Passing Marks		
1	6SE 1	Web Technology and Multimedia	6T1	5	80	20	100	40	100	4

2	6SE 2	Entrepreneur-ship Skill Development	6T2	5	80	20	100	40	100	4
3	6GE 3	Digital Marketing OR Company law & Secretarial practices	6T3	5	80	20	100	40	100	4
4	6CC4	Project	6P4	10	00	00	200	80	200	8
				25	240	60	500	200	500	20

Notes:

i. Duration of one Theory period is 48 minutes and Practical period is 48 x 2 = 96 minutes.

ii. TH = Theory, PR = Practical, IA = Internal Assessment.

iii. Minimum passing marks shall be 40 including internal assessment & University theory papers put together.

iv. The practical shall be treated as a separate passing head.

v. Record should be prepared for Practical. Both Components should be included in Practical Record.

vi. The candidate has to pass theory papers and Practical Paper separately.

vii. One credit is equivalent to one hour of Teaching or two hours of Practical Work per week.

viii. Viz. Theory - 48 Minutes * 5 = 240 Minutes = 4 Hours i.e. 4 Credits

ix. Practical - 48 Minutes * 10 = 480 Minutes = 8 Hours i.e. 4 Credits.

Course Composition Matrix:

	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Total Courses
CC	3	3	2	2	3	2	15
AE	1	1	2	0	1	0	5
SE	0	1	0	1	0	2	4
DSE	0	0	0	1	1	0	2
GE	1	0	1	1	0	1	4
Total Credits per semester	20	20	20	20	20	20	
Total Credits	120					30	

List of Core Courses, Ability Enhancement Courses, Skill Enhancement Courses, Discipline Specific Elective and Generic Electives

A) List of Core Courses*

Sr. No.	Compulsory Core Courses (CC) in each semester	Name of course
1	Compulsory Core Courses (Sem I)	MS Office (IT)
2	Compulsory Core Courses (Sem I)	Fundamentals of Computers
3	Compulsory Core Courses (Sem I)	Practical of Tally I & MS Office (IT)
4	Compulsory Core Courses (Sem II)	PBM
5	Compulsory Core Courses (Sem II)	DBMS
6	Compulsory Core Courses (Sem II)	Practical Tally II
7	Compulsory Core Courses (Sem III)	Business Studies

8	Compulsory Core Courses (Sem III)	Practical of CSS & Java Script and Statistical Techniques using Excel
9	Compulsory Core Courses (Sem IV)	Business Economics
10	Compulsory Core Courses (Sem IV)	Practical (PHP & My SQL)
11	Compulsory Core Courses (Sem V)	Python
12	Compulsory Core Courses (Sem V)	Internship of 120 Hrs.
13	Compulsory Core Courses (Sem V)	Practical of Python Data Visualization
14 &15	Compulsory Core Courses (Sem VI)	Project

B) List of Ability Enhancement Courses*

Sr. No.	Ability Enhancement (AE) course in each semester	Name of AE course
1	AE Ability Enhancement Courses (Sem I)	English and Business Communication – I
2	AE Ability Enhancement Courses (Sem II)	English and Business Communication – II
3	AE Ability Enhancement Courses (Sem III)	Environment Studies and Community Engagement
4		CSS & Java Script
5	AE Ability Enhancement Courses (Sem V)	Internet of Things

C) List of Skill Enhancement Courses*

Sr. No.	Skill Enhancement (SE) course in each semester	Name of SE course
1	Skill Enhancement Courses Sem II	E Commerce & Web Designing
2	Skill Enhancement Courses Sem IV	PHP & My SQL
3	Skill Enhancement Courses Sem VI	Entrepreneurship Skill Development
4	Skill Enhancement Courses Sem VI	Web Technology & Multimedia

D) List of DSE [Discipline Specific Electives]*

Sr. No.	Discipline Specific Elective (DSE) course in each semester	Name of DSE course
1	Discipline specific Elective Sem IV	Cloud computing OR AI & ML OR MIS
2	Discipline specific Elective Sem V	Big Data OR Block Chain Technology OR Software Project Management

E) List of Generic Elective Courses*

Sr. No.	Generic course in each semester	Name of generic course
1	Generic Elective Courses Semester I	Professional Ethics and Human Values OR Personal Wellbeing
2	Generic Elective Courses Semester III	Ethical Hacking

		OR
		Computer Network
		OR
		Content Writing & Analysis
3	Generic Elective Courses Semester IV	Business Law & Cyber Security
		OR
		Research Methodology
4	Generic Elective Courses Semester VI	Digital Marketing
		OR
		Company law & secretarial Practices

*Detailed curriculum contents of courses in 1st and 2nd Semester are mentioned in Appendix A.

If the student wishes to opt for any course, other than offered by the University, He / she can register for any other equivalent credit ODL (Open and Distance Learning) courses and submit the passing certificate.

3. **Assessment**

- The final total assessment of the candidates is made in terms of an internal assessment (Sessional) and an external assessment for each course/subject taken together.
- For each paper (other than Practical, Internship and Project), 20 marks will be internal assessment and 80 marks for semester end examination (external assessment) to be conducted at college level (Odd semesters examinations) and RTM Nagpur University level (Even semester examinations)

Internal Assessment

1a	Attendance of the student during a particular semester	05 marks
1b	An assignment based on curriculum to be assessed by the teacher concerned	05 marks
1c	Subject wise class test/learning activities conducted by the teacher concerned	10 marks
1	Internal assessment Total marks	20
2	Semester wise End Examination marks	80
	Total Marks Per Course	**100**

- There shall be no separate / extra allotment of workload to the concerned teacher. He/ She shall conduct the internal assessment activity during the regular teaching days / periods as a part of regular teaching activity.
- The internal marks will be communicated to the University at the end of each semester, but before the semester end examinations / as instructed by university. These marks will be considered for the declaration of the results.
- The record of internal marks, evaluation & result should be maintained for a period of one year by respective institute/college for verification by competent authority.
- The maximum and minimum marks which each subject carries in BCCA Semester - I, Semester - II, Semester – III, Semester – IV, Semester - V & Semester - VI Examination are as indicated in Paragraph 11. A, B, C, D, E & F respectively.

Internship/ Field Survey/ Research Projects and its evaluation
At the end of fourth semester, all students will have to undergo internship/ Field Survey/ Research Projects of 6-10weeks (Minimum 120 hours) with an industrial, business, service or social organization by taking a project study. The condition of successfully completing the program shall not be deemed to have been satisfied unless a student undergoes summer training under the supervision of the department in organizations as approved by the Director/ Principal/ Head / Faculty from time to time. Alternatively Director/ Principal/ Head / Faculty of the Department/ College/ Institute may allocate the sector/ industry/ company specific project to the individual student. Each student will be required to

submit a project report to the Department/ College/ Institute for the work undertaken during this period within three weeks of commencement of the third semester for the purpose of evaluation in the third semester. The evaluation will be of 100 marks. The evaluation will be internal at college level. The detailed parameters for evaluation of Internship/ Field Survey/ Research projects will be provided by the colleges at the time of its assessment and evaluation.

Project and Evaluation of Project

Project Work shall carry 200 marks

Evaluation Pattern

Evaluation Type	Max. Marks
Project Report and Documentation Evaluation by External Examiner appointed by the University	100
Presentation and Open Defence Seminar (External Examiner)	50
Presentation and Open Defence Seminar (Internal Examiner)	50
Total	**200**

i. For Project work, a group of **Maximum 3 students can be formed**. The Guide/Supervisor has to be allotted by the Institute. The Guide/Supervisor shall act as an internal examiner for project Examination.

ii. The guide or the supervisor shall be appointed by the institute and should be full time approved faculty to BCCA/ MCM Programme or PhD supervisor in Business Management.

iii. **The External examiner shall be appointed from the list of full-time approved teaching faculty of the BCCA/MCM program by the University.**

iv. One copy of Project work (Printed or Typewritten) shall be submitted to the College/Department, at least **One Month** prior to the date of commencement of Semester-VI Examination for evaluation purpose. The College/Department shall retain the copy of Project Work and the list of 'Project Work Titles' shall be submitted to the University.

v. A Candidate shall submit with his/her project work, a certificate from the Supervisor to the effect-
    a. That the candidate has satisfactorily completed the Project work for not less than one session and
    b. That the Project work is the result of the candidates own work and is of sufficiently high standard to warrant its presentation for examination.

vi. Candidate shall submit his declaration that the Project is the result of his own research work and the same has not been previously submitted to any examination of this University or any other University. The Project shall be liable to be rejected and /or cancelled if found otherwise.

vii. The Project work shall be evaluated through seminar and open defence and Viva-voce at the College/ Department by internal and external examiners appointed by university before Semester VI examination.

viii. A student appearing for BCCA Semester VI Examination will have to pay additional fees as prescribed by the University from time to time.

4. Standard of Passing

The scope of the subject, percentage of passing in Theory and Project and Internal Assessment will be governed as per following rules:

(i) In order to pass the Bachelor of Business Administration (B.C.C.A.) 1st, 2nd, 3rd, 4th, 5th and 6th Semester Examinations, an examinee shall obtain not less than 40 % marks in each paper, that is to say combined in the written Examination conducted by the University and in internal assessment put together.

(ii) An examinee who is unsuccessful at the examination shall be eligible for admission to the subsequent examinations on payment of a fresh fee prescribed for the examination together with the conditions of the ordinance in force from time to time.

5. **Credit and Grade Point System:**

A) **Conversion of Marks to Grades and Calculations of SGPA (Grade Point Average) and CGPA (Cumulative Grade Point Average):** In the Credit and Grade Point System, the assessment of individual Courses in the concerned examinations will be on the basis of marks only, but the marks shall later be converted into Grades by some mechanism wherein the overall performance of the Learners can be reflected after considering the Credit Points for any given course. However, the overall evaluation shall be designated in terms of Grade. There are some abbreviations used here that need understanding of each and every parameter involved in grade computation and the evaluation mechanism. The abbreviations and formulae used are as follows: -

Abbreviations and Formulae Used

G: Grade

GP: Grade Points

C: Credits

CP: Credit Points

CG: Credits X Grades (Product of credits & Grades]

SGPA = ΣCG: Sum of Product of Credits & Grades points / ΣC: Sum of Credits points

SGPA: Semester Grade Point Average shall be calculated for individual semesters. (It is also designated as GPA)

CGPA: Cumulative Grade Point Average shall be calculated for the entire Programme by considering all the semesters taken together.

CGPA to Percentage (%) conversion formula: Percentage (%) = (CGPA) * 10

After calculating the SGPA for an individual semester and the CGPA for entire program, the value can be matched with the grade in the Grade Point table as per the ten (10) Points Grading System and expressed as a single designated GRADE such as O, A, B, C, D, P and F

Sr. No.	Letter Grade	Grade Points	Mark Range	Performance
1	O	10	Above 90 upto 100	Outstanding
2	A+	9	Above 80 upto 90	Excellent
3	A	8	Above 70 upto 80	Very Good
4	B+	7	Above 60 upto 70	Good
5	B	6	Above 50 upto 60	Above Average
6	C	5	Above 45 upto 50	Average
7	P	4	40 to 45	Pass
8	F	0	Below 40	Fail
9	AB	0	Absent	Fail

A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.

B) Division at the BCCA semester VI examination shall be declared on the basis of the aggregate marks at the BCCA semester I, semester II, semester III, semester IV, semester V and semester VI examination taken together and the CGPA will be calculated and notified.

C) The successful examinees at the BCCA semester VI examination shall be awarded division based on CGPA.

6. **Promotion to Higher Semester (A.T.K.T.):**

The unsuccessful candidate of any semester examination shall be ALLOWED TO KEEP THE TERM [ATKT] in accordance with the following table: (Theory and Internal assessment of that theory subject shall be jointly considered as single passing head).

Admission to academic year	Candidate should have passed All courses of the following examination	Candidate should have filled the examination form and appeared for the following examinations	Candidate should have passed in Minimum 50% courses of the following examination
1st Semester	H.S.S.C/equivalent	------	------
2nd Semester	------	1st Semester	------
3rd Semester	------	2nd Semester	50% courses of 1st and 2nd Semesters taken together
4th Semester	------	3rd Semester	As Above
5th Semester	1st and 2nd Semesters	4th Semester	50% courses of 3rd and 4th Semesters taken together
6th Semester*	As Above	5th Semester	As Above

Note: (*) A candidate admitted to Final Semester can appear for Final Semester examination however the result of the Final Semester examination will be withheld unless the candidate clears all the lower examinations of the **BCCA Course.**

7. **Guideline of Project Work**

Towards the end of the second year of study, a student will be examined in the course —Project Work

Project Work may be done individually or in groups (Maximum 3 students) in case of bigger projects. However, if project is done in groups, each student must be given a responsibility for a distinct module and care should be taken to monitor the progress of individual student.

The Project Work should be done using the tools covered in B.Com. [Computer Application] (BCCA).

The Project Work should be of such a nature that it could prove useful or be relevant from the commercial / management domain.

The project work will carry 200 marks.

Project Work can be carried out in the Institute or outside with prior permission of the Institute.

The external viva-voice examination for Project Work would be held as per the Examination Time Table of the Third year of study, by a panel of one external to be appointed by the University and one Internal Examiner (Project Guide/Supervisor).

Types of Projects

As majority of the students are expected to work out a project in some industry / research and development laboratories / educational institutions / software export companies, it is suggested that the project is to be chosen which should have some direct relevance in day-today activities of the candidates in his/her

institution. The Applications Areas of project – Financial / Marketing / Database Management System / Relational Database Management System / E-Commerce / Internet / Manufacturing / web Designing / Scientific / ERP etc using CSS Javascript, Advanced Xcel and Dashboard, PHP MySQL, Python, Data Visualisation, Java, Android Programing, Wordpress and DotNet Technologies.

*Project based on any application development platform/programming language which a student might have learnt in ODL is also allowed.

Project Proposal (Synopsis)

The project proposal should be prepared in consultation with the guide. The guide or the supervisor shall be appointed by the institute and should be full time approved faculty to BCCA/ MCM Programme or PhD supervisor in Business Management. The project proposal should clearly state the objectives and environment of the proposed project to be undertaken. It should have full details in the following form:

Format of Synopsis for Desktop Application

I.	Title of the Project.
II.	Objectives of the Project.
III.	Project Category (DBMS / RDBMS / OOPS etc.).
IV.	Tools / Platform and Languages to be used
V.	Complete Structure of the System
VI.	Numbers of Modules and its Description
VII.	Modular Chart / System Chart
VIII.	Data Structures or Tables
IX.	Process Logic of each Module
X.	Types of Report Generation
XI.	References

Format of Synopsis for Web Application

I.	Title of the Project.
II.	Objectives of the Project.
III.	Project Category (DBMS / RDBMS / OOPS etc.).
IV.	Tools / Platform and Languages to be used.
V.	Complete Structure of the System:

   a. Number of pages and links their short description.
   b. Use / Information of Pages.
   c. Feedback Form (if any).

VI.   References.

Note: Synopsis should not be more than 3-4 pages.

Project Report Formulation
Front Page
College Certificate Page
Declaration Page
Acknowledgment Page
Project Profile
Index or Content Page.
a) *Contents ————————————.

Appendices
a) List Figures, Tables& Charts.

b) Approved copy of Synopsis.

Glossary
* Contents.

a) Introduction.

b) Objectives.

c) Preliminary System Analysis.

- Preliminary Investigation
- Present System in Use
- Flaws in Present System
- Need of New System
- Feasibility Study
- Project Category

d) Software Engineering Paradigm Applied

- Modules
- System / Modular Chart

e) Software & Hardware Requirement Specification.

f) Detailed System Analysis.

- Data Flow Diagram
- Numbers of Modules and Process Logic
- Data Structures and Tables
- Entity-Relationship Diagram

g) System Design

- Form Design
- Source Code
- Input screen & Output Screen

h) Testing &Validation Checks

i) System Security Measures
j) Implementation, Evaluation and Maintenance
k) Future Scope of the project.
l) Suggestion & Conclusion
m) Bibliography& References

Note: -

I. A Student is expected to complete the Assignments based on Syllabus of Practical subjects and submit the same in the form of a files (assignment Record) at the end of Academic Session for the evaluation purpose.

II. A student should submit internal assessment of each theory paper prescribed by the subject teacher.

III. A Student is expected to deliver a seminar on any course curricular subject / latest trends in IT relevant subject per semester for internal assessment

8. **Provision for Multiple Exit and Multiple Entry**

The BCCA program offered under this direction provides an opportunity to students for multiple exit from the program as per following conditions:

a. A student can exit the program after successful completion of 1st and 2nd Semester courses and obtaining 40 credits. Such a student is eligible to be awarded 'Certificate in Commercial Computer Applications' by the University provided, the student has successfully completed at least one 'Skill Based Course'.

b. A student can exit the program after successful completion of 1st, 2nd, 3rd and 4th Semester courses and obtaining 80 credits. Such a student is eligible to be awarded 'Diploma in Commercial Computer Applications' by the University provided, the student has successfully completed at least one 'Skill Based Course'.

c. A student who has completed the 3 years program and earned 120 credits will be considered eligible for award of 'Bachelor of Business Administration' degree by the University.

d. A student who wishes to exit the program before completion of 3 years is required to apply to the university through Principal.

e. A student who opted for exit from the program before completion of 3 years (a &b) above shall be eligible for admission to next year of the program in any subsequent academic session. However, if at the time of admission, if this scheme of examination is not in force, the student will have to complete the program according to the provisions made under the direction prevailing at the time of such admission.

9. Provision for Transfer of Credits

The BCCA program offered under this direction provides enhanced academic flexibility to students in terms of selecting the courses they want to learn. A student can opt for any course from any statutory/recognized University or any recognized online learning platform such as SWAYAM/NPTEL/EdX/Coursera in lieu of a course (except Core Course and Discipline Specific Electives) mentioned in this scheme of examination. The mechanism for transfer of credits earned through these courses to be adhered is mentioned here:

1. Any Core Course or Discipline Specific Elective mentioned in this scheme of examination cannot be opted out by a student.

2. A student can opt out any course other than Core Course/Discipline Specific Elective and earn equal number of credits by completing any ODL or Online course/s from any statutory/recognized University or any recognized online learning platform such as SWAYAM/NPTEL/EdX/Coursera.

3. If a student is willing to opt out any such course, he/she will have to mention this while submitting the examination form to the University for respective semester.

4. A certificate of completion of such an ODL/Online course shall be submitted by the student to the University through college before end term evaluation.

5. Such a certificate shall mandatorily have the number of credits, duration of the course and grades/marks obtained by the student and shall preferably have a QR code for verification.

6. The college shall submit the grades and marks obtained by the student to the University along with Internal Assessment marks for the concerned examination.

7. If a student has opted for an ODL/Online course in a particular semester and failed to submit the certificate within prescribed time, the student will be marked for 'Absent' for a particular course in that examination. Such a student will be required to fill in the examination form in the consecutive attempt and submit the passing certificate in order to get his/her corrected result.

10. Eligibility for award of Degree:

In order to become eligible for award of 'Bachelor of Commerce (Computer Application)' degree, a student has to fulfil the following conditions:

a. A student has to earn minimum 120 credits in not less than 3 years.

b. A student has to successfully complete (pass) all Core Courses and Discipline Specific Electives mentioned in this direction.

NOTE: This scheme of teaching and examination for Bachelor of Commerce (Computer Application) program shall be effective from the academic session 2022-23 and a comprehensive direction for other regulations in this connection shall be soon issued by the University.

Bachelor of Commerce (Computer Application)

(OB & CBCS) Examination

Academic Year 2022-23 onwards

Appendix 'A'

Detailed Syllabus for 1st and 2nd Semesters

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	Course Outcomes
CO1	Student will be able to create and manage word documents with required formatting. Students will be able to compose word documents and operate relevant features and tools of MS Words
CO2	Student will be able to perform operations like creating, storing, and formatting data using different Excel formatting tools and features.
CO3	Students will able to perform calculations using functions, and present the data visually using charts and graphs.
CO4	Student will be able to create and design professional presentation using different features & tools of PowerPoint.
CO5	Students will be able to prepare and appraise professional business data, document and presentation.

Unit I : Microsoft Word

Introduction ; Getting familiar with the interface of Word; Backstage View(File); Creating, Saving, Opening, Closing of document; Editing text Documents; Inserting & Deleting text, Toolbars; Inserting Tables, Pictures, Shapes, Icons, Smart Art, Drop Cap, Date and time, Object, Word Art, Special Symbols, Hyperlinks, Header and footer, Page Numbering, Charts; Use columns and breaks; Using step-by-step mail merge wizard; Review documents using - Spelling and Grammar check, word count; Different views of word document, Change the view of document ; Using format painter ;Creating styles; Using Page Setup Settings , Printing of the document; Sharing the document ;Exporting of word document

Unit II: Microsoft Excel – I

Introduction ; Getting familiar with the interface of Excel; Backstage View(File); Excel Toolbars; References-Absolute and Relative; Working with worksheet/workbook; Data Entry in Excel; Formatting of data –Formatting Cell, Rows, Columns , Sheet ; Different formatting - Number Formatting ,Text formatting ,Date Formatting ,Alignment Settings, Font Formatting, Border ,Shading , Format as Table; Changing Row /Height ,Using Hide /unhide options; Moving or copying sheet; Renaming Sheet; Flash Fill ;Using find and select options-Go to, Go To Special ; Sharing the excel workbook; Exporting of worksheet

Unit III: Microsoft Excel – II

Outline -Group, Ungroup, Subtotal; Conditional Formatting; Performing Calculations with Functions and formulas, Function Library-Date and Time Functions, Mathematical Functions, Logical Functions, Text Functions, Statistical Functions, hlookup, vlookup; Converting data from text to columns, removing duplicates; Creating Effective Tables & Charts; Data analysis using Sort ,Filter and data validation feature in excel; Pivot table & Pivot charts; Page Setting & Printing

Unit IV: Microsoft PowerPoint

Introduction ; Getting familiar with the interface of PowerPoint; Backstage View (File); Slide Layout; Formatting in PowerPoint; Different Toolbars; Inserting Clip Art, Picture, Slide, Organization Chart, Smart art ,Table, Hyperlink; Presentation Views ; Master Slide; Working With Movies and Sounds; Using different design themes; Changing Slide Size and background ; Applying Animation and Slide Transition; Slideshow ; recording slide show; Page Setting & printing; Sharing the presentation ;Exporting the presentation to Video

Text Books

1. MS Office 2016 Quintessential Course –Vishnu P Singh, Asian Computer Books
2. Microsoft Office 2016 Step by Step, Joan Lambert, Curtis Frye, Microsoft Press
3. Information Technology, Vikrant Malviya, Himalaya Publishing House

Reference Books

1. Introduction to Information Technology, Renu Vashishth & Dr. Neeru Mudra, Himalaya Publishing House
2. Computer course –Prof. Satish Jain, Shashi Singh, M. Geetha, BPB Publication
3. Office 16 in easy steps, Michael Price Mike Mc Grath, BPB Publications
4. Office 2016 for beginners- Steven Weikler, Alpha Lifestyle Productions
5. Microsoft office 2016 Word, Excel, One Note Book - Vol 1-Lalit Mali, Notion Press

Course Code: 1CC2

MS OFFICE PRACTICAL LIST

1. Microsoft Word 2016 is one of the most reliable, powerful, and feature rich word processors around, and while it's since been replaced by Word 2019, it still offers most of the functionality modern professionals need. Word has always worked best as part of the largest Microsoft Office ecosystem, but Word 2016 brings this to a whole new level. Integration with the various components of the Office suite are tighter than everything before, and a major shift towards cloud based sharing has changed the way that professionals can use Word in some pretty major ways. Through the use of OneDrive, users can quickly share their Word documents with anyone they've given the proper privileges. But that's not the only way you can share files. Through integration with Outlook, you can attach a document via email and allow your recipients to go in and edit it at their discretion. An additional commenting feature allows you to mark up documents without changing their basic content. In short, Microsoft has paired Word with the sorts of functionality available through their Google cloud suite. Combine that with the polished and refined features at the heart of Word, and you have one of the finest word processing applications around.

   Perform the following given operations:

   a. Type the above given paragraph as it is using "Calibri font", font size-12
   b. Divide 4 paragraph for the above text and justify alignment.
   c. Change font size on 18 points for the first paragraph.
   d. Make 1.5 line spacing for the second paragraph.
   e. Make Drop Cap the first letter of the third paragraph.
   f. Apply header and footer in the document. In header section -Type the chapter name as MS -word 2016 and in footer section →insert page number.

2. Prepare a table in MS-Word

Emp_id	First Name	Last Name	Department	Location
101	Ram	Sharma	Finance	Bangalore
102	Karan	Kapoor	Marketing	Hyderabad
104	Kiran	Varma	IT	Pune
105	Sarvashrestha	Gupta	HR	Raipur

   a. Apply Grid table style to the above given table.
   b. Create landscape orientation and select A4 paper size.
   c. Insert 'State' column after the 'Location' column.
   d. Insert one row below 2nd Row.
   e. Apply font "Cambria" and font size -13 on table.
   f. Insert watermark "Employee Details".
   g. Select the first row of the table and make it centrally aligned.
   h. Apply light grey colour shading to your table
   i. Right align the first column data.

3. Create 5 pages word document on "Generations of computers". Apply Styles and create a hyperlink on word document.

   a. "Heading 1" style for all headings on First Page.
      Modify the "Heading 1" Style containing red colour and Arial font

b. Paragraph with Normal styles having "Arial Narrow font", 11 size and 1.15 line spacing

c. "Heading 2" style for all headings on Second Page.

d. Create a "Heading 3" Style for third page having font colour-green ,font size-16

e. Create a hyperlink -When student click on "First generation of computers Heading" then a new word document containing the details of "First Generation" should get opened.

4. Prepare a list showing bullets and numbering feature. The list should be displayed as follows:

Example of Bulleted List

- ❖ Information Technology
    - ✓ Web technologies
    - ✓ Tally
    - ✓ MS-office 2016
        - • Word
        - • Excel
        - • Powerpoint

Example of Numbered List

1. Website Development
    1.1 HTML
    1.2 CSS
        1.2.1 Internal Style Sheet
        1.2.2 External Style Sheet
    1.3 JAVASCRIPT

5. Using Mail merge, write a letter to 5 candidates for their final interview on 20th Sep 2022 at Teztech Ltd., Dharampeth, Nagpur at 11:00 am along with necessary documents, resume and 2 Passport size photographs.

6. Prepare "Table of Content" in word document as given below:

Table of Contents	
1. Introduction to Computers	2
1.1. Introduction	2
1.2. Features	2
1.3. History	3
1.4. Generations of Computers	5
1.4.1. First Generation	5
1.4.2. Second Generation	7
1.4.3. Third Generation	9
1.4.4. Fourth Generation	10
1.4.5. Fifth Generation	12
1.5 Types of Computers	14
2. Software	16
2.1 System Software	16
2.2 Application Software	18
2.2.1 MS-office	18

7. Draft a resume covering the following sections in chronological order:

a. Sections in resume : Basic Details: Name ,E-mail,Contact details ;Career Objective ;Work Experience ;Education; Certifications;Extra Curricular Activities & Achievements;Awards and Honors;Key Skills;Interests;Languages known.
b. Keep font size between 10 and 12 points.
c. Set the margins for one inch on all four sides.
d. Align your content to the left.
e. Make section headings larger than the rest of the text; type them in bold.

8. Prepare billing report for M/s. Total Synergy Consultancy Private Limited (TSCPL) in MS Excel

Consultant	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Yearly Total
R.Bhatnagar	Rs 9,752.00	Rs 10,129.00	Rs 8,212.00	Rs 7,032.00	
M.Lath	Rs 5,755.00	Rs 6,477.00	Rs 5,447.00	Rs 4,584.00	
P.Sharma	Rs 6,769.00	Rs 6,758.00	Rs 6,378.00	Rs 1,644.00	
K.Pandey	Rs 3,708.00	Rs 5,795.00	Rs 6,188.00	Rs 1,636.00	
M.Swamy	Rs 5,009.00	Rs 2,009.00	Rs 7,643.00	Rs 7,323.00	
Total					

a. Calculate Yearly total vertically and Total horizontally using SUM function.
b. Prepare columnar chart for Consultant and Qtr3 having chart title --Billing Report.
c. Highlight the cell which has highest total.
d. Use fill series option to fill the remaining cells for calculating total.

9. Prepare following table in excel for "DOTCOM SOLUTIONS LIMITED"

INVENTORY DATABASE

INV.CODE	DESC	QTY	RATE	PRICE
P1002	TV-COLOUR 21"	35	11000	
P1001	TV-COLOUR 29"	15	18000	
P1003	DVD	20	12000	
P1007	STERIO	53	6000	
P1008	WASHING MACHINE	21	18000	
P1005	REFRIGERATOR	40	8000	
P0004	DISH WASHER	5	20000	
P1009	MIXER	35	3000	
P1010	GRINDER	20	5000	
P1020	MIXER	30	3000	

a. Calculate Price of the above given data.
b. Sort the records in the table using ascending order of Invoice code.
c. Filter the data having quantity greater than 20 and rate less than 20000.
d. Highlight duplicate values in column DESC and RATE.

10. Using conditional formatting on the below given table, perform the following:

INV.CODE	DESC	QTY	RATE	PRICE

P1002	TV-COLOUR 21"	35	11000	
P1001	TV-COLOUR 29"	15	28000	
P1003	DVD	20	12000	
P1007	STERIO	53	6000	
P1008	WASHING MACHINE	21	18000	
P1005	REFRIGERATOR	40	8000	
P0004	DISH WASHER	5	20000	
P1009	MIXER	35	3000	
P1010	GRINDER	20	5000	

a. Highlight those INV.CODE values where INV.CODE is greater than P1005.
b. Highlight those quantity values where Qty is between 30 and 50.
c. Highlight (Single Underline) the rate values where rate is less than 10000 and (Bold) greater than or equal to 20000.
d. Highlight (Strikethrough) the price value where price is equal to 3, 20,000 and (Bold-Italic) not equal to 1, 00,000.

11. From the following given data ,Calculate Total and Percentage .Using if function in excel calculate the Grade of student using the given grade criteria. Calculate the max,min and average marks of all three subjects individually.Count the number of students who got grade as distinction,First,Second,third,fail.

Roll No.	Name of Student	Sub1	Sub 2	Sub 3	Total	Percentage	Grade	Result
BA01	Ram Sharma							
BA02	Karan Kapoor							
BA03	Sheela Varma							
BA04	Kashish Sahani							
	Minimum							
	Maximum							
	Average							

The criteria to calculate grade:

Percentage >75	Distinction
Percentage >=60	First
Percentage>=50	Second
Percentage>=40	Third
Percentage below 40	Fail

12. Prepare the following given table in Ms-Excel.Calcuate Gross Pay,PF,Net Pay using formulas and functions.Also apply the formatting as per given specifications:

Name	Basic	DA	HRA	Gross Pay	PF	Net Pay
Ram Gupta	10000	2000	2780			
Shyam Sharma	20000	1050	1500			

Sita Prajapati	35000	2100	1900			
Priya Sharma	25000	2500	2100			
Hariprasad Sahu	20000	1000	1500			

1. Perform the following calculations:
   a. Gross Pay=Basic Pay +DA+HRA
   b. PF=12% of DA
   c. Net Pay=Gross Pay- PF

2. Apply the following formatting:
   a. Set column width=10
   b. Set row height=15
   c. Text Alignment:
   d. Horizontal : Center & Vertical : Center
3. Count the number of employees whose Gross Pay is greater than 25000.
4. Sum the PF of employees whose basic salary is 20,000.

13. Demonstrate the data in excel sheet using Advance Filter.
    Apply advance filter option showing the region -North and Sales >5000

Date	Sales Representative	Region	Sales
03-12-2018	Ram Sharma	North	5086
04-12-2019	Shyam Varma	East	2000
05-11-2019	Sita DakshPrajapati	West	3000
08-12-2019	Gita Kewalramani	North	8900
09-11-2019	Bharat Kulkarni	South	3200
15-11-2020	Krishna Desai	East	2100
16-11-2020	Arjun Kapoor	North	1200
18-12-2021	Shankar Wadhwani	West	1600
20-12-2021	Narayan Das	South	1750

14. Perform the text functions -Upper( ),Lower( )
    Also apply flash fill option to the Full Name column
    Demo table:

First Name	Last Name	Full Name (Use Flash Fill)	Upper (First Name)
Ram	Sharma	Ram Sharma	RAM
Prachi	Varma		
Priya	Desai		

15. Find out the Price of Mobile using vlookup( ) function on the following given data:

Products	Product Code	Quantity	Price
Washing Machine	1000-125-W123	20	44,000

AC	1000-126-A125	25	80,000
Mobile	1001-128-M140	30	15,000

16. Find out the Price of AC using hlookup( ) function on the following given data:

Products	Washing Machine	AC	Mobile
Product Code	1000-125-W123	1000-126-A125	1001-128-M140
Quantity	20	25	30
Price	44,000	80,000	15,000

17. Prepare Pivot table and Pivot chart on the basis of following given data:

Name	Position	Department	Salary
Kashish	Accountant	Accounting	55,000
Karan	Manager	HR	89,000
Neetu	Editor	Press	25,000
Sheela	Account Manager	Accounting	85,000
Pushpa	Accounting Clerk	Accounting	25,000
Raja	VP Marketing	Marketing	35,000
Mandira	Head	Housekeeping	20,000

18. Make a presentation within 5 slides about Student's SWOT analysis .Your slide presentation should fulfill the following details:

Title slide should contain Topic Name,Your name ,College Name,Course Name

Slide 1 contents –Strength
Slide 2 contents -Weakness
Slide 3 contents –Opportunities
Slide 4 contents –Threats

Apply below given formatting options using master slide:
a. Background of each slide should be your college logo.
b. The font size of title slide -32 ,font type-Cambria.
c. Insert footer in the presentation showingyour name.

19. Create a presentation with 3 slides describing about the student studying in a college.
   a. The first slide will contain the title and subtitle covering the details of your name and your career objective.
   b. The second slide should contain a title – Educational Qualifications.Second slide should have 2 columnar layout; column 1 contains student's image and column 2 contains student's educational qualifications.
   c. The last slide should contain co-curricluar activities and hobbies.Slide design applied on entire presentation should be same.

20. Prepare 8 slides covering the details of different UPI apps ,Payment Wallets .
The slide containg UPI apps classification shouldn be created by using organization chart.

Slides should contain the following features:

a. Insert one image on each slide
b. Apply font formatting : Font type-Times New Roman ,Font –Size:24,Alignment –
   Justified
c. Title of each slide should be centrally aligned
d. Apply Animation and Transition
e. Insert Header and footer
f. Insert date and slide number
g. Apply any light colour slide design

Bachelor of Commerce (Computer Application)
BCCA (CBCS) - Sem I
Course Type: Core Course
Course Name: Fundamentals of Computers
Course Code- 113

Course Outcomes	
CO1	Student will be able to understand and use information of various components of Computer
CO2	Student will be able to use the knowledge of peripheral devices for effective working. Student will be able to perform calculations based on various number systems
CO3	The student will be able to analyse and differentiate various modes of data transmission and will also be able to decide the choice of communication channel for given situation.
CO4	Student will be able to apply the knowledge of system software and application software in effective manner
CO5	Student will be able to understand and use information of various functions & features of operating system.

UNIT I
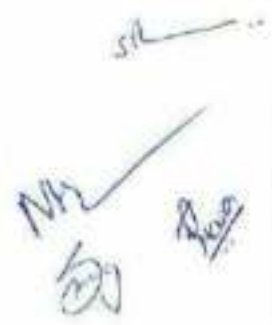
Understanding the Computer: - Introduction, Evolution, Generation, Classification and Application of computers. **Memory and Storage Systems:** Introduction, Memory representation, Random Access Memory, Read Only Memory, Storage systems, Magnetic storage systems, Optical storage systems, Magneto optical system, Solid-state storage devices.

UNIT – II

Input Devices: Introduction, Keyboard, pointing devices, Scanning devices, Optical recognition devices, Digital camera, Voice recognition system, Data acquisition sensors, Media input devices. **Output Devices:** Introduction, Display monitors, Printers, Impact printers, non-impact printers, Plotters, Voice output systems, Projectors, Terminals. **Computer Codes:** Introduction, Decimal system, Binary system, Hexadecimal system, octal system, Conversion of numbers

UNIT – III

Computer Software: Introduction, Types of computer software, System management

programs, System development programs, standard application programs. **Programming Languages:** Introduction, History of programming languages, Generations of programming languages, and Characteristics of good programming languages.

Data Communication and Networks: Introduction, Data communication using modem, Computer network, Network topologies, Network protocol and software, Application of network.

UNIT – IV

Operating Systems: Introduction, History of operating systems, Functions of operating systems, Process management, Memory management, File management, Device management, Security management, Types of operating systems, Providing user interface, Introduction to MS-DOS and Windows, Popular operating systems.

Text Book:
1. Fundamentals of Computer, CSV Murthy, Himalayan Publishing House
2. Computer Fundamentals, Pradeep K Sinha, Preeti Sinha, BPB Publications
3. Information Technology Concepts, Dr. Madhulika Jain, Satish Jain, BPB Publications

Reference Books:
1. Fundamentals of Computers, E Balagurusamy, Mc Graw Hill Education.
2. Basics of Computer Applications in Business, HemChand, H.N. Tiwari
3. Fundamental of Information Technology, Dr. Rajiv Midha, S. Brinda, Taxmann.
4. Introduction to Information Technology, Sanjay Saxsena, Vikash Publishing House Pvt.Ltd.
5. Information Technology, Dr. Sushila Madan, Taxmann.

Bachelor of Commerce (Computer Application)
BCCA (CBCS) - Semester I
Course Type: Generic Elective
Course Name: Professional Ethics & Human Values
Course Code: 1T4

Course Outcomes

CO1	Students will be able to **outline** the importance of Values in life & **explain** the concept of Co-existence of the Self and the Body
CO2	Students will be able to **discuss** the basics of values in human- human interaction
CO3	Students will be able to **critically evaluate** the different theories of Ethics
CO4	Students will be able to **highlight** the role of Code of Conduct in ethical behavior in Professional life
CO5	Students will be able to **analyze** the issues in Professional ethics

Unit I: Introduction to Value Education & Harmony in the Human Being:

Value Education, Definition, Concept, Need; Content and Process of Value Education; Self-Exploration; Harmony of the Self (I) with the Body; Understanding Needs of the Self and the Needs of the Body

Unit II: Harmony in the Family, Society and Nature:

Family as a basic unit of Human Interaction and Values in Relationships; Basics for Trust, Respect, Affection, Care, Guidance, Reverence, Glory, Gratitude and Love; Comprehensive Human Goal: The Five dimensions of Human Endeavour

Unit III: Ethics:

Values, Morals & Ethics; Normative Theories: Gandhian Approach, Friedman's Economic theory, Kant's Deontological theory, Mill & Bentham's Utilitarianism theory.

Unit IV: Professional Ethics

Introduction; Need; Importance; Principles of Ethics; Code of conduct; Advantages of Corporate code of ethics; Issues in Professional Ethics

Reference Books:

1. B L Bajpai, 2004, Indian Ethos and Modern Management, New Royal Book Co., Lucknow. Reprinted 2008
2. Business Ethics, C S V Murthy, Himalaya Publishing House
3. Corliss Lamont, Philosophy of Humanism
4. R R Gaur, R Sangal, G P Bagaria, 2009, A Foundation Course in Value Education
5. A.N. Tripathy, 2003, Human Values, New Age International Publishers
6. B P Banerjee, 2005, Foundations of Ethics and Management, Excel Books

NPTEL Course: https://onlinecourses.swayam2.ac.in/nou22_ge53

BCCA (CBCS) – Sem I
Course Type: Generic Elective
Course Name: Personal Wellbeing
Course Code: 1GE4

Course Outcomes:

CO1	The students will be able to identify importance of food and nutrition for personal health.
CO2	The students will be able to relate stress factors affecting personal health
CO3	The students will be able to demonstrate various exercises related to yoga
CO4	The students will be able to prepare financial plan for their future.
CO5	The students will be able to combine various elements of personal wellbeing in their life.

Unit 1: Introduction to Food and Nutrition: Basic terms used in Food and Nutrition. Definitions-Foods, Nutrition, Optimum nutrition, Nutritional status, Nutrients and Health. Functions of food-Physiological, psychological and social Characteristics of basic food groups and their contribution to the diet. Nutrients and their type (Macronutrient /Micronutrient) Scope of Nutrition, Balanced Diet: Definition, Concept of balanced diet, Factors affecting balanced diet, Nutrients, Recommended Dietary Allowances (RDAs) of the ICMR for the different food groups for various life stages.

Unit 2: Stress, health and well-being: Overview; Nature and physiology of stress, Mind-body connections; Stress and non-infectious diseases; Stress and infectious diseases; Stress and psychological disorder, Positive aspects of stress and trauma: Stress, trauma and posttraumatic growth; Factors influencing stress tolerance

Unit 3: Yoga and wellbeing: Yoga Meaning; History and Streams, Brief introduction to Yogic texts, Yogic concepts of Health, Yoga and Mental Health, Yogic Life Style, Meditation (Dhyana): Loosening Exercises for all postures and Yogic Kriyas (Sandhichalana); Shat Karma (Cleansing techniques) Aasana I- Suryanamaskara, Pranayama (Regulation of Breath).

Unit 4: Financial Wellbeing: Need and importance of financial planning, Determination of investment objectives, Investment options – FD, RD, NPS, Post office saving schemes, EPF, Mutual Funds, Equity investments, Understanding risk and return associated with investment options.

Reference books:

Nutritive Value of Indian Foods: Gopalan C, Rama Shastri&Balasubramanin S.C., National Institute of Nutrition, 1993

Food Science, Chemistry and Experimental Foods: Dr.M.Swaminathan, The Bangalore Printing and Publishing Co. Ltd. 1995.

Applied Nutrition: R. Rajlakshami Oxford & IBH Pub. Co.pvt Ltd,3rd edition, 1981.

Stress Management – From basic science to better practice – Sage Publication Inc (2005)

Investment analysis and portfolio management – Prasanna Chandra VI Edition – McGraw Hill Publication

Bachelor of Commerce (Computer Application)
BCCA (CBCS) - Sem I
Course Type: Core Course
Course Name: Practical of Tally – I (ERP 9)
Course Code- 1P5

	Course Outcomes
CO1	Given the details about the company student will be able to **Create** company and also able to do some alteration according to the requirement.
CO2	Given the day-wise transactions of firm, the students will be able to **prepare** ledger and group and will be able to create various vouchers, using Tally software.
CO3	Given the details about the day-wise transactions of a firm, the student will be able to **create** bill wise detail based on stock.
CO4	Given the details about transactions, students will be able to **prepare** profit & Loss A/C report and balance sheet
CO5	Given the details about cash and bank transactions for a specific period, students will be able to prepare bank reconciliation statement.

UNIT I: Introduction to Tally ERP 9, Features of Tally, Tally ERP 9 Components, Tally ERP 9 Window, Gateway of Tally, Creation, alteration and deletion of company. Features and configuration. Working with multiple companies

UNIT II: Account Info Menu, Ledger-creation deletion and alteration of ledger, Group-creation deletion and alteration of Group, Voucher-Creation of voucher, Voucher Entry, Purchase Orders, Sales order

UNIT III: Inventory Info Menu, Stock Groups, Stock Categories, Stock Items, Units of Measure, Godowns, Cost Centre, Cost Category., Stock Summery Report.

UNIT IV: Working with Balance Sheet, working with Day Book Report, working with Profit & Loss A/c Report, working with Trial Balance Report, Ratio Analysis, Bank reconciliation, Tally Audit, Backup & Restore Data in tally.

Text Books

1. Accounting with Tally: K.K. Nadhani, BPB Publication.
2. Tally Tutorial: K.K. Nadhani and A.K. Nadhani, BPB Publication.

Reference Books:

1. Tally.ERP 9 with GST in Simple Steps, DT Editorial Services, Dreamtech Press
2. Learn Tally.ERP 9, Soumya Ranjan Behera, B.K. Publications Pvt. Ltd.
3. Basics of Tally: Tally for Beginners, Vijaya Dasu
4. Tally ERP 9 GST Book A Complete Tally GST, Pushpendra Singh Jadon, Vihu Publication

Practical List : Tally - I

1. Create Creating a company M/s Rajratan private limited, Pratap Nagar, Nagpur. The following ledgers in the books of M/s Rajratan private limited

Name of ledger	Under (group)	Bill wise details set to	Opening balance
Share capital	Capital account	No	15,00,000
Purchase account	Purchase account	No	Nil
Sales accounts	Sales accounts	No	Nil
Ultra tech cement ltd	Sundry creditors	Yes	270000
Building	Fixed assets	No	1200000
Computers	Fixed assets	No	50000
Office furniture	Fixed assets	No	175000
Cash in Hand	Cash account	No	20000
Civic centre association	Sundry debtors	No	290000
Petty Cash	Cash in hand	No	50000

2. Create the following ledger with appropriate Group and put the opening balance in above created company.

Name of Ledger	Account Groups	Amount
Equity Share Capital	Capital Account	26580000
General Reserve	Reserve and Surplus	2560000
Capital Reserve	Reserve and Surplus	598500
Loan from HDFC	Secured Loan	5000000
Ranbir Ltd	Sundry Creditors	254100
Goswami Pvt Ltd	Sundry Creditors	225000
Provision for doubtful debts	Provisions	15000
Outstanding Rent	Outstanding Expenses	16500
Outstanding Telephone bill	Outstanding Expenses	35000
Outstanding A M C	Outstanding Expenses	17514
Profit and Loss Account**	Primary	675420
Land & Building	Fixed Assets	5085410
Plant & Machinery	Fixed Assets	6085011
Furniture & Fixture	Fixed Assets	458700
Computer & Peripherals	Fixed Assets	1045210

Investment in Shares	Investments	2254500
Abir Pvt Ltd Suraj Ltd	Sundry Debtors Sundry Debtors	250000 350000
Closing Stock*	Stock – in- Hand	2545800
Prepaid Insurance	Current Assets	45120
Loan to Employee	Loans and Advances (Assets)	158400
Cash**	Cash in Hand	185200
I C I C I Bank	Bank Accounts	17513683

3. Create a company Sunder furniture and Enter the following transactions and prepare a trail balance.

Started business with cash Rs. 20,000/-
Purchased goods worth Rs. 5,000/- on credit from 'X'
Sold goods worth Rs. 3,000/- to 'Y' on credit.
Opened a bank account with State Bank of India by depositing Rs. 2,000/-.
Paid salary Rs. 1,000/- in cash to Ramesh.
Received a cheque of Rs. 3,000/- from 'Y'.
Received commission from Ankit Rs. 2,000/-.
Paid Rent Rs. 500/-
Withdrew from bank Rs. 1,000/-
Issued a cheque of Rs. 4,000/- to 'X'.

4. Create a company name Krishna traders and Record the following transactions in Tally.

Robert commenced a transport business with a capital of 1,00,000
An account was opened with State Bank of India and deposited ₹ 30,000
Purchased furniture by paying cash ₹ 10,000
Goods purchased on credit from Mohaideen for ₹ 20,000
Cash sales made for ₹ 8,000
Goods purchased from Rathinam for ₹ 5,000 and money deposited in CDM
Goods sold to Rony on credit for ₹ 60,000
Money withdrawn from bank for office use ₹ 9,000
Part payment of ₹ 10,000 made to Mohaideen by cheque
Rony made part payment of ₹ 5,000 by cash

Salaries paid to staff through ECS ₹ 6,000
Wages of ₹ 3,000 paid by cash
Purchased stationery from Pandian Ltd. on credit ₹ 4,000

5. Create a company of Royal Pvt. Ltd. and Journalise the following transactions and prepare trading and profit and loss account, balance sheet using Tally.

Wages paid by cash ₹ 2,000
Rent paid by cheque ₹ 5,000
Cash purchases made for ₹ 3,000
Good purchased on credit from Senthamarai ₹ 15,000
Goods sold on credit to Pushparaj ₹ 25,000
Payment made to Senthamarai by cheque ₹ 5,000
Cash received from Shankar ₹ 30,000
Cash sales made for ₹ 6,000
Depreciate machinery at 10%
Closing stock on 31.03.2019 ₹ 15,000

6. Create a Company M/S Birla pvt Ltd and enter the following details and prepare profit and loss account.

Started business with cash Rs. 50,000/-
Deposited cash in State Bank of India Rs. 15,000/-
Paid Salary Rs. 5,000/- to Mrs. Asmita
Purchase Goods worth Rs. 45,000/- on credit from Swan Enterprises.
Credit Sales of goods worth Rs. 75,000/- to 'Y' Company
Returned goods to 'Swan Enterprise' Rs. 5,000/-
Received goods returned by 'Y' Company.
Purchased Machinery on Credit Rs. 40,000/- from Manish EnterprisesHint ' F7 ' Journal
Received commission in cash Rs. 2,000/-
Withdrawn from State Bank of India Rs. 5,000/-

7. Record the following transactions in the books of Divya Pvt. Ltd. And prepare balance sheet.

Devi commenced a business with a capital of 4,00,000
An account was opened with Indian Bank and deposited ₹ 60,000
Purchased furniture by paying cash ₹ 15,000
Goods purchased on credit from Sumathy for ₹ 50,000
Cash sales made for ₹ 10,000
Goods purchased from Raja for ₹ 5,000 and paid by cheque
Goods sold to Aran on credit for ₹ 70,000
Money is withdrawn from bank for office use ₹ 25,000
Part payment of ₹ 30,000 made to Sumathy by cheque
Aran made part payment of ₹ 10,000 by cash
Salaries paid to staff through ECS ₹ 36,000
Carriage on purchases of ₹ 6,000 paid by cash
Purchased computer from Muthu Ltd. on credit ₹ 44,000

8. Record the following transactions in the books of KMS Private limited using tally.

Kumar commenced a business with a capital of Rs. 5,00,000
Opened an account with SBI and deposited Rs. 80,000
Purchased furniture by paying cash Rs. 20,000
Goods purchased on credit from Kalpana for Rs. 60,000
Cash sales for Rs. 20,000
Goods purchased from Ramu for Rs. 7,000 paid by cheque
Goods sold to Venu on credit for Rs. 80,000
Money is withdrawn from bank for office use Rs. 35,000
Part payment of Rs. 40,000 made by Kalpana by cheque.
Aran made part payment of Rs. 20,000 by Cash
Salaries paid to staff through ECS Rs. 45,000
Carriage on purchase of Rs. 8,000 paid by cash
Purchased computer from Maria Ltd on Credit Rs. 50,000

9. Journalize the following transaction in the books of M/S Prashant for April 2011 prepare Balance sheet.

Start business with capital borrowed from his friend Satish 1,10,000
Bought Machinery 40,000
Sold goods for cash to Satish 25000
Purchase goods from Somesh 30000
Bought goods for cash from Nitin 26000
Cash sales 10000
sold goods to Manish 8000

10. Journalize the following transaction in the books of Rahul Thakur for the month of March 2018 and prepare profit and loss account.

Start Business with Furniture 15000 and machinery 40000
Borrowed from central Bank 45000
Bought goods 30000 8 Sold goods to Manoj on credit 12000
Paid Electricity Bill 1500
Bought Stationary from Vikas 8500

11. Journalize the following transaction in the books of M/s Rupesh for the year ended March 2018 and prepare Profit and loss account.

Rupesh commenced business with cash 80000
Bought goods on credit from Ramesh 15000
Paid into Bank 8000
Bough from Sanket on credit 15000
Bought goods for cash 12000
Received goods from Sukesh 7500
Goods sold on credit to Chanda 9000

12. Create Inventory Entry in Rajshekhar Electronics Mart.
- Cash Balance: - 2, 00,000
- Bank Balance: - 2, 00,000
- Creditor: - Sun Electronics
- Debtors: - Moon Electronics

13. Create Inventory Entry in Disha Electronics Mart.

- Cash Balance: - 2, 00,000
- Bank Balance: - 2, 00,000
- Creditor: - Satyam Electronics
- Debtors: - Akash Electronics

	Opening Stock		Purchase	Sales		Closing Stock
	QTY	Price	QTY	QTY	Price	
Samsung Galaxy F41	10	11499	15	20	14449	5
Realme 7i (up to 128 GB)	10	8999	15	20	10799	5
Poco c3	10	4749	15	20	6749	5
Oppo A52 (4 GB 128 GB)	10	10990	15	20	12990	5
Poco X3	10	14999	15	20	16999	5
Realme 7Pro	10	16999	15	20	19999	5
Realme C15 (up to 4 GB)	10	6499	15	20	8499	5
Realmenarzo 20A	10	6499	15	20	8499	5
Infinix Note 7 (4 GB)	10	7990	15	20	9999	5
OPPO Reno2 F (6 GB 256 GB)	10	14990	15	20	16990	5

Stock Item	Opening Stock		Purchase	Sales		Closing Stock
	QTY	Price	QTY	QTY	Price	
LG 6.5 kg Washing Machine	5	10550	10	8	15690	?
Bosch 7.0 kg Washing Machine	5	8550	10	7	10990	?
Samsung 8.5 kg Washing Machine	5	12550	10	12	14950	?
Panasonic 7 kg Washing Machine	5	7500	10	11	9490	?
Whirlpool 7 kg Washing Machine	5	7250	10	15	9250	?
Samsung 6.2 kg Washing Machine	5	10290	10	6	13290	?
Panasonic 8 kg Washing Machine	5	10850	10	3	12290	?
Onida 6.2 kg Washing Machine	5	8290	10	4	10490	?
Panasonic 6 kg Washing Machine	5	10299	10	6	12990	?
Samsung 7 kg Washing Machine	5	12690	10	9	16690	?

14. Create a Company M/s Sure Tech Ltd. IT Park VRC Nagour,

Enter the following sales order by using unit of measures; the order is completely based on Cash 31ˢᵗ August 2010.

Items	Rate	Number
Keyboard	@ 950	2
Mouse	@250	5
Mouse p ad	@175	6
2 GB pen drive	@350	3

Enter the above transaction in Tally and write down the procedure in detail.

15. Create company M/S Computerized Software Ltd. Sadar, Nagpur.

Enter the following sales order in the name of M/s Hack take Comp. Ltd. On 25ᵗʰ September 2008.

Items	Rate	Number
20" Monitor	@ 4500	5

CPU	@11250	4
Laser printer	@5250	3
Scanner	@8750	2

Enter the above transaction and write down the procedure.

16. Create a company name Ratan Pvt. Ltd. and prepare purchase invoice bill from the following details

Bill No	Party Names	Ledgers	Item Names	Quantity	Rate	Amount
1	Ali Computer	Purchase	Mouse	10 Pcs	75 Rs	
			Keyboard	10 Pcs	150 Rs	
			Usb Hub	15 Pcs	25 Rs	
			Monitor	8 Pcs	4500 Rs	
2	Sharma Pvt Ltd	Purchase	Sugar	50-500 Kg	40 Rs	
			Oil	80 Ltr	90 Rs	
			Rice	12-800 Kg	45 Rs	
			Namkeen	5 Kg	90 Rs	
	XYZ Electronics	Purchase	Fan	65 Pcs	120 Rs	
			LED Bulb	70 Pcs	85 Rs	
			Table Fan	14 Pcs	250 Rs	
			Cooler	5 Pcs	2500 Rs	
4	Jain Stationary	Purchase	Note Book	100 Pcs	25 Rs	
			Pencils	150 Pkt	4 Rs	
			Writing Pads	20 Box	25 Rs	
			Markers	25 Pcs	30 Rs	
5	Bansal Pvt Ltd	Purchase	Wireless	18 Pcs	75 Rs	
			Switch	100 Pcs	150 Rs	
			Logitech Mouse	15 Pcs	250 Rs	
			Wireless Keyboard	15 Pcs	350 Rs	

17. Create a company name Shyama traders and enter sales invoice bill from the following details

Bill No	Party Names	Ledgers	Item Names	Quantity	Rate	Amount
1	Shyam Lal Singh	Sales	Mouse	2 Pcs	100 Rs	
			Keyboard	5 Pcs	190 Rs	
			Usb Hub	5 Pcs	200 Rs	
			Monitor	2 Pcs	5000 Rs	
2	Praveen Kumar Singh	Sales	Sugar	2-500 Kg	45 Rs	
			Oil	2 Ltr	95 Rs	
			Rice	1 Kg	50 Rs	
			Namkeen	2 Kg	95 Rs	
3	Ali Abbas Zaidi	Sales	Fan	5 Pcs	150 Rs	
			LED Bulb	2 Pcs	100 Rs	
			Table Fan	2 Pcs	300 Rs	
			Cooler	1 Pcs	4000 Rs	
4	Hari Kumar Singh	Sales	Note Book	2 Pcs	30 Rs	
			Pencils	5 Pkt	5 Rs	
			Writing Pads	2 Box	30 Rs	
			Markers	5 Pcs	35 Rs	
5	Mohd Khan	Sales	Wireless	2 Pcs	150 Rs	
			Switch	6 Pcs	150 Rs	
			Logitech Mouse	2 Pcs	300 Rs	
			Wireless Keyboard	2 Pcs	450 Rs	

18. Record the following transactions in the books of M/s ABC Limited and prepare Bank Reconciliation Statement for the month of January 2020:

SL No	Date	Transactions for the month	Bank Date
1	01/01/2020	Started business with cash Rs 5,00,000.	-
2	01/01/2020	Cash deposit into SBI Rs. 1,00,000	01/01/2020
3	01/01/2020	Cash withdrawn from SBI for office use Rs 70,000	01/01/2020
4	01/01/2020	Transfer Rs 20,000 from SBI to HDFC Bank.	01/01/2020
5	01/01/2020	Cash withdraw by the owner Rs 2,500 for personal use.	01/01/2020
6	01/01/2020	Purchase goods from Kailash Hardware	-

		Parryware Steel Pedestal 200 pcs @ Rs 1500 each	
7	01/01/2020	Parryware Indus Basin 150 pcs @ 1200 each	
		Sold goods to R.K.Enterprise	-
		Parryware Steel Pedestal 200 pcs @ Rs 1950 each	
8	01/01/2020	Parryware Indus Basin 150 pcs @ 1650 each	02/01/2020
		Received cheque from R.K Enterprise against Invoice No. 19-	
		20/001 of Rs 752,250 and deposited in HDFC Bank.	
9	02/01/2020	Commission received in HDFC Bank of Rs 25000	31/01/2020
10	02/01/2020	Purchase Furniture of Rs 15000 by cheque (SBI).	31/01/2020
11	02/01/2020	Paid cheque to Kailash Hardware, against Invoice No. 19-20/363	31/01/2020
12	02/01/2020	of Rs 250,000 from HDFC Bank	02/01/2020
		Bank deducted as Ledger Folio Charges from SBI Current	
13	02/01/2020	Account Rs 90.	
14	31/01/2020	Paid Salary to Ram in cash Rs 9,500 in cash.	-
		Electricity Charges paid Rs 650 in cash	-
15	31/01/2020	Paid Audit Fee of Rs 3000 in cash.	-
16	31/01/2020	Received Interest from SBI of Rs 600.	31/01/2020
17	31/01/2020	Depreciation charged @10% on furniture.	-

19. Create a Company as "Sagar Industries Ltd." in Tally with inventory management. Pass the
    following Entries and Show the Trial Balance and Balance Sheet of "Sagar Industries Ltd.",
    Show the Cash Book & Bank Book of the company, Show the Day Book.

i.   Sagar started "Sagar Industries Ltd." by bringing Capital Rs.3,00,000/- Cash.
ii.   He deposited Rs.1,00,000/- cash at ICICI bank.
iii.   He paid electricity bill for Rs. 1,200/- by cash.
iv.   He withdrawn Rs. 10,000/- cash for his personal use.
v.   He purchased the following item from Computer Lab. Ltd. on credit
       a.   Computer - 10 Nos. - @20000/- each
vi.   He sold the following item to Somnath Traders in cash
       a.   Computer - 5 Nos. - @27500/- each
vii.   He received Rs. 6,000/- as commission from Rohit by cash.
viii. He paid House Rent for Rs. 5,000/- by cash.
ix.   He withdrawn Rs. 25,000/- cash from ICICI Bank.
x.   He purchased furniture for Rs. 25,000/- by cash for office use.

20. Record the following transactions in the books of 'M's Albert & Brothers

a.   Aasim starts business with Rs. 50,000
b.   He opens a SBP saving bank account and deposits Rs. 20,000
c.   Bought furniture for Rs. 5,000, machinery for Rs 10,000
d.   Purchased goods for Rs. 14,000.
e.   Sold goods for Rs.8, 000.
f.   Purchased goods from AK & Company for Rs. 11,000.
g.   Paid telephone rent for the year by Cheque Rs. 500

h. Bought one typewriter for Rs. 2,100 from Universal Typewriter Co. on credit
i. Sold goods to Junaid for Rs. 12,000.
j. Sold goods to Hussain for Rs. 2000 cash.
k. Amount withdrawn from bank for personal use Rs. 1,500.
l. Received cash from Junaid Rs. 11,900 and discount allowed Rs. 100
m. Paid into bank Rs. 5,800.
n. Bought 50 shares in XY & Co. Ltd. At Rs.60 per share, brokerage paid Rs. 20.
o. Goods worth Rs. 1,000 found defective were returned to AK & Co. and balance of the amount due to them settled by issuing a cheque in their favour.
p. Sold 20 shares of XY & Co, Lid, al Rs. 65 per share, brokerage paid Rs. 20.
q. Bought goods worth Rs. 2,100 from Usman and supplied them to Awais at Rs 3,000
r. Awais returned goods worth Rs. 100, which in turn were sent to Usman
s. Issued a cheque for as, 1,000 in favour of landlord for rent for April
t. Paid salaries to stall Rs. 1,500.
u. Received from travelling salesman Rs 2000 for goods sold by him, travelling expenses Rs. 100. Journal entries

BCCA – Semester – II
Course Type: Core Course
Course Name: Principles of Business Management
Course Code: 2T2

Course Outcomes

CO1	The student will be able to identify different functions of management and management thoughts.
CO2	The student will be able to differentiate between Management and Administration as well as identify the skills required for a manager.
CO3	The student will be able to Outline and illustrate plans for various activities.
CO4	The Student will be able to develop competency of decision making while working in a group.
CO5	The student will be able to apply various management principles in his/ her day-to-day life

Unit I: Introduction -Nature, function, definition and importance of management, Definition, nature, purpose and scope of management, Functions of a manager, is management a science or art? Development of Management Thought -Scientific management; Contribution of Taylor, Fayol, Mary Follet, Elton Mayo; Hawthorne experiments, Contingency approach.

Unit II: Management and Administration-Management and administration, Management as a profession, Professionalism of management in India, Management ethics and management culture, Skills required of manager, Classification of skills, Methods of skills development.

Unit III: Management Planning-Concept of planning, objectives, Nature, Types of plan, Stages involved in planning, Characteristics of a good plan, Importance, Limitations of planning, Making planning effective, Strategic planning in Indian Industry.

Unit VI: Decision Making-Concept, characteristics of decisions, Types of decisions, Steps Involved in decision making, Importance of decision making, Methods of decision making, Committee Decision Making. Organisation -Concepts, Principle of organization, Importance, Features of good organization structure, Types of Organisation structure.

Reference Books:

1. Essential of Business Administration - K.Aswathapa Himalaya Publishing House

2. Management: Concept and Strategies By J. S. Chandan, Vikas Publishing

3. Principles of Management, By Tripathi, Reddy Tata McGraw Hill

4. Principles of Management By Ramasamy T, Himalaya Publishing House

5. Principles of Management, Dr.Neeru Vashisht & Dr.Namita Rajput, Taxmann

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Course Outcomes	
CO1	Student will be able to understand and compare database management system with conventional file system and suggest suitable database system for a given situation.
CO2	Student will be able to design database by analysing different database models for real life situations.
CO3	Student will be able to reduce redundancy and inconsistency for the given table using normalization.
CO4	Student will be able to apply various SQL commands and operators to manage database operations.
CO5	Students will be able to evaluate different data constraints for maintaining integrity of the given database.

UNIT-I

Introduction to database: Data, Information, Metadata, Data dictionary, Database, Components of a database, DBMS, Components of DBMS, Traditional File System Versus Database Systems, Disadvantages of traditional file system, Database systems, Advantages and Disadvantages of database systems, DBMS Users, Schemas, Subschema and Instances, Three Level Architecture of Database Systems (DBMS), Data independence.

File Organization, Basic Concepts of Files, Records and record types, Types of files, File Organization Techniques

UNIT-II

Data Model: Types of data models, Codd's rules, Comparison of various data models, Types of Database Systems, Comparison between Client/Server and Distributed Database System, comparison between DBMS and RDBMS.

E-R Models, Basic concepts, Types of Attributes, Relationship Sets, Degree of relationship sets, Mapping cardinalities, Keys, Types of keys, Entity—Relationship Diagram, Advantages and Limitation of E-R model, Types of Entity Sets. Enhanced Entity-Relationship (EER), Superclass and subclass entity types, Specialization, Generalization, Attribute inheritance, Aggregation.

UNIT-III

Normalization: Benefits of normalization, First, Second and Third normal forms. Denormalization, advantages and disadvantages of denormalization.

Parallel databases: Parallel Database Architectures, Advantages and Disadvantages of Parallel Databases.

Distributed Database: Basic Concepts, Distributed Database Management System (DDBMS), Advantages and Disadvantages of Distributed Databases. DDBMS Architectures, Comparison of DBMS and DDBMS, Comparison of Parallel and Distributed Databases.

UNIT-IV

Structured Query Language, Characteristics of SQL, Advantages of SQL, Components of SQL Language: DDL, DML, DCL, DQL. Basic data types.

Table fundamentals: creating and modifying table, Data Constraints, Types of data constraints, Operators in SQL.

ORACLE functions: Text, Numeric, Date functions.

Text Books

1. Introduction to Database Management System (Second Edition) by Satinder Bal Gupta and Aditya-Mittal, Laxmi Publications Pvt. Ltd.

2. SQL, PL/SQL by Ivan Bayross, BPB Publications.

References:

1. Database System Concepts, 7th Edition by Abraham Silberschatz, Henry F. Korth, S. Sudarshan, McGraw Hill Education.

2. Database Management Systems (Third Edition) by Johannes Gehrke and Raghu Ramakrishnan, McGraw Hill Education.

3. Fundamentals of Database Systems (Sixth Edition) by R Elmasri and S Navathe, Pearson Publication.

4. An Introduction to Database Systems by Bipin C. Desai, Galgotia Publication.

5. Teach Yourself SQL in 10 Minutes (Fourth Edition) by Forta Ben, Sams Publication.

Bachelor of Commerce (Computer Application)
BCCA (CBCS) – Sem II
Course Type: Skill Enhancement Course
Course Name: E-Commerce and Web Designing
Course Code: 2T4

Course Outcomes	
CO1	Student will be able to illustrate understanding of E-commerce & EDI concepts
CO2	Student will be able to select right E-Commerce Business Model in the given business environment.
CO3	Student will be able to deploy Online Business Transactions and E-Payment System in E-Commerce
CO4	Student will be able to create the web pages using HTML.
CO5	Student will be able to plan online business models using E-commerce concepts.

Unit I

Introduction to E-Commerce and Business Strategy

Internet: Evolution, Concept, Growth of Internet, Emergence of World Wide Web, **Introduction to E-Commerce:** Meaning, Definition, Concept, History of E-commerce, Features, Scope, Function of E-Commerce, Size, limitations, growth and future projection of E-commerce market Worldwide and in India; E-commerce Framework (People, Public Policy, Marketing and Advertisement, Support Services, Business Partnerships); E-Commerce v/s Traditional Commerce; E-Commerce opportunities for Industries **Classification by Application Type:** Electronic market, EDI, Internet Commerce, **EDI Electronic Data Interchange (EDI):** Meaning, standards, application ,benefits, factors influencing the choice of EDI ; Ecommerce trade cycles

Unit II

Models of E-Commerce and Inter-Organizational E-Commerce

Models of E-Commerce: Business-to-Business(B2B),Business-to-Consumer (B2C); Business-to-Consumer-to-Business(C2B), Consumer-to-Consumer (C2C) E-Commerce, Business-to-Government (B2G) - Meaning, Advantages ,Importance, examples, Major Business-to-Consumer(B2C) Business Models, Major Business-to-Business(B2B) Business Models, Eight Key Elements of a E-Commerce Business Model , Business Models in Emerging E-Commerce Areas ,impact of e-commerce on business models, **Electronic markets:** advantages , disadvantages, usage & Future of E-Markets, **Inter-Organizational E-Commerce transactions:** Advantages and Disadvantages of Inter-Organizational E-Commerce

Unit III

Online Business Transactions, E-Payment System & Security in E-Commerce

Online Business Transactions: Meaning, purpose, advantages and disadvantages of transacting online; E-commerce applications in various industries like banking, insurance, payment of utility bills, online marketing; e-tailing online services, auctions ; Secure Online Shopping Guidelines **E-payment System:** Meaning, factors considered in designing e-commerce payment; methods of e-payments; digital signature; payment gateways; online banking ; risks involved in e-payments **E-Commerce Security:** E-Commerce Security Issues, Security Threats, Security Procedure : Firewall, Encryption, Password, Access Control List, Digital Certificate

Unit IV

Introduction to Web Designing and HTML

Role of website in e-commerce; website strategies & web-site design principles HTML -Concept, meaning ,History of HTML, HTML tags and attributes; Tags v/s elements; Structure of HTML , Working with HTML elements –Paragraphs, Headings, fonts, comments, physical style, logical style , Horizontal Rule, Adding Images ;Use of Hyperlinks in html –Linking to same page ,linking to other pages in html; List tags in html-Ordered, Unordered and Nested ; Creating and designing tables in HTML; Creating Simple forms using -Textbox, Password, Checkbox, Radio button ,button, dropdown, etc. Creating free websites using Google Sites.

Text Books

1. E-Commerce & Web Designing, Dr. S.B. Kishore, Rajani Singh, Nikhilesh A. Vaidya, Das Ganu Publications
2. Fundamentals of E-Commerce, Shivani Arora, Taxmann's Publications
3. E-Commerce by Shivani Arora, Taxmann's Publications
4. World Wide Web design with HTML, C Xavier, McGraw Hill Education.

Reference Books:

1. Information Technology by Dr. Sushila Madan, Taxmann's Publications
2. Advance E-Commerce and Mobile Commerce by Suman M., Divakara Reddy N., Himalaya Publishing House Pvt. Ltd.
3. E-Commerce for Entrepreneurs-8th Edition by Dr. Sudeslina Chakraborty, Priyanka Tyagi, BPB Publications
4. Web Designing and Publishing by Prof. Satish Jain, M. Geetha Iyer, BPB Publications
5. Web Designing & Publishing Module-2 by P K Pandy, V Mishra, T Balaji Publications

Bachelor of Commerce (Computer Application)
BCCA (CBCS) – Sem II
Course Type: Core Course
Course Name: Practical of Tally-II (ERP 9) (Management Accounting & Reporting)
Course Code: 2P5

Course Outcomes	
CO1	Given the details about pay scale, various allowances and deductions applicable to the employee the student will able to compute Gross and taxable salary using Tally Erp9
CO2	Given the details about the financial transactions students will be able to prepare report related to financial transactions.
CO3	Given the details about the various Payment transaction student will be able to prepare TDS report for a specific period.
CO4	Given the information about the taxable transaction under GST, the student will be able to prepare GST report.

UNIT I

Payroll & Compliances

Configuration Payroll in Tally.ERP9, Creating Payroll Masters, Processing Payroll in Tally ERP 9, Accounting for Employer PF Contribution, Accounting for Employer ESI Contribution, Payment of Professional Tax

UNIT II

Reports

Financial Statements, Trading Account, Profit & Loss Account, Balance Sheet, Accounts Books and Reports, Inventory Books and Reports, Exception Reports, Statutory Reports, Payroll Reports, Trail balance, Day Book, List of Accounts, Stock Summary, Outstanding Statement

UNIT III

Fundamentals of Taxation

Basic Concepts of TDS, Configuring TDS in Tally.ERP9, Creation Masters, Processing Transaction, TDS Reports

UNIT IV

Advanced Taxation

Basics of GST, Configuring GST Features, Creating Masters, Entering Transactions, GST Report, GST Filing

Text Books

1. Learn Tally ERP 9 In 30 Days Soumya Ranjan Behera B.K. Publications Pvt. Ltd.
2. Tally ERP 9 Advanced Usages, Sanjay Kumar Satapathy, Notion Press Media Pvt. Ltd.

Reference Books:

1. Implementing Tally-ERP 9.0, Asok K. Nadhani, BPB Publications
2. Tally ERP 9, Shraddha Singh, V&S Publishers
3. Tally ERP 9 Training Guide - 4th Revised & Updated Edition, Asok K. Nadhani, BPB Publications
4. Tally ERP 9 Book - Learning Tally ERP 9 With GST, Sajee Kurian, Blessings Inc.

1. Prepare GST sales invoice

Bills No	Party Names	Item Names	GST Rate	Quantity	Rate	Remarks
1	Raghu Raj State: UP	Usb Hub	18%	12 Pcs	30 Rs	50% SGST
		Monitor	18%	7 Pcs	5000 Rs	50%
2	Raju Shopkeeper State: UP	Sugar	5%	40-500 Kg	50 Rs	CGST 50%
		Oil	5%	80 Ltr	90 Rs	SGST 50%
		Rice	5%	12-800 Kg	45 Rs	
		Namkeen	5%	5 Kgs	90 Rs	
3	Jony Store State: UP	Fan	18%	60 Pcs	145 Rs	CGST
		LED Bulb	18%	70 Pcs	95 Rs	
		Table Fan	18%	12 Pcs	450 Rs	50% SGST
		Cooler	18%	4 Pcs	3000 Rs	50%
4	Gupta Shop State: UP	Note Book	18%	90 Pcs	30 Rs	CGST
		Pencils	12%	150 Pkt	6 Rs	
		Writing Pads	18%	20 Box	30 Rs	50% SGST
		Markers	12%	25 Pcs	40 Rs	50%
5	Salman Corner State: UP	Wireless	18%	18 Pcs	85 Rs	CGST
		Switch	18%	100 Pcs	190 Rs	
		Logitech Mouse	18%	15 Pcs	300 Rs	50% SGST 50%
		Wireless Keyboard	18%	15 Pcs	350 Rs	

2. Prepare GST sales invoice

BillsNo	Party Names	Item Names	GST Rate	Quantity	Rate	Remarks
1	Raju Shopkeeper State: UP	Sugar	5%	Kg	50 Rs	
		Oil	5%	20 Ltr	100 Rs	
		Rice	5%	10-500 Kg	50 Rs	
		Namkeen	5%	10 Kg	100 Rs	
		Windows Xp	18%	100 Cd	1400 Rs	CGST
		Windows 7	18%	120 Cd	1500 Rs	

No	Party Names	Item Names	GST Rate	Quantity	Rate	Remarks
2	Naaz ComputerState : UP	Windows 8	18%	110 Cd	1500 Rs	50% SGST 50%
		Windows 10	18%	120 Cd	1700 Rs	
		Office Software	18%	200 Cd	1000 Rs	
3	Jeevan KiranaState: UP	Coffee	5%	500 Gm	180 Rs	CGST 50% SGST 50%
		Salt	0%	22-900 Kg	20 Rs	
		Jeera	5%	500 Gm	140 Rs	
		Red Chilli	5%	10-500 Kg	100 Rs	
4	Salman CornerState: UP	Oppo	12%	6 Box	13000 Rs	CGST 50% SGST 50%
		Intex	12%	8 Box	9500 Rs	
		Asus	12%	7 Box	12000 Rs	
		Lenovo	12%	3 Box	14000 Rs	
		Oneplus	12%	4 Box	24000 Rs	
5	Naaz ComputerState : UP	Usb Hub	18%	12 Pcs	30 Rs	CGST 50% SGST 50%
		Wire	18%	10 Box	45 Rs	
		Monitor	18%	12 Pcs	1500 Rs	
		C.P.U	18%	12 Pcs	4000 Rs	
		Hard Disk	18%	10 Pcs	3000 Rs	
6	Naaz ComputerState : UP	Mouse	18%	10 Pcs	85 Rs	CGST 50% SGST 50%
		Keyboard	18%	10 Pcs	170 Rs	
		Usb Hub	18%	15 Pcs	30 Rs	
		Monitor	18%	8 Pcs	5000 Rs	
7	A to Z Shop State: Haryana	Wireless	18%	18 Pcs	90 Rs	IGST 100%
		Switch	18%	100 Pcs	160 Rs	
		Logitech Mouse	18%	15 Pcs	300 Rs	
		Wireless Keyboard	18%	15 Pcs	400 Rs	

3. Prepare GST sales invoice

BillsNo	Party Names	Item Names	GST Rate	Quantity	Rate	Remarks
1	Gupta Shop State: UP	Note Book	18%	100 Pcs	30 Rs	CGST 50% SGST 50%
		Pencils	12%	150 Pkt	5 Rs	
		Writing Pads	18%	20 Box	30 Rs	
		Markers	12%	25 Pcs	35 Rs	
2	Raju Shopkeeper State: UP	Coffee	5%	500 Gm	160 Rs	CGST 50% SGST 50%
		Biscuit	5%	45 Pcs	12 Rs	
		Jeera	5%	500 Gm	120 Rs	
		Shakkar	5%	10-500 Kg	90 Rs	

3	Super ComputerState :UP	Windows Xp	18%	100 Cd	1200 Rs	CGST 50% SGST 50%
		Windows 7	18%	120 Cd	1400 Rs	
		Windows 8	18%	110 Cd	1500 Rs	
		Windows 10	18%	120 Cd	1700 Rs	
		Office Software	18%	200 Cd	1200 Rs	
4	Radh ProvisionState: UP	Sugar	5%	50-500 Kg	50 Rs	CGST 50% SGST 50%
		Oil	5%	80 Ltr	100 Rs	
		Rice	5%	12-800 Kg	50 Rs	
		Namkeen	5%	5 Kg	100 Rs	
5	Tammana TechState : Punjab	Solid State Drive	18%	25 Pcs	3000 Rs	IGST 100%
		Optical Drive	18%	20 Pcs	200 Rs	
		SMPS	18%	10 Pcs	600 Rs	
		Video Card	18%	30 Pcs	140 Rs	
		Wireless Card	18%	15 Pcs	130 Rs	
6	Raju Shopkeeper State: UP	Sugar	5%	30-500 Kg	45 Rs	CGST 50% SGST 50%
		Oil	5%	20 Ltr	98 Rs	
		Rice	5%	10-500 Kg	50 Rs	
		Namkeen	5%	10 Kg	100 Rs	

4. Prepare GST sales invoice

1	Electronics MallState: UP	Fan	18%	65 Pcs	140 Rs	CGST 50% SGST 50%
		LED Bulb	18%	70 Pcs	95 Rs	
		Table Fan	18%	14 Pcs	300 Rs	
		Cooler	18%	5 Pcs	3000 Rs	
2	Bauty Queen Store State: UP	Perfume	28%	60 Pcs	140 Rs	CGST 50% SGST 50%
		Lipistic	28%	70 Pcs	95 Rs	
		Body Spary	28%	14 Pcs	300 Rs	
		Nail Polish	28%	25 Pcs	30 Rs	
3	Maharaj Mistri State: UP	Brick Hammer	12%	10 Pcs	145 Rs	CGST 50% SGST 50%
		Chisel	12%	70 Pcs	80 Rs	
		Hand Dill Machine	12%	2 Pcs	1800 Rs	
		Wier Brush	12%	10 Pcs	40 Rs	
4	Ragh Pan BharState: UP	Sugar	5%	50-500 Kg	45 Rs	CGST 50% SGST 50%
		Oil	5%	80 Ltr	120 Rs	
		Rice	5%	12-800 Kg	55 Rs	

		Namkeen	5%	5 Kg	100 Rs	
5	New Clothes State: Bihar	Jacket	12%	4 Pcs	2600 Rs	IGST 100%
		Jeans	12%	7 Pcs	1000 Rs	
		Track Suit	12%	2 Pcs	3000 Rs	
		T-Shirt	12%	8 Pcs	550 Rs	

5. Prepare sales invoice and credit note with the following transactions.

		Solid State Drive	18%	22 Pcs	3000 Rs	CGST 50% SGST 50%
1	Super Computer State :UP	Optical Drive	18%	20 Pcs	200 Rs	
		SMPS	18%	10 Pcs	600 Rs	
		Video Card	18%	28 Pcs	140 Rs	
		Wireless Card	18%	15 Pcs	150 Rs	
2	Bharat Trader State: Haryana	Monitor	18%	8 Pcs	5000 Rs	IGST 100%
		Keyboard	18%	8 Pcs	200 Rs	
		Usb Hub	18%	10 Pcs	30 Rs	
		Hard Disk	18%	5 Pcs	4800 Rs	

Sales Returned	Credit Note	
Super Computer	Optical Mouse	2 Pcs
	Video Card	4 Pcs
Bharat Traders	USB Hub	5 Pcs

6. Create purchase invoice from the following transaction

BillsNo	Party Names	Group	Item Names	GST Rate	Quantity	Rate	Remarks
1	Raj Computer State: UP	Computer Parts	Mouse	18%	10 Pcs	75 Rs	CGST 50% SGST 50%
			Keyboard	18%	10 Pcs	150 Rs	
			Usb Hub	18%	15 Pcs	25 Rs	
			Monitor	18%	8 Pcs	4500 Rs	
2	Sharma Pvt Ltd State: UP	Edible items	Sugar	5%	50-500 Kg	40 Rs	CGST 50% SGST 50%
			Oil	5%	80 Ltr	90 Rs	
			Rice	5%	12-800 Kg	45 Rs	
			Namkeen	5%	5 Kg	90 Rs	
	XYZ	Electrical	Fan	18%	65 Pcs	120 Rs	CGST
			LED Bulb	18%	70 Pcs	85 Rs	

			Item	GST	Quantity	Rate	Remarks
3	ElectronicsState: UP	Items	Table Fan	18%	14 Pcs	250 Rs	50% SGST 50%
			Cooler	18%	5 Pcs	2500 Rs	
4	Jain Stationary State: UP	Stationary	Note Book	18%	100 Pcs	25 Rs	CGST 50% SGST 50%
			Pencils	12%	150 Pkt	4 Rs	
			Writing Pads	18%	20 Box	25 Rs	
			Markers	12%	25 Pcs	30 Rs	
5	Bansal Pvt Ltd State: UP	Computer Parts	Wireless	18%	18 Pcs	75 Rs	CGST 50% SGST 50%
			Switch	18%	100 Pcs	150 Rs	
			Logitech Mouse	18%	15 Pcs	250 Rs	
			Wireless Keyboard	18%	15 Pcs	350 Rs	
6	Sharma Pvt Ltd State: UP	Edible Items	Sugar	5%	30-500 Kg	40 Rs	CGST 50% SGST 50%
			Oil	5%	20 Ltr	90 Rs	
			Rice	5%	10-500 Kg	45 Rs	
			Namkeen	5%	10 Kg	90 Rs	

7. Create a purchase invoice with following transactions

BillsNo	Party Names	Group	Item Names	GST Rate	Quantity	Rate	Remarks
1	Microsoft CorporationState: Delhi	Software	Windows Xp	18%	100 Cd	1200 Rs	IGST 100%
			Windows 7	18%	120 Cd	1200 Rs	
			Windows 8	18%	110 Cd	1400 Rs	
			Windows 10	18%	120 Cd	1400 Rs	
			Office Software	18%	200 Cd	1000 Rs	
2	Rakshit Kirana State: UP	Edible Items	Coffee	5%	500 Gm	150 Rs	CGST 50% SGST 50%
			Salt	0%	22-900 Kg	15 Rs	
			Jeera	5%	500 Gm	120 Rs	
			Red Chilli	5%	10-500 Kg	80 Rs	
3	Sonu MobileState: UP	Mobile phone	Oppo	12%	6 Box	12000 Rs	CGST 50% SGST 50%
			Intex	12%	8 Box	9000 Rs	
			Asus	12%	7 Box	11000 Rs	
			Lenovo	12%	3 Box	12000 Rs	
			Oneplus	12%	4 Box	21000 Rs	
	Royal Computers		Usb Hub	18%	12 Pcs	25 Rs	CGST
			Wire	18%	10 Box	42 Rs	

4	State: UP	Computer Parts	Monitor	18%	12 Pcs	1400 Rs	50%
			C.P.U	18%	12 Pcs	3000 Rs	SGST 50%
			Hard Disk	18%	10 Pcs	2500 Rs	
5	Big Computer State: UP	Computer Parts	Mouse	18%	10 Pcs	75 Rs	CGST 50% SGST 50%
			Keyboard	18%	10 Pcs	150 Rs	
			Usb Hub	18%	15 Pcs	25 Rs	
			Monitor	18%	8 Pcs	4500 Rs	
6	Al-Haider PvtLtd State: Bihar	Computer Parts	Wireless	18%	18 Pcs	75 Rs	IGST 100%
			Switch	18%	100 Pcs	150 Rs	
			Logitech Mouse	18%	15 Pcs	250 Rs	
			Wireless Keyboard	18%	15 Pcs	350 Rs	

8. Create purchase invoice from the following transactions

BillsNo	Party Names	Group	Item Names	GST Rate	Quantity	Rate	Remarks
1	Rajshaan Store State:Raj	Stationary	Note Book	18%	100 Pcs	25 Rs	IGST 100%
			Pencils	12%	150 Pkt	4 Rs	
			Writing Pads	18%	20 Box	25 Rs	
			Markers	12%	25 Pcs	30 Rs	
2	Rakshit Kirana State: UP	Edible Items	Coffee	5%	500 Gm	150 Rs	CGST 50% SGST 50%
			Biscuit	5%	45 Pcs	10 Rs	
			Jeera	5%	500 Gm	120 Rs	
			Shakkar	5%	10-500 Kg	80 Rs	
3	Microsoft CorporationState: Delhi	Software	Windows Xp	18%	100 Cd	1200 Rs	IGST 100%
			Windows 7	18%	120 Cd	1200 Rs	
			Windows 8	18%	110 Cd	1400 Rs	
			Windows 10	18%	120 Cd	1400 Rs	
			Office Software	18%	200 Cd	1000 Rs	
4	Arshi ProvisionState: UP	Edible Items	Sugar	5%	50-500 Kg	40 Rs	CGST 50% SGST 50%
			Oil	5%	80 Ltr	90 Rs	
			Rice	5%	12-800 Kg	45 Rs	
			Namkeen	5%	5 Kg	90 Rs	
5	A to Z Computer State: UP	Computer Parts	Solid State Drive	18%	25 Pcs	2500 Rs	CGST 50% SGST 50%
			Optical Drive	18%	20 Pcs	150 Rs	
			SMPS	18%	10 Pcs	550 Rs	
			Video Card	18%	30 Pcs	120 Rs	
			Wireless Card	18%	15 Pcs	120 Rs	

	Party Names	Group	Item Names		Quantity		Rate	Remarks
6	Singh Provision Store State: UP	Edible Items	Sugar	5%	30-500 Kg		40 Rs	CGST 50% SGST 50%
			Oil	5%	20 Ltr		90 Rs	
			Rice	5%	10-500 Kg		45 Rs	
			Namkeen	5%	10 Kg		90 Rs	

9. Create purchase invoice from the following transactions

BillsNo	Party Names	Group	Item Names	GST Rate	Quantity	Rate	Remarks
1	Vinod ElectronicsState: UP	Electrical Items	Fan	18%	65 Pcs	120 Rs	CGST 50% SGST 50%
			LED Bulb	18%	70 Pcs	85 Rs	
			Table Fan	18%	14 Pcs	250 Rs	
			Cooler	18%	5 Pcs	2500 Rs	
2	Horvath ConstructionState: UP	Tools	Brick Hammer	12%	10 Pcs	135 Rs	CGST 50% SGST 50%
			Chisel	12%	70 Pcs	75 Rs	
			Hand Dill Machine	12%	2 Pcs	1500 Rs	
			Wier Brush	12%	10 Pcs	35 Rs	
3	Arshi Provision Store State: UP	Edible items	Sugar	5%	50-500 Kg	40 Rs	CGST 50% SGST 50%
			Oil	5%	80 Ltr	90 Rs	
			Rice	5%	12-800 Kg	45 Rs	
			Namkeen	5%	5 Kg	90 Rs	
4	Fashion Clothes House State: UP	Cloths	Jacket	12%	4 Pcs	2599 Rs	CGST 50% SGST 50%
			Jeans	12%	8 Pcs	850 Rs	
			Track Suit	12%	2 Pcs	2500 Rs	
			T-Shirt	12%	8 Pcs	450 Rs	
5	A to Z Computer State: UP	Computer Parts	Solid State Drive	18%	25 Pcs	2500 Rs	CGST 50% SGST 50%
			Optical Drive	18%	20 Pcs	150 Rs	
			SMPS	18%	10 Pcs	550 Rs	
			Video Card	18%	30 Pcs	120 Rs	
			Wireless Card	18%	15 Pcs	120 Rs	

10. Prepare purchase invoice and debit note with the following transactions.

Purchase Returned	Debit Note	
Dennis Dell Computer	USB	5 Pcs

	Hard Disk	3 Pcs
Delhi Cosmetic Store	Perfume	5 Pcs

11. Mr. Rohan eligible to receive a salary of ₹5,00,000 and his employer deducted the TDS and the TDS deduction rate is 10%. you are now liable to pay income tax of ₹20,000 on your total income including salary. pass the accounting entry with TDS for the above transaction in Tally

12. You have hired a painter to paint your house. Contract for the payment is ₹1,20,000 and you deduct the TDS at the rate of 10% pass the accounting entry with TDS for the above transaction in Tally

13. Ms Krishna traders supplying goods worth ₹3,00,000 excluding GST to a public sector company which is owned by the Government of India. For the above transaction, you will have to pass a GST Sales entry in Tally. and then when Krishna Traders will receive the amount from the

			Monitor	18%	8 Pcs	4500 Rs	CGST 50%
1	Dennis Dell Computer State: UP	Computer Parts	Keyboard	18%	10 Pcs	150 Rs	SGST50%
			Usb Hub	18%	15 Pcs	25 Rs	
			Hard Disk	18%	8 Pcs	4500 Rs	
2	Delhi Cosmetic Store	Cosmetic items	Perfume	28%	65 Pcs	120 Rs	IGST 100%

government company, you will pass a receipt entry in Tally. But, the government company will deduct TDS under GST and the TDS deduction rate will be 2% i.e. 1% CGST and 1% SGST.

14. XYZ Finance a government company and it made the payment of ₹3,00,000 to a person named Amit who is your creditor. But, you deducted TDS in the form of GST at 2%. It will be 1% CGST = ₹3,000 and 1% SGST = ₹3,000, according to the GST Act. In total, you only made the payment of ₹2,94,000 via bank account and rest ₹6,000 you have to pay to the government or your GST credit will get reduced by ₹6,000. pass the above GST transaction with TDS in Tally.

15. The following balance sheet has been prepared from the books of Bright on 1-4-2018.

Liabilities		₹		Assets	₹
Capital		2,26,000	Machinery		1,00,000
Sundry creditors:			Furniture		10,000
Ramesh A/c		24,000	Stock		20,000
			Sundry debtors		
			Shankar		50,000
			Cash in hand		15,000
			Cash at bank		55,000
		2,50,000			2,50,000

During the year the following transactions took place:

a)   Wages paid by cash ₹ 2,000
b)   Rent paid by cheque ₹ 5,000
c)   Cash purchases made for ₹ 3,000
d)   Good purchased on credit from Senthamarai ₹ 15,000
e)   Goods sold on credit to Pushparaj ₹ 25,000
f)   Payment made to Senthamarai by cheque ₹ 5,000
g)   Cash received from Shankar ₹ 30,000
h)   Cash sales made for ₹ 6,000
i)   Depreciate machinery at 10%
j)   Closing stock on 31.03.2019 ₹ 15,000

You are required to prepare trading and profit and loss account for the year ended 31-03-2019 and a balance sheet as on that date using Tally.

16. Create the following employees under payroll in tally ERP9.

Name	Under	Basic Pay	Bonus	Overtime	Emp Number	Designation
Sunil Saini	Account	20000	1500	100	A001	Manager
Irfan	Account	22000	1000	50	A002	Clerk
Ajay Kumar	HR	25000	1000	80	H001	Head
Ravi Raj	HR	15000	1000	70	H002	Executive
Sameer	Marketing	9000	1000	45	M001	Manager
Jyoti Tyagi	Marketing	11000	000	30	M002	Executive

17. Create the following ledgers under payroll and print pay slip of employees under M/s Sharma Ltd.

Name	Emp number	designation	BASIC	DA	HRA
Ajay	1021	HR	21000	5600	4000
Vidya	2012	Accountant	15000	4700	6300

18. Create the following entries in payroll voucher of M/s Abhay Ltd.

Name	Emp no	designation	Basic	DA	HRA
Harshal	4004	Manager	20000	6000	2500
Anjali	2004	Clerk	12500	3000	1500
Sameer	1002	Executive	16000	4500	2000

19. Create the following employees in Tally ERP 9 and perform the entries in attendance voucher of M/s Sharma Ltd.

| Name | Designation | Days | | Hrs |
		present	absent	overtime
Akshay	Executive	25	2	10
Vikas	HR	26	1	18

20. Create the following heads in the books of M/s VR enterprises & take print of head ledger.

1) Basic
2) DA
3) HRA
4) PF
5) TA

B.Com. (Computer Application) – (BCCA)

Semester - III

Paper – I

Course Code – 3AE1   **Course Name – Environmental Studies & Community Engagement**

COURSE OUTCOMES	
CO1	Given information on basics of Environmental studies and its types students will be able to **understand** the importance of resources and will be able to apply in
CO2	Given information on Ecology students will be able to **identify** the threats to environment and also able to apply their knowledge to reduce it
CO3	Given information on pollutions and its effect student will be able to **apply** the knowledge to identify the types of pollution and their role in prevention of it
CO4	Given information on social issues and community engagement student will be able to **apply** their knowledge while doing ISR activities to guide the peoples in the society

UNIT - I

Multidisciplinary Nature of Environmental Studies- Environment, Environment Studies, Need for public Awareness, Environmental Degradation, Shelter Security, Economic Security, Social Security, Effects of Housing on Environment , Effects of Industry on Environment. Natural Resources- Introduction, Types of Natural Resource, Forest Resources, Water Resources, mineral Resources, Food Security Resources, Energy resources, Land Resources, Conservation of Natural Resources, Sustainable Lifestyles, Sustainable Water Management(SWM), Biogeochemical Cycle.

UNIT – II

Ecosystem- Introduction to Ecology and Ecological Succession, Ecosystem, Food Chain, Ecological Pyramids, Types of Ecosystems, Forest Ecosystems, Aquatic Ecosystems, Grassland Ecosystem, Desert Ecosystem. Biodiversity and its Conservation- Biodiversity,

Values or Benefits of Biodiversity, Biogeographic Zones of India, Hot Spots of Biodiversity, Endangered and Endemic Species, Rare and Threatened Species, Threats to Biodiversity, Human –Wildlife Conflicts, Conservation of Biodiversity.

UNIT – III

Environmental Pollution and Its Effects- Introduction ,Requirements of a Nonpolluted Environment, Public Health Aspects, Air Pollution, Land Pollution, Land Pollution or Soil Pollution, Marine Pollution, Noise Pollution, Thermal Pollution, Hazardous Wastes, Nuclear Hazards (Radiation Pollution),Solid Waste and Its Management, Role of Individuals in Pollution Prevention, Disaster Management.

UNIT - IV

Community Engagement / Social Issues and the Environment- Introduction, Sustainable Development, Urbanization, Water Conservation, Resettlement and Rehabilitation of People ; Its Problems and Concerns, Social Issues and The Environment, Wasteland Reclamation, ACTs for Environmental Protection, Carbon Credits, Industrial Symbiosis, Initiatives and Roles of Nongovernmental Organization (NGOs) in Environmental Protection, Issues Involved in Enforcement of Environmental Legislation ,Animal Husbandry. Human population and the Environment- Population Growth, Family Welfare Programs, Environment and Human Health, Fundamental Rights, Human Rights, Value Education, HIV/AIDS, Environmental Education, Women's Education, Role of Information Technology in Environment and Human Health.

Text Book

    1. Shashi Chawla , Environmental Studies, McGraw-Hill.

Reference Books

    1. Dr. D. K. Asthana, Dr. Meera Asthana ,Environmental Studies, S. Chand.

    2. Dr. K. Mukkanti, Environmental Studies, S. Chand.

    3. Dr. D. D. Mishra,Fundamental Concepts in Environmental Studies, S.Chand.

    4. Benny Joseph, Environmental Studies, McGraw Hill Education.

Course Code – 3CC1   **Course Name – Business Studies**

COURSE OUTCOMES	
CO1	Given information on Basic of Marketing students will be able to **define** have working knowledge of Marketing.
CO2	Given information on various financial terms, students will be able to **differentiate** between different elements of Marketing Mix.
CO3	Given information on Human Resource Management student will be able to **develop** the basic **understanding** of role and importance of HRM role.
CO4	Students will be able to **understand** different functions of Human Resource Management and able to **apply** the working knowledge of operations management.

UNIT - I

Introduction to Marketing: Introduction, Definition, nature, scope & importance, Marketing Management, Core concepts of marketing, selling concept, production concept, modern marketing concept. Marketing Mix and STP

UNIT - II

Introduction of Finance: Meaning, Scope and importance of Business Finance. Finance Functions. Goals & objectives of financial management. Sources of Financing Long term and Short term, Concept of Capital Structure and budgeting

UNIT - III

Introduction to Human Resource Management: Definition, concept and Scope of H. R. M., Difference between Personnel Management and H.R.M., Importance and Functions of H.R.M. Role of H.R Department.

UNIT - IV

Introduction to Operations Management: Introduction to Operations Management, its Nature, Scope, Importance and Functions. Difference between production, manufacturing and service. Concept and types of production, mass, job-based, batch and assembly line production system. Types of services.

Reference Books

1. Marketing Management by Namaswamy & Ramakumari.
2. Financial Management – I M Pandey – S. Chand & Co. Pvt. Ltd.
3. Aswathappa, K.; Human Resource and Personnel Management (Text and Cases), Tata McGraw Hill Publishing Company
4. Production and Operations Management, K.Aswathappa & K. Shridhara Bhat, Himalaya Publication

<div align="center">**Paper – III**</div>

Course Code – 3AE1   **Course Name - CSS and Java Script**

	Course Outcome
CO1	Given information on basic CSS tags of HTML students will be able to **Apply** Cascading Style Sheet while **developing** Web Pages.
CO2	Given information on elements of CSS students will be able to **demonstrate** the ability to format and represent fonts in effective manner.
CO3	Given information on basics of Java Script student will be able to **Use** different Data Types, Conditional Statements and Looping Statements to Make Web Pages Interactive.
CO4	Students will be able to Create the Interactive Web Pages by Using Functions, Arrays and Events in JavaScript students will be able to demonstrate different events and objects in their web pages

UNIT – I

Introduction to HTML: Tags and Attributes, Basic HTML Syntax. CSS- Overview, Introduction, Advantages, Versions, Creation and maintenance of CSS, CSS Syntax, Type Selectors, Universal Selectors, Descendant Selectors, Class Selectors, ID Selectors, Child Selectors, Attribute Selectors, Multiple Style Rules, Grouping Selectors**,** CSS –Inclusion - Embedded CSS - The <Style> Element, Attributes, Inline CSS - The *Style* Attribute, External CSS - The <Link> Element, Attributes, Imported CSS - @Import Rule, CSS Rules Overriding, CSS Comments.

UNIT-II

CSS ─ Measurement Units, COLORS - Hex Codes, Short Hex Codes, RGB Values, Building Color Codes, Browser Safe Colours. CSS ─ BACKGROUND, CSS FONTS – Setting of Font Family, Style, Variant, Weight, Size, Size Adjust, Stretch, Shorthand Property. CSS TEXT-**Setting of T**ext Colour, Direction, Indent, Alignment, DECORATING THE TEXT – Setting of White Space Between Text, Text Cases, Text Shadow, CSS BORDERS - Color Property, Style Property, Width Property, Border Properties Using Shorthand.

UNIT –III

Java Script - Introduction, Internal Vs. External Scripts, Internal JavaScript Code, Understand The JavaScript Language & The Document Object Model. Variable Declaration, Operators, Types of Operators: Arithmetic Operators, Assignment Operators, Comparison Operators, Logical, Operators, Conditional Operators, Type Operators. Control Statements: **Conditional Statement:** If, If Else, Else If. **Looping Statement:** While, Do_While, For Loop.

UNIT –IV

Function: Function Declaration, built in Functions, Standard Date and Time Functions, HTML Document Object Model, working with HTML Form and Its Elements, Passing Parameter to Function, Returning A Value from Function, Array, Object**:** Creating Object, Accessing Object Properties, Array Object, String Object, Date Object, Math Object, Window Object, Navigator Object. Events: Event Type: Mouse Events, Frame/Object Events, Form Events.

Text Book

1. Lee Purcell, Mary Jane Mara The ABCs of JavaScript BPB Publication Douglas
2. Crockford JavaScript: The Good Parts, 2nd Edition O'Reilly
3. David Flanagan JavaScript: Pocket Reference 3rd Edition O'Reilly

Reference Book

1. WEB PROGRAMMING John Dean, PhD Associate Professor of Computer Science Park
2. University Parkville, Missouri with HTML5, CSS, and JavaScript
3. Kogent Learning Solutions Inc. Web Technologies Black Book: HTML, JavaScript, PHP,
4. Java, JSP, XML and AJAX by Dreamtech Press
5. The Complete Reference Html and CSS by Thomas A. Powell , New York Chicago San
6. Francisco ,Lisbon London Madrid Mexico City,Milan New Delhi San Juan,Seoul Singapore
7. Sydney Toronto

Practical Questions

Execution Program

1. Write an algorithm, draw a flowchart and Write a JavaScript program to find-out the Factorial of a Number.

2. Write an algorithm, draw a flowchart and Write a JavaScript Program to Check Number Is Positive, Negative or Zero.

3. Write an algorithm, draw a flowchart and Write a JavaScript Program to Check the Number Is Palindrome or Not.

4. Write an algorithm, draw a flowchart and Write a JavaScript Program to Check Number Is Prime or Not.

5. Write an algorithm, draw a flowchart and Write a JavaScript program to print factors of a inputted number.

6. Write an algorithm, draw a flowchart and Write a JavaScript Program to Print the Following Pattern.

   ```
   *
   **
   ***
   ****
   *****
   ```

7. Write an algorithm, draw a flowchart and Write a JavaScript Programme to Accept Product Price, Quantity and GST and Calculate the Total Bill Amount.

8. Create a webpage using HTML, CSS create a custom hover and focus effect for navigation items, using CSS transformations.

9. Create a webpage using HTML, CSS create a list with floating headings for each section.

10. Create a webpage using HTML, CSS create a styled checkbox with animation on state change.

Writing Program

1. Create a webpage using HTML, CSS create display an image overlay effect on hover.

2. Create a webpage using HTML, CSS create display a text on top of an image using an overlay.

3. Create a webpage using HTML, CSS create a Navigation bar (with dropdown).

4. Create a webpage Using HTML, CSS create a scrollable container that will snap on elements when scrolling.

5. Write an algorithm, draw a flowchart and Write a JavaScript Program to Calculate the Area of Circle and Circumference of Circle by Using Functions.

6. Write an algorithm, draw a flowchart and Write a JavaScript Program to Accept a Year from User and Check Year Is Leap Year or Not.

7. Write an algorithm, draw a flowchart and Write a JavaScript Program to Perform Click Event On the Button to Change the Background colour of Webpage.

8. Write an algorithm, draw a flowchart and Write a JavaScript Program to Print Table of Inputted Number.

9. Write an algorithm, draw a flowchart and Write a JavaScript program to POPUP Message Program Using Event

10. Write an algorithm, draw a flowchart and Write a JavaScript program to Display Alert for Prompt Message Program.

Paper - IV

Course Code – 3GE4   **Course Name – Ethical Hacking**

	Course Outcome
CO1	Students will be able to understand the basic terminologies of information security and various threats to information.
CO2	Students will be able to apply the obtained knowledge of Ethical hacking, and develop an understanding of different vulnerabilities.
CO3	Students will be able to use hacking tools and techniques in an ethical manner.
CO4	Students will be able to demonstrate knowledge of cryptography and social engineering.
CO5	Given information on Ethical Issues on information security students will be able to memories the legal aspects in information security.

UNIT - I

Information Security Overview

Information Security: Meaning, Elements of information security; the security, functionality, and usability triangle; Security testing-principles, key areas, types. Security policies: need and recommendations; Information security threats and attack vectors; Top information security attack vectors; Common categories of cyber threats. Potential security threats to computer system: security threat, physical threat, non-physical threat; Worm, Virus & Trojan horse – meaning, difference between virus, worm and trojan horse, difference between virus and worm, protection tips to avoid worm, Trojan horses and virus; Spyware –meaning, types, difference between spyware and Trojan horse.

UNIT - II

Ethical Hacking Concepts : Essential terminologies used in hacking; Ethical Hacking : Meaning, definition, need, advantages, disadvantages, scope, limitations, modes of Ethical Hacking, methods, types; Hacker : Meaning, definition, classes, types; Cyber Crime : Meaning, its Types; Cyber-attacks : Meaning, Common types of cyber-attacks, Prevention from Cyber-attacks; Hacktivism; Information Warfare : types, components.

Unit - III

Phases in hacking: the reconnaissance phase, the scanning phase, the gaining access phase, the maintaining access phase, the covering of tracks phase. Social Engineering: attacks, techniques & prevention; Cryptography: meaning, features, types and applications. Encryption : Meaning, key in cryptography; Data encryption : meaning and its need; Overview of cryptology; difference between cryptography and cryptology; difference between symmetric and asymmetric cryptography; Cryptography and Network Security Principles; Ethical Hacking - Sniffing : Meaning ,types

UNIT - IV

Ethical Issues in information security & privacy**;** Cyber Crime and Cyber Terrorism**; Hacker Vs Cracker; The liability of the cracker - Civil liability, Penal liability; Essentials of hacking under section 66; Laws on hacking in India; Filing a complaint about hacking;** Legal aspects of ethical hacking; punishment for hacking in India; Computer fraud and abuse act

Textbooks

1. Security in Computing by Kiran Gurbani , Prof. Sandeep Vishwakarma , Nitesh Shukla, Prof. Ravindra Jaiswal ,Himalaya Publishing House.
2. The Unofficial Guide to Computer Hacking by Ankit Fadia, Laxmi Publications
3. First Step to Ethical Hacking by Bhadoria Nikhalesh

Reference Books

1. Beginners Guide To Ethical Hacking and Cyber Security by Abhinav Ojha
2. Ethical Hacking: A Hands-on Introduction to Breaking In by Daniel Graham
3. Ethical Hacking 2022 - BLACK BOOK by Aamer Khan

Course Code – 3GE4   **Course Name – Computer Network**

	Course Outcome
CO1	Students will be able to understand and use information of basic concepts of Computer Network.
CO2	Students will demonstrate the ability to understand and differentiate between different protocols.
CO3	Students will be able to get detailed knowledge about the various types of transmission media and their uses.
CO4	Students will gain valuable skills in computer networks like switching, routing by using all connectivity devices.
CO5	Students will showcase ability to use different Network Connectivity Devices.

UNIT - I

Basics of Computer Network: Computer Network, Uses of Computer Networks, Business application, Home application, Mobile users, Social issues, Network Topology and their various Types, Analog Signals, Digital Signals, Transmission impairment, Data Rate Limits, Performance, Digital Transmission, Digital-to-Digital Conversion, Analog-to-Digital Conversion, Analog Transmission, Digital-to-Analog Conversion, Analog-to-Analog Conversion. **Types of Network:** LAN, MAN, WAN. Server Based LANs & Peer-to-Peer LANs, Communications Types: Synchronous, Asynchronous, Client-Server Architecture.

UNIT - II

Network Models: Design Issues of the Layer, Protocol Hierarchy, ISO-OSI Reference Model: Functions of each Layer, Various Terminology used in Computer Network, Connection-Oriented & Connectionless Services, Internet. Internet transport layer protocols: UDP and TCP.UDP- Introduction to UDP, Remote Procedure Call, Real-Time Transport Protocol. TCP/IP Reference Model, Comparison of ISO-OSI and TCP/IP Model

UNIT - III

Transmission Media: Media - Guided Media (Wired), Coaxial Cable, Physical Structure, Standards, BNC Connector, Applications, Twisted Pair, Physical Structure, UTP vs STP, Connectors, Applications, Fibre Optics Cable: Physical Structure, Propagation Modes (Single Mode & Multimode), Fibre Sizes, Connectors, Applications , Advantages & Disadvantages, Unguided Media(Wireless): Electromagnetic Spectrum for Wireless Communication, Propagation Methods, (Ground, Sky, Line-of-Sight), Wireless Transmission, Radio Waves, Infrared, Micro-wave.

UNIT - IV

Network Connectivity Devices: Switching, Circuit-Switched Networks, Telephone Networks, Dial-up Modems. Categories of Connectivity Devices, Hub-Passive and Active Hubs, Repeaters, Bridges, Switch-Router, Gateways, Network Security Devices (Firewalls, Proxy Servers); Internet Basics- Internet: Growth, Architecture, Accessing, Internet Service Providers(ISP), **Internet Addressing System**: IP Address, DNS, URL; World Wide Web(WWW): Web Servers, Web Browsers, Search Engine; Concept of Intranet & Extranet.

Text Books:

1. A. S. Tanenbaum (2003), Computer Networks, 4th edition, Pearson Education/ PHI, New Delhi, India.

Reference Books:

1. Behrouz A. Forouzan (2006), Data communication and Networking, 4th Edition, Mc Graw-Hill, India.
2. Kurose, Ross (2010), Computer Networking: A top down approach, Pearson Education, India.

Paper – IV

Course Code – 3GE4　　　　　　　　　**Course Name – Content Writing & Analysis**

Course Outcomes	
CO1	Given information on concepts of content writing student will be able, **understand** the importance of content writing.
CO2	Given information on different types and process of content writing student will be able to understand and identify the process of content writing.
CO3	Given information of various styles and modes of business student will be able to apply the different styles while writing the content according to type of business.
CO4	Given information on basic of plagiarism student will be able to apply the rules and regulation while drafting the content.

UNIT – I

Basics of Content Writing - Concept of Content Writing and its relevance, Role and functions of Content Writers, Print and Web Content Writing, Scope and Types of Content Writing, Principles and processes of Content Writing.

UNIT - II

Types of Content Writing- Process of Content Writing: getting the brief, ideating, researching, structuring, formatting; Editing and Proof-Reading: following company style sheet, grammar, copy flow, restructuring, market research,

UNIT - III

Writing Styles - Writing Styles: Non-fiction (Essays, Reports), Advertising, Newspapers, Writing blogs, Case Studies, White Papers; Corporate Communications: writing for business to business (B2B), business to consumer (B2C), press releases; Newsletters: focus on language, jargon, writing style, target audience, formal and informal language.

UNIT - IV

Plagiarism and Content Writing - Introduction to plagiarism, rules of plagiarism, techniques of writing plagiarism-free content.

Reference Books:

- Turk, Christopher and John Kirkman. Effective Writing. London and New York: Chapman & Hall. Indian Reprint 2003

- Pinker, Steven. The Sense of Style: The Thinking Person's Guide to Writing in the 21st Century . Penguin Books, Reprint edition ,2015

- Seely, John. Oxford Guide to Effective Writing and Speaking. OUP 2nd edition, 2005

- Goins, Jeff. You Are a Writer (So Start Acting Like One). Tribe Press

- Brohaugh, William. Write Tight: Say Exactly What You Mean with Precision and Power.

- Janzer. Anne. The Writer's Process: Getting Your Brain in Gear. Cuesta Park Consulting, 2016

- King, Stephen. On Writing: A Memoir of the Craft. Scribner, 2010

Paper - I

Course Code – 4CC1   **Course Name – Business Economics**

	Course Outcome
CO1	Given the basic Problems of an economy, students will be able to gain an insight, understand the concept of Economics, Business Economics, and Classify the different types of economic system and utilities.
CO2	Given the demand -Supply Analysis, Students will be able to understand and analyse Demand-Supply, elasticity of demand, elasticity of supply and Calculate the Price ,Income and Cross Elasticity of demand
CO3	Given the information on Production and Cost Analysis, Students will be able to able to relate the basic concepts of Production ,Cost and will also be able to demonstrate the law relating to Short Run and Long Run Production Function and compute the Production cost for the given product.
CO4	Students will be able to understand the concept of Market, identify the features of market. They will also analyse and compare the price -output determination under different market structure

UNIT - I

Introduction - Economics and Business Economics – Meaning, nature, concept & scope of business economics. **Basic problem of an Economy and Role of price Mechanism**: Basic problems of an economy, Classification of economy - features, advantages and disadvantages. **Theory of Consumer Behaviour** - Nature of human wants, classification of wants; Utility Analysis – Meaning, definition, features of utility ; Marginal utility analysis – concept of total utility , marginal utility , assumptions of marginal utility analysis ; the law of diminishing marginal utility ; Indifference curve analysis - concept & properties of indifference curve.

UNIT - II

Theory of Demand and Supply - Demand Analysis - Concept of Demand, factors determining demand, Demand Function, Law of Demand **Elasticity of Demand** - Meaning, Definition, Types and Factors affecting Elasticity of Demand **Supply Analysis** – Concept of

Supply: factors determining supply ,Supply function, Law of Supply **Elasticity of Supply** - Meaning ,definition, types of price elasticity of supply.

UNIT - III

Theory of Production and Cost - Theory of Production - Meaning of production, factors of production; Production Function - Meaning, short run v/s long run production function; **Short Run Production Function** - concepts of total product, average product and marginal product, Law of Variable Proportion ; **Long Run Production Function** - Law of Returns to Scale. **Theory of Cost** – meaning of cost, cost concepts, cost function, Short Run total Cost – total fixed cost, total variable cost, total cost; Short Run Average Cost -average fixed cost, average variable cost, average total cost, marginal cost ; Economies and Diseconomies of Scale

UNIT - IV

Market Structure and Pricing theory- Market Structure- Meaning of market, Classification of Market, Concepts of Total revenue, Average revenue and Marginal revenue, Market Structure - Concept, Features types. **Equilibrium Price and Output Determination under Different types of markets in short run and long run** - Perfect Competition, Monopoly, Monopolistic Competition; Price Discrimination in Monopoly; Oligopoly- Meaning , Types, Kinked demand curve

Text Books
1. D. N. Dwivedi, Essentials of Business Economics, Vikas Publishing House Pvt. Ltd.
2. Taxmann's Business Economics (Economics) by Dr. P.M. Salwan and CA Priyanka Jindal

Reference Books
1. David P. Doane, Lori E. Seward, Applied Statistics in Business and Economics, McGraw-Hill.
2. Amit Kumar Upadhyay, Principles of Economics, Vikas Publishing House Pvt. Ltd.
3. P. K. Mehta, Business Economics, Taxmann.
4. Michael Mandel, Economics The basics, McGraw-Hill.
5. Sudip Chaudhuri, Anindya Sen, Economics, McGraw-Hill.
6. Geetika, Piyali Ghosh, Purba Roy Choudhury, Managerial Economics, McGraw-Hill.

Paper – II

Course Code – 4GE2   **Course Name – Business Law & Cyber Security**

	Course Outcome
CO1	Given information on Contract Act 1872 students will be able to define various terminologies comes under this Act. Eg. Agreement, Contract, Types of Contracts etc.
CO2	Given information of Negotiable Instruments Act 1881 students will be able to define and understand the types of Negotiation Instruments.
CO3	Given information on The Information Technology Act, 2000 students will be able to illustrate the various legal terminologies comes under IT Act 2000
CO4	Given information on The Information Technology Act, 2000 students will be able to Apply the code of Ethics while using social media for communication.

UNIT - I

The Indian Contract Act, 1872: Contract – meaning, characteristics and kinds, Essentials of a valid contract - Offer and acceptance, consideration, contractual capacity, free consent, legality of objects., Void agreements, Discharge of a contract – modes of discharge, breach and remedies against breach of contract, Contingent contracts, Quasi – contracts. **Specific Contracts**- Contract of Indemnity and Guarantee, Contract of Bailment, Contract of Agency

UNIT – II

The Negotiable Instruments Act 1881 - Meaning, Characteristics, and Types of Negotiable Instruments - Promissory Note, Bill of Exchange, Cheque, Holder and Holder in Due Course, Privileges of Holder in Due Course. Negotiation: Types of Endorsements, Crossing of Cheque, Bouncing of Cheque. Hundi-Definition, history and types.

UNIT - III

The Information Technology Act, 2000 (Part I):- Introduction of Information Technology Act, Objectives and Features, Applicability and Non-Applicability of the Act- Government and Controller, Definitions, Digital signature, Electronic governance, Attribution, acknowledgement and dispatch of electronic records, Digital Signatures Certificates, Duties of

Subscribers, Penalties and adjudication, Appellate Tribunal, Offences, Secure Electronic Records And Secure Digital Signatures

UNIT - IV

The Information Technology Act, 2000 (Part Ii):- Code of Ethics**,** What are the New Changes in the Act? Amendments in the Act, Due Diligence by Intermediaries and Grievance Redressal Mechanism, Additional due diligence to be observed by significant social media intermediary. Additional due diligence to be observed by an intermediary in relation to news and current affairs content.

Reference Book:

1. S. Chand CA Foundation Tulsian's Business Laws By CA Dr. P C Tulsian
2. The Cyber Security Handbook by Alan Calder.
3. Vinod Publication Cyber Law & Cyber Crimes by Dr. J.N Barowalia Dr Aarushi Jain Edition 2023.

Paper - II

Course Code – 4GE2   **Course Name – Research Methodology**

	Course Outcome
CO1	Given the information on various types of research and design and process, student will be able to identify the basic research process and will be able to interpret its scope for organization.
CO2	Given the information on sample design, its types and hypothesis the student will able to describe different parameters used for sample design also able to formulate the hypothesis.
CO3	Given the various measurement techniques the student will be able to compile questionnaire for various research studies
CO4	Given the information on different data collection methods students will be able to collect the data using primary and secondary methods.
CO4	Given the information students will be able to prepare reports for the given data

Unit I:

Introduction - Meaning, Objectives and Types of research, Research Approach, Research Process, Relevance & scope of research in management. **Research Design -** Features of good Design, Types of Research Design,

Unit II:

Sampling Design - Steps in sample Design, Characteristics of a good sample Design, Probability & Non-Probability sampling. Hypothesis – Meaning, Types, Process, Formation of Hypothesis, Testing of Hypothesis

Unit III:

Measurement & scaling techniques - Errors in measurement. Test of sound measurement, Scaling and scale construction technique. Attitude Measurement and Scales: Introduction to attitude - Various Methods to measure attitude.

Unit IV:

Methods of data collection - Primary data – questionnaire and interviews; Collection of secondary data. **Interpretation of data -** Techniques of Interpretation, Report writing, Layout of a project report, preparing research reports.

Text Book

1. Research Methodology – C.R. Kothari

Reference Books:

1. Business Research Methods – Naval Bajpai
2. Business Research Methodology – J K. Sachdev

Course Code – 4DSE3   **Course Name – Cloud Computing**

Course Outcome	
CO1	Students will be able to use the obtained knowledge to differentiate between different computing paradigms.
CO2	Students will be able to understand the ways to develop and deploy the cloud fundamentals programs.
CO3	Students will be able to classify various service delivery models of a cloud computing architecture and management of cloud.
CO4	Students will be able to describe the cloud service Model and understand the importance of its service providers.

UNIT-I

Computing Paradigms: High-Performance Computing, Parallel Computing, Distributed Computing, Cluster Computing, Grid Computing, Cloud Computing, Bio computing, Mobile Computing, Quantum Computing, Optical Computing, Nano computing, Network Computing.

Cloud Computing Fundamentals: Need for Cloud Computing, Defining Cloud Computing; Network Computing Cloud Computing as a Service, Cloud Computing as a Platform, Principles of Cloud computing, Essential Characteristics, Requirements for cloud services, Benefits and Drawbacks of cloud computing.

UNIT-II

Cloud Computing Architecture and Management: Cloud architecture, Anatomy of the Cloud, Network Connectivity in Cloud Computing, Cloud Applications, Managing the Cloud-Cloud Infrastructure and Cloud application, Migrating Application to Cloud, Phases of Cloud Migration, Approaches for Cloud Migration, **Cloud deployment model-** Characteristics, Types of Deployment -Private, Public, community and hybrid.

UNIT-III

Cloud Service Models: Infrastructure as a Service, **IaaS-** Characteristics, Suitability, Pros and Cons, Summary of IaaS Providers, Platform as a Service **PaaS-** Characteristics, Suitability, Pros and Cons, Summary of PaaS Providers, Platform as a Service, Software as a Service. **SaaS**

- Characteristics, Suitability, Pros and Cons, Summary of SaaS Providers, Platform as a Service, Other Cloud Service Models**. Virtualization:** Opportunities, Approaches to virtualization.

UNIT-IV

Cloud Service Providers: EMC, EMC IT, Captiva Cloud Toolkit, Google, Cloud Platform, Cloud Storage, Google Cloud Connect, Google Cloud Print, Google App Engine, Amazon Web Services, Amazon Elastic Compute Cloud, Amazon Simple Storage Service, Amazon Simple Queue, service, Microsoft, Windows Azure, Microsoft Assessment and Planning Toolkit, SharePoint, IBM, Cloud Models, IBM Smart Cloud, SAP Labs, SAPHANA Cloud Platform, Virtualization Services Provided by SAP, Sales force, Sales Cloud; **Service Cloud:** Knowledge as a Service, Rack space, VMware, Manjra soft, Aneka Platform.

Text Book:

1. Essentials of cloud Computing: K. Chandrasekhran, CRCpress,2014

Reference Book:

1. Cloud Computing: Principles and Paradigms by Rajkumar Buyya,James Broberg and Andrzej M. Goscinski, Wiley, 2011.
2. Cloud Computing: A Practical Approach, Anthony T.Velte, Toby J.Velte, Robert Elsenpeter, Tata McGraw Hill, 2011.
3. Cloud Computing: Implementation, Management and Security, John W. Rittinghouse, James F.Ransome, CRC Press, 2012.

Paper – III

Course Code – 4DSE3   **Course Name – Artificial Intelligence & Machine Learning**

	Course Outcome
CO1	Student will be able to demonstrate build AI blocks.
CO2	Student will be able to understand basic concept of fuzzy logic and robotics.
CO3	Student will be able to analyze and formalize the problem as a Machine Learning Techniques.
CO4	Students will be able to understand the basics of Neural Network in ML and able to apply and evaluate supervised machine-learning techniques to real world problem.

UNIT-I

Introduction to AI: What is AI? History & Applications, **Intelligence System**: What is Intelligence? Types of Intelligence, what is Intelligence Composed of AI? Artificial Intelligence vs. Human Intelligence. **Research Areas of AI:** Speech and Voice Recognition, Working of Speech and Voice Recognition Systems, Real Life Applications of Research Areas, Task Classification of AI. **Agents and Environments:** What are Agent and Environment? The Structure of Intelligent Agents, The Nature and properties of Environments.

UNIT-II

Fuzzy Logic Systems: What is Fuzzy Logic? Why Fuzzy Logic? Fuzzy Logic Systems Architecture, Application Areas of Fuzzy Logic, Advantages and Disadvantages of FLS. **Expert Systems:** Characteristics of ES, Capabilities, Components, what is Knowledge? Inference Engine, User Interface, Limitations, benefits and Applications of Expert System, Development of Expert Systems: General Steps. **Robotics:** What is Robotics? Difference in Robot System and Other AI Program, Robot Locomotion, Components of a Robot, Computer Vision, Application Domains of Computer Vision, Applications of Robotics.

UNIT-III

Introduction to Machine Learning: Human learning & it's types, Machine learning and its categories (Supervised, unsupervised, reinforcement), Algorithms for Supervised Learning-

k-Nearest Neighbours, Decision Trees, Naive Bayes, Logistic Regression, Support Vector Machines, Algorithms for Unsupervised Learning- k-means clustering, Cluster Identification, Comparison- Supervised, unsupervised, reinforcement, **Machine learning using deep learning**-black box approach, duration of development, application of deep learning. Problems not to be solved using Machine Learning, Applications of Machine learning, Tools in Machine Learning, Issues in Machine Learning.

UNIT-IV

Preparing to Model: Machine-learning activities, Basic types of data in machine Learning, exploring structure of data (Numerical data, Categorical data), Data quality and remediation, Data Preprocessing-Dimensionality Reduction, Feature Subset Selection. **Machine learning using Neural Networks**-Introduction of ANN, architecture of ANN-Single layer feed forward network, Multi-layer feed forward ANN's, Competitive network, Recurrent Network, Learning Process in ANN-Number of layers, Direction of single flow, Number of nodes in layers.

Text Book:

1. E.Rich and K. Knight, Artificial Intelligence, Tata McGraw Hill, 2008,
2. Machine Learning by Subramanian Chandramouli, Saikal Dutt, Amit Kumar Das

Reference Book:

1. S, Russell and P. Norvig, Artificial Intelligence: A Modern Approach, 3nd edition, Pearson Education, 2015.
2. Introduction to Machine Learning by Dr. Nilesh Shelke, Dr, Narendra. V.Choudhary, Dr. Gopal Sakarkar, Das Ganu Publications.

Course Code – 4DSE3   **Course Name – Management Information System**

Course Outcome	
CO1	Students will be able to evaluate dimensions of information and its quality. Students will be able to understand the Impact of Information System on Organization.
CO2	Students will be able to understand the concept of MIS and differentiate various types of MIS. Students will be able to evaluate the concepts of Data Mining and Data Warehousing.
CO3	Students will be able to understand ERP, CRM and SCM. Students will be able to evaluate the concept of Business Intelligence and Knowledge Management Systems.
CO4	Students will be able to understand concept of Project Planning and Project Management. Students will be able to interpret Structured Analysis Tools.

UNIT- I

Information: Introduction, Definition, Types of Information, Information Quality, And Dimensions of Information System: Definition, Kinds of Systems, System -related Concepts, Elements of a System, Information System and Organization: Concept, Impact of Information System on Organization.

UNIT- II

Management Information Systems: Definition, MIS and IT, Nature and Scope of MIS, Characteristics, Structure, Types, Role of MIS in Global Business, Challenges faced by MIS. Decision Support Systems: Characteristics and Components. Data Mining, Data Warehousing.

UNIT- III

Enterprise Systems - Introduction, Enterprise Systems, Enterprise Resource Planning (ERP) System, Customer Relationship Management (CRM) System, Supply Chain Management (SCM) System. Business Intelligence, Knowledge Management Systems.

UNIT- IV

Information System Planning - Introduction, Resource Allocation, Project Planning. IS Development and Project Management - Introduction, System Development Models, Project Management. Information Requirements Analysis & Systems Design - Introduction, Systems Analysis, Requirements Determination, Strategies for Requirements Determination, Structured Analysis Tools.

Text Book

1. D. P. Goyal, Management Information System, Vikas Publishing House Pvt Ltd.

Reference Books

1. Waman S. Jawadekar, Management Information Systems, McGraw-Hill.
2. D. P. Nagpal, Management Information Systems, S. Chand.
3. Dr. SushilaMaden, Management Fundamental and Information System, Taxmann.
4. S. Sadagopan, Management Information Systems, PHI.
5. A. K. Gupta, Management Information Systems, S. Chand. 6. Mahesh Halale, Management Information Systems, Himalaya publishing house

Course Code – 4SE3   **Course Name – PHP & MySQL**

	Course Outcome
CO1	Students will able to understand and compare html file and php file and will be able to use the knowledge for a given business application.
CO2	Students will be able to analyse the data and can create forms for real life business applications.
CO3	Student will be able to use techniques to handle cookies and sessions, to create and modify server cookies and operate session on the internet.
CO4	Student will able to explore, analyse and use different files for creating forms and will be able to use database in the backend for the applications.

UNIT- I:

Getting Started with PHP- Basic HTML Syntax, Basic PHP Syntax, Using FTP, Testing Your Scripts, Sending Text to The Browser, Adding Comment to The Script,Basic Debugging Steps. **Variables-** What Are Variables? Variable Syntax, Types of Variables, Variable Values, Understanding, Quotation Marks. **HTML Forms and PHP-** Creating A Simple Forms, Choosing A Form Data in PHP, Displaying Errors, Error Reporting. **Using Numbers-**, Performing Arithmetic, Formatting Numbers, Understanding Precedence, Incrementing and Decrementing a Number, Creating Random Numbers.

UNIT- II:

Using Strings- Creating The HTML Forms, Concatenating Strings, Handling Newlines, HTML and PHP, Finding Substrings, Replacing Parts of a String. **ControlStructures-**The If Conditional, Validation Functions, Using Else, More Operators, Using else if, The Switch Conditional, The for Loop. **Using Arrays-** What Is an Array,creating an Array, Adding Items to an Array, Accessing an Array from A Form.

UNIT- III:

Creating Web Applications- Creating Templates, Using Constants, working with The Date and Time, Handling HTML Forms with PHP, Sending Email. **Cookies andSessions-** What Are Cookies? Creating Cookies, reading from Cookies, Adding Parameters to Cookies, Deleting A

Cookie, What Are Sessions? Creating Session, Accessing Session Variables, Deleting Session. **Creating Functions-** Creating and Using Simple Functions, Creating and Calling Functions That Take Arguments,Setting Default Arguments Values, Creating and Using Functions That Return a Value, Understanding Variable Scope.

UNIT- IV:

Files and Directories- File Permissions, writing to Files, locking to Files, readingfrom Files, **Introduction to Database-** Introduction to SQL, connecting to MYSQL, MYSQL Error Handling, Creating and Selecting a Database, Creating A Database, Inserting Data into A Database, Securing Query Data, Retrieving Data from A Database, Deleting Data in A Database, Updating Data in A Database. **Putting It AllTogether-** Getting Started, connecting to The Database, Writing The User-Defined Function, Creating The Template, Adding Quotes, Listing Quotes, Editing Quotes, Deleting Quotes.

Reference Books

1. Holznr, The Complete Reference – PHP, McGraw-Hill.
2. Mike Mcgrath, PHP & MySQL in Easy Steps, McGraw-Hill.
3. Steve Suehring, Tim Converse & Joyce Park, PHP and MySQL, Wiely.
4. Joel Murach & Ray Harris, murach's PHP and MySQL, Shroff Publishers.
5. Jason Gilmore, Beginning PHP and MySQL

Practical List

Execution Programs

1. Write an algorithm, draw a flowchart and Write a PHP script to print the addition and multiplication of two numbers in PHP using print and echo respectively.

2. Write an algorithm, draw a flowchart and Write a PHP script to generate three random numbers and calculate their average.

3. Write an algorithm, draw a flowchart and Write a PHP script to print the following pattern using nested loop.

```
* * * * *
* * * *
* * *
* *
*
```

4. Write an algorithm, draw a flowchart and Write a PHP script to insert a new item in an array on any position.

5. Write an algorithm, draw a flowchart and Write a PHP script to sort an associative array using the Sort function asort() and ksort().

6. Write an algorithm, draw a flowchart and Write a PHP script to convert a date

from yyyy-mm-dd to dd-mm-yyyy.

Sample Date: 2012-09-12

Expected Result: 12-09-2012

7. Write an algorithm, draw a flowchart and Write a PHP script to remove the whitespaces from a string.

8. Write an algorithm, draw a flowchart and Write a PHP function that checks if a string is all lower case.

9. Write an algorithm, draw a flowchart and Write a PHP script to check whether a entered string is palindrome or not.

10. Write an algorithm, draw a flowchart and Write a PHP script to check that email id is valid or not.

Writing Programs

11.Write an algorithm, draw a flowchart and Write a PHP script to for Creating, Retrieving and Deleting data from the cookie using POST Method.

12. Write an algorithm, draw a flowchart and Write a PHP script to print Fibonacci series using recursion.

13. Write an algorithm, draw a flowchart and Write a PHP script using switch case and dropdown list to display a – Hello! message depending on the language selected in drop down list.

14. Write an algorithm, draw a flowchart and Write a PHP script to count the person age in number of days.

15. Write an algorithm, draw a flowchart and Write a PHP script to create a simple 'birthday countdown' script, the script will count the number of days left for coming birth day.

16. Write a SQL statement to create simple table countries including columns country_id, country_name and region_id.

17. Write a SQL statement to create table countries including columns country_id, country_name and region_id and make sure that the column country_id will be unique and store an auto incremented value.

18. Write a SQL statement to create a table named countries including columns country_id, country_name and region_id and make sure that no countries except Italy, India and China will be entered in the table.

19. Write a SQL statement to insert a record with your own value into the table countries against each columns region_id.

20. Write an algorithm, draw a flowchart and Write a PHP script to replace the first 'the' of the following string with 'That' – Sample: 'the quick brown fox jumps over the lazy dog.'

Expected Result: That quick brown fox jumps over the lazy dog.

<p align="center">**Semester – V**</p>

<p align="center">**Paper - I**</p>

Course Code – 5CC1   **Course Name - Python**

	Course Outcome
CO1	Students will be able to install python and will be able to make efficient use of collection data types.
CO2	Students will be able to apply the concept of decision-making, looping, functions and modules to solve given problem.
CO3	Students will be able to apply file handling and OOPs concept to develop real time business applications for a given problem.
CO4	Student will be able to develop business application using graphical user interface. They will also be able to deploy it on client/customer computer.

UNIT-1

Introduction: History, Installing Python on Windows and Linux, Interacting with interpreter, writing first program, using variables, runtime user input, handling errors. **Performing operations-**Doing arithmetic, Assigning values, Comparing Values, Assessing logic. Examining Conditions, Setting precedence, casting data types, Manipulating bits. **Collection Data types:** List, Manipulating list, tuple, set, dictionary, String- Formatting strings, Modifying strings.

UNIT-II

Decision Making and Looping: Branching with if, Looping while true, Looping over items, continue and break statement. **Defining Functions-**Understanding scopes, Supplying arguments, Returning Values, Using callbacks, Adding placeholders, producing generators, Handling exceptions, Debugging assertions. **Importing Modules -** Storing functions, Owning function names, Interrogating the system, Performing mathematics, Calculating decimals, Telling the time, Running a timer.

UNIT - III

File Handling: Reading and writing files, Updating file strings, Pickling and unpickling of data. **Object Oriented Programming:** Class, Object, data encapsulation, creating instance objects, __init__ method, self parameter, Addressing class attributes, Examining built-in attributes, Collecting garbage, Data hiding, Inheritance, types of inheritance, Overriding base methods, polymorphism.

UNIT-IV

Building interfaces-Launching a window, Responding to buttons, Displaying messages, Gathering entries, Listing options, Polling radio buttons, Checking boxes, Adding images

Developing applications- Generating random numbers, Planning the problem, Designing the interface, Assigning static properties, Initializing dynamic properties, Adding runtime functionality, Testing the program, Freezing the program, Deploying the application.

Text Book

1. Python in easy steps, 2nd Edition by Mike McGrath, McGraw-Hill (2018)

References

1. Think Python: How to Think Like a Computer Scientist 2nd Edition
2. by Allen Downey O'Reilly Media 2016
3. Head First Python Second Edition by Paul Barry – 2016
4. Python Crash Course, 2nd Edition by Eric Matthes No Starch Press; 2nd edition-2019
5. Learning Python 5th edition: Powerful Object-Oriented Programming by Mark Lutz, O′Reilly -2013
6. Fluent Python: Clear, Concise, and Effective Programming 1st Edition by Luciano Ramalho O'Reilly Media - 2015

Course Code – 5AE2   **Course Name – Internet of Things**

	Course Outcome
CO1	Students will be able to describe the components of IoT, design of IoT and challenges associated with implementation of the Internet of Things
CO2	Students will be able to interpret and explain architecture of IoT and role of different protocols used in the implementation of Internet of Things.
CO3	Students will be able to differentiate between Web of Things and Internet of Things. They will also be able to get better insight about IoT programming.
CO4	Students will be able to identify and explore the applications of Internet of Things in real life and different industries.

UNIT-I

Internet of Things: Introduction, Characteristics of IoT, Major components of IoT, Building blocks of IoT, The physical design of IoT, Logical design of IoT, Greenfield and brownfield IoT, Overview of Governance, Privacy and Security Issues.

UNIT-II

IoT Architecture and Protocols: Taxonomy of IoT, Three-layer and five-layer architecture of IoT, cloud and fog based architecture, representative architecture, NFC, WSN, IoT Network Protocol Stack, Bluetooth, ZigBee and 6LowPAN.

UNIT-III

Web of Things and Programming Framework for IoT: Web of Things versus Internet of Things, Two Pillars of the Web – Architecture Standardization for WoT – Platform Middleware for WoT – Unified Multitier WoT Architecture. Programming paradigm, assembly, procedural, Functional, OOP, multi-paradigm programming, Introduction to Arduino programming, Introduction to Python programming, Raspberry Pi and its components, Case studies of IoT using Raspberry Pi

UNIT-IV

IoT Applications areas:– Smart Home, IoT and Healthcare,IoT and Agriculture, IoT and precision farming, IoT and Livestock monitoring,IoTagricultural drones, IoTsmart greenhouses,IoT and military application,IoT and politics,IoT and constructions, IoTSmart Self Driving car, IoT andFitness Trackers, IoT and Connected Factories, IoT and Hospitality and Tourism.

Text Book:

1. Internet of Things (IoT): Principles, Paradigms and Applications of IoT by Dr Kamlesh Lakhwani, Dr Hemant Kumar Gianey, Joseph Kofi Wireko, BPB Publications, 27 February 2020

Reference Book:

2. Internet of Things (A Hands-on-Approach) by Vijay Madisetti and Arshdeep Bahga, 1st Edition, VPT, 2014
3. Rethinking the Internet of Things: A Scalable Approach to Connecting Everything, by Francis daCosta, 1st Edition, Apress Publications, 2013
4. Getting Started with the Internet of Things by Cuno Pfister, O‟Reilly Media, 2011,
5. The Internet of Things, Revised and Updated edition by Samuel Greengard, The MIT Press, August 2021
6. Learning Internet of Things by Peter Waher Packt Publishing January 27, 2015
7. Arduino Programming: The Ultimate Guide For Making The Best of Your Arduino Programming Projects by Damon Parker, Independently Published, 13 April 2020.

Course Code – 5DSE3   **Course Name – Big Data**

	Course Outcome
CO1	Students will be able to understand and learn the basics of Big Data.
CO2	Students will showcase the ability to analyse and identify Big Data Adoption and Planning.
CO3	Student will be able to identify and apply the concepts of Enterprise Technologies, Big Data Business Intelligence and Big Data Storage process.
CO4	Students will showcase the ability to understand the concept of big data processing related to Hadoop File System and MapReduce.
CO5	Student will showcase the understanding of usage of Technology like RDBMS, NoSQL Databases and NewSQL Databases.

UNIT-I

Understanding Big Data: Definition, Datasets, Data Analysis, Data Analytics (Descriptive Analytics, Diagnostic Analytics, Predictive Analytics, Prescriptive Analytics), Business Intelligence (BI), Key Performance Indicators (KPI), Big Data Characteristics, Types of Data (Structured Data, Unstructured Data, Semi-structured Data, Metadata). **Business Motivations and Drivers for Big Data Adoption:** Business Architecture, Business Process Management, Information and Communications Technology, Internet of Everything (IoE).

UNIT-II

Big Data Adoption and Planning Considerations:- Organization Prerequisites, Data Procurement, Privacy, Security, Provenance, Limited Real-time Support, Distinct Performance Challenges, Distinct Governance Requirements, Distinct Methodology, Clouds, Big Data Analytics Lifecycle, Business Case Evaluation, Data Identification, Data Acquisition and Filtering, Data Extraction, Data Validation and Cleansing, Data Aggregation and Representation, Data Analysis, Data Visualization, Utilization of Analysis Results.

UNIT-III

Enterprise Technologies and Big Data Business Intelligence: - Online Transaction Processing (OLTP), Online Analytical Processing (OLAP), Extract Transform Load (ETL),

Data Warehouses, Data Marts, Traditional BI, Ad-hoc Reports, Dashboards, Big Data BI, Traditional Data Visualization, Data Visualization for Big Data. **Big Data Storage Concepts: -** Clusters, File Systems and Distributed File Systems, NoSQL, Sharding, Replication, Master-Slave, Peer-to-Peer, Sharding and Replication, Combining Sharding and Master-Slave Replication, Combining Sharding and Peer-to-Peer Replication, CAP Theorem, ACID, BASE.

UNIT-IV

Big Data Processing Concepts: - Parallel Data Processing, Distributed Data Processing, Hadoop, Processing Workloads, Batch, Transactional, Cluster, Processing in Batch Mode, Batch Processing with MapReduce, Map and Reduce Tasks, Map, Combine, Partition, Shuffle and Sort, Reduce. **Big Data Storage Technology: -** On-Disk Storage Devices, Distributed File Systems, RDBMS Databases, NoSQL Databases, Characteristics, Rationale, Types, Key-Value, Document, Column-Family, Graph, NewSQL Databases, In-Memory Storage Devices, In-Memory Data Grids, Read-through, Write-through, Write-behind, Refresh-ahead, Quantitative and Qualitative Analysis, Statistical Analysis, Correlation, Regression.

Text Book: -
1. Beginners Guide for Data Analysis using R Programming, Jeeva Jose, KhannaPubli.
2. Data Analytics, Maheshwari, McGraw

Reference Book: -
1. Big Data Fundamentals Concepts, Drivers & Techniques. By-Thomas Erl, Wajid Khattak, and Paul Buhler
2. Big Data for Beginners: Understanding Smart Big Data, Data Mining & Data Analytics for Improved Business Performance, Life Decisions & More! By: Vince Reynolds.
3. Tom White, "Hadoop: The Definitive Guide", 3rd edition, O'Reilly Media.
4. Big Data (Covers Hadoop 2, Map Reduce, Hive, YARN, Pig, R and Data Visualization) Black Book, DT Editorial Services, Dreamtech Press.
5. BIG DATA and ANALYTICS, Seema Acharya, Subhasinin Chellappan, Wiley publications.

Paper – III

Course Code – 5DSE3   **Course Name – Block Chain Technology**

	Course Outcome
CO1	Student will be able to understand and use information about the basic concepts of Blockchain.
CO2	Students will be able to apply obtained knowledge of Blockchain to understand concepts and characteristics of ledger and Bitcoins
CO3	Students will be able learn and understand the components of Bitcoins.
CO4	Student will be able to analyse and differentiate between working of databases and Bitcoins
CO5	Student will be able to integrate ideas from Blockchain technology in their projects.

Unit-I

Blockchain Introduction, Concept of Blockchain, History, Definition, Fundamentals of Blockchain, Characteristics of Blockchain, Public, Private and Hybrid Blockchains, Ledger, Architecture of Blockchain, Transactions, Chaining Blocks, Need of Blockchain, Users of Blockchain, Advantages and Disadvantages of Blockchain.

Unit-II

Definition of Hashing, Blockchain Hash Function, Working of Hash Process, Blockchain Block Hashing, Blockchain Distributed Ledger, Bitcoin Mining, Role of Bitcoin Miners, Building of Bitcoin Block Chain, Version – Currency, Smart Contracts, Dapps. Smart Contracts- Definition, Concept, Benefits, Characteristics, Key to Trust and Security.

Unit-III

Bitcoin – Introduction, Basic Components of a Bitcoin, Working of Bitcoin, Bitcoin Chain, Bitcoin Concepts – Disintermediated, Distributed, Decentralized, Trustless, How Bitcoin Works, Blockchain Key Areas, Cryptocurrency, Decentralized Autonomous Organization – DAO, Working of DAO, Blockchain Limitation, Blockchain Bitcoin Cash, Blockchain Proof of Work

Unit-IV

Advantages of Database, Blockchain Vs Database, Who Sets the Bitcoin Price, Bitcoin Concepts – Wallet, Address, Public and Private Keys, Get and Spend Bitcoins, Sending and Receiving Bitcoin, Ethereum 2.0 – Introduction, Version, Smart Contracts, Deployment of Smart Contracts, Security, Blockchain in Insurance – Use Case of Blockchain in Health Insurance.

Text Book

1. Blockchain Technology Concepts And Applications by Kumar Saurabh, Ashutosh Saxena, Wiley
2. The Basics of Bitcoins and Blockchains- Antony Lewis

Reference Book

1. The Fundamentals of Blockchain Technology (English, Paperback, Saurabh Jain)
2. Blockchain Basics: A Non-Technical Introduction in 25 Steps - Daniel Drescher

Course Code – 5DSE3   **Course Name – Software Project Management**

Course Outcome	
CO1:	The Students will be able to understand the roles and responsibilities of a Project Manager. The Students will be able to apply various project-scheduling techniques.
CO2:	The Students will be able to relate to various Software Testing Strategies. The Students will be able to differentiate between Unit Testing and Integration Testing.
CO3:	The Students will be able to judge overall Project Risk. The Students will be able to design a Risk Table.
CO4:	The Students will be able to interpret the cost of quality. The Students will be able to understand Formal Technical Reviews.

Unit-I

Introduction to Software Project Management - The Management Spectrum, Project Manager- Role & Responsibilities, Project Estimation- Introduction, Decomposition Techniques- Software sizing, Problem Based Estimation, LOC Based, Concepts, FP Based estimation, Project Scheduling – Basic Concepts, Project Scheduling, Effort Distribution, Defining a task network- CPM/PERT, Gantt Chart.

Unit-II

Software Testing Strategies - A strategic approach to software testing- verification & Validation. Test Strategies for conventional software – Unit Testing, Integration Testing. Test Strategies for object- oriented software – Unit Testing Integration Testing. Validation Testing –Test Criteria, Configuration Review, Alpha & Beta Testing. System Testing – Recovery, Security, Stress & Performance Testing. The Art of Debugging- the Debugging process, Debugging strategies, correcting the errors.

Unit-III

Risk Management - Introduction, Software risks, Risk Identification- Assessing overall project risk, Risk Components & Drivers, Risk Projection- Developing a risk table, Assessing

Risk Impact. Risk Refinement. Risk Mitigation, Monitoring and Management. The RMMM Plan.

Unit-IV

Quality Management - Quality Concepts – Quality, Quality Control, Quality assurance, Cost of Quality. Formal Technical Reviews- the Review Meeting, Review reporting & record keeping, Review guideline. Software Reliability – Measure of software reliability & Availability, Software Safety.

Reference Books

1) System Analysis and Design, Elias M.Awad, Galgotia Publication.
2) Software Engineering, Roger S. Pressman, A Practitioner's Approach, McGraw-Hill.
3) System Analysis and Design, FitzAng Gery Gerald, Galgotia Publication.
4) System Analysis and Design Methods, By Whitten, Bentley Dittman, McGraw-Hill.
5) System Analysis Design & MIS, V.K.Khanna, Khanna Book Publishing, New Delhi.

Paper – I

Course Code – 6SE1   **Course Name – Web Technology and Multimedia**

	Course Outcome
CO1	Students will have basic knowledge of Web basics, Internet protocols and web services.
CO2	Students will demonstrate the understanding of HTML5, DHTML and XHTML.
CO3	Students will be able to differentiate between the uses of XML, DTD and DOM platforms.
CO4	Students will showcase the ability to use different multimedia tools.
CO5	Students will demonstrate the ability to use communication and multimedia technology for any business.

UNIT - I

Web Basics: Internet, Intranet, WWW, Static and Dynamic Web Page; Web Browsers; Web Servers; Client Server Architecture: Single Tier, Two-Tier, Multi-Tier; **Internet protocols**: HTTP, POP, SMTP, FTP,TCP/IP, PPP, SFTP, TELNET, POP3, ICMP, UDP, IMAP; Working of different internet protocols ,Web Architecture, Web Standards, **HTTP**: HTTP Request and Response; Domain names, IP Address, URL, Client Side Scripting, Server Side Scripting, **Web Services** : features ,advantages ,functions ,components & working of web services; Domain name and hierarchy, domain name registration process, web hosting; Web Design: Web site design principles, planning the site and navigation.

UNIT - II

Introduction to HTML5 : New features of HTML5, HTML5 Doc Type, HTML5 Structure; Tags- nav, section, article, aside, header, footer; HTML5 Form Elements- Search, tel, url, email, number and range; HTML5 Media tags - Audio and video. **DHTML :** Meaning , Components of Dynamic HTML, Uses of DHTML, Features of DHTML, Advantages of DHTML , Disadvantages of DHTML ,Difference between HTML and DHTML, DHTML Events **XHTML** : Meaning ,features ,advantages ,use ,events ,difference between HTML & XHTML

UNIT - III

XML: Meaning , XML Tree , XML syntax , XML elements , XML Attributes, XML namespaces, XML Display ,XML Parser , XML DOM , XML DTD, Uses of XML, simple XML, XML key components, DTD and Schemas, Well formed, using XML with application. XML, XSL and XSLT. **DTD:** Meaning ,Building blocks ,Elements ,Attributes ,Entities **DOM :** Nodes, accessing ,Node List

UNIT - IV

Multimedia: Concept , Hardware for Multimedia Computer - The CPU , The Monitor, Input-Output Devices , CD-ROM, Sound Card ; Software for Multimedia ; Components of Multimedia **Multimedia: Design, Production and Distribution**: Planning/Design of Multimedia, Production of Multimedia , Distribution of Multimedia **Application Areas for Multimedia** : Entertainment ,Edutainment , Business Communications , Knowledge Transfer , Public Access **Communication Technology And Multimedia Services**: Basic Television Services , Interactive entertainment ,Digital Audio ,Video on demand , Home shopping, Financial transactions , Interactive single and multiuser games , Digital multimedia libraries, Electronic versions of newspapers, magazines etc.; **Multimedia in Business**: Voice Mail ,Electronic Mail , Multimedia based FAX **Office Needs**: Audio conferencing ,Video conferencing, Document conferencing.

Text Books:
1. HTML5 Step by Step Faithe Wempen Microsoft Press 2011.
2. Head First HTML 5 programming Eric Freeman O'Reilly 2013.
3. Web Technology by R. N. Srivastava 2015.
4. Multimedia and Web Technology by Vishnu Prasad 2018.

Reference Books:
1. Web Technology: A Developer's Perspective by J. Akilandeswari and N. P. Gopalan 2014.
2. Web Technologies and Applications by Sammulal Porika and Peddi Kishor 2015.

Course Code – 6SE2   **Course Name – Entrepreneurship Skill Development**

	Course Outcome
CO1	Students will be able to **differentiate** between Entrepreneur and Intrapreneur and will be able to **delineate** the evolution of the concept of Entrepreneur.
CO2	Given information on Agri Entrepreneurship student will be able to identify and differentiate between affecting factors and motivational factors of it
CO3	Students will be able to **list** the various economic and non – economic factors influencing the emergence and development of Entrepreneurship in the country and be able to **define** the concept of EDP,
CO4	Students will be able to **define** Small enterprises and **list** their essential Characteristics. They will be able to **Highlight** relationship between small and large units and **identify** the specific problems faced by SSI's.

UNIT – I
Entrepreneur: Introduction, Evolution of the concept of Entrepreneur, Characteristics of successful Entrepreneurs, The charms of becoming Entrepreneur, The Entrepreneurial decision process, Functions of Entrepreneur, Need of Entrepreneur, Types of Entrepreneurs, Distinction between an Entrepreneur and a Manager, Intrapreneur, social Entrepreneur.
Entrepreneurship: Concept of Entrepreneurship, Growth of Entrepreneurship in India, Role of Entrepreneurship in economic development. Types of Entrepreneurship, Family Business

UNIT - II
Agri-Preneurship: Introduction, Need for developing Agri-Preneurship in India, Opportunities for developing Agri-Preneurship, Challenges involved in developing Agri-Preneurship. **Factors affecting Entrepreneurship growth:** Factors affecting Entrepreneurship, Government Actions. **Entrepreneurial Motivation:** Meaning of Entrepreneurial Motivation, Motivational Cycle or Process, and Theories of Entrepreneurial Motivation. **Entrepreneurial Competencies:** Meaning of Entrepreneurial Competency, Major Entrepreneurial Competencies, Developing Entrepreneurial Competencies.

UNIT - III

Entrepreneurship Development Programmes (EDPs): Meaning of EDP, Need of EDPs, Objectives of EDPs, Entrepreneurship Development Programmes in India: A Historical Perspective, Course contents and curriculum of EDPs, Phase of EDP, Evaluation of EDPs, and Problems of EDPs. **Micro and small enterprises:** Small enterprise: Meaning & Definition, Essentials, features & Characteristics, Relationship between Micro and Macro enterprises, Rationale behind Micro & small enterprises, Role of Micro enterprise in economic development, Package for promotion of Micro and Small-scale enterprise. **Formulation of Business Plans:** Meaning of business plan, Contents of business plan, Significance, Formulation of business plan, Network Analysis, Common Errors in business plan formulation.

UNIT - IV

Project Appraisal: Concept of Project Appraisal, Methods of Project Appraisal, and Environmental clearance of SMEs. **Financing of Enterprise:** Meaning and need for financial planning, Source of Finance, Capital Structure, Capitalization, Term Loans, Sources of short-term Finance, Venture Capital, Export Finance. **Forms of business Ownership:** Sole Proprietorship, Partnership, Company, Cooperative, And Selection of an appropriate form of ownership structure, **Institutional Finance of entrepreneurs:** Need for institutional finance, Institutional Finance. **Institutional Support to Entrepreneurs:** Need for institutional support, Institutional Support to small Entrepreneurs.

Text Book-
1. Dr. S. S. Khanka, Entrepreneurial Development, S. Chand.(Reprint 2016)

Reference Books
1. Robert D. Hisrich, Mathew J. Manimala, Michael P. Peters, Dean A. Shepherd, Enterpreneurship, McGraw-Hill.
2. CA Dr. AbhaMathur, Business Entrepreneurship and Management, Taxmann.
3. Charles E. Bamford, Garry D. Bruton, Enterpreneurship – A Small Business Approach, McGraw-Hill.

Course Code – 6GE3   **Course Name – Digital Marketing**

	Course Outcome
CO1	Students will be able to showcase the basic knowledge of digital marketing
CO2	Students will demonstrate the ability to use Search engine optimisation
CO3	Students will be able to apply the obtained knowledge of email marketing and social media marketing
CO4	Students will be able to understand functioning of ecommerce website
CO5	Students will be able to differentiate between different internet marketing elements

UNIT-I

Introduction to Digital Marketing-Types of Digital Marketing, Trends of the Digital Marketing Industry, Importance of digital marketing, Difference between traditional and Digital Marketing. **Planning and Creating a Website**-Brand awareness, and delivery among consumers, how to create a website, adding content, incorporate design and other elements into the website

UNIT-II

Search Engine Optimisation-SEO, History & Growth of SEO, on-Page Optimization Off-Page Optimization, Keywords, Google AdWords. **Social Media Marketing**-Definition of Social Media Marketing & Social Media, Blogging, Social Networking, Video Creation & Sharing, Use of Different Social Media Platforms, Content Creation.

UNIT-III

Importance of Email Marketing-Basics of Email Marketing, Email Marketing Strategy and planning, Email Campaign design and execution. **Search Engine Marketing-**Introduction to SEM, Campaign Creation, Ad Creation, Site Targeting Keyword Targeting

UNIT-IV

E-Commerce-Management of e-commerce Store, Product Keyword Research Supply Chain management, Uploading Products to the Website Selling, Packaging & Shipping. **Internet**

Marketing-Introduction & Advantages of Internet Marketing in Business, Optimization of Business Site and Market Featured Products, Blogs & Opinion, Importance of Branding.

Text Book: -
1. Digital Marketing for Dummies, By Ryan Deiss & Russ Henneberry
2. Jab, Jab, Jab, Right Hook, By Gary Vaynerchuk
3. Building a StoryBrand: Clarify Your Message So Customers Will Listen, By Donald Miller
4. Digital Marketing Strategy: An Integrated Approach to Online Marketing, By Simon Kingsnorth.
5. Epic Content Marketing: How to Tell a Different Story, Break Through the Clutter, and Win More Customers by Marketing Less, By Joe Pulizzi.
6. The Art of SEO: Mastering Search Engine Optimization, By Eric Enge, Jessie Stricchiola, Stephan Spencer.
7. New Rules of Marketing and PR, By David Meerman Sc.

Course code – 6GE3   Course Name – Company Law and Secretarial Practice

	Course Outcome
CO1	Given basic information on Indian Companies Act 2013 student will be able to define and understand the provisions and classification of company.
CO2	Given information on procedure for incorporation student will be able to identify the legal terminologies and formalities while incorporation of company.
CO3	Given information on primary source of finance generation by the company student will be able to differentiate and illustrate, shares , debentures etc
CO4	Given information on Secretary student will be able to define the role of secretary in all operations of the company

Unit - I

Company and its Nature and Scope - Meaning, Definition and characteristics of company. Historical background of company law in India, Companies Act 2013, landmark provisions of the Act, Classification of companies, Lifting the corporate veil.

Unit – II

Procedure for Incorporation of companies - Role of promoters, Legal Position of Promoter, functions and liabilities of a promoter, Registration and incorporation of a company, Merits and Demerits of Incorporation of company - Memorandum of Association - Meaning, Purpose, Contents, clauses Ultra vires and Doctrine of Ultravires. Articles of Association - Meaning Purpose, Content. Alteration, Doctrine of Constructive Notice. Distinction between the Memorandum and Articles, Doctrine of Indoor management. Meaning - Formalities of issue Prospectus - Misrepresentation of Prospectus - Golden Rule **Amalgamation and winding up - ** Merger and Demerger of Company, Amalgamation, Winding up of a Company, Payment of Liabilities in the event of winding up, Role of Official Liquidator, Court and National Company Law Tribunal.

Unit - III

Shares, Debentures and Company Meetings - Shares - Meaning, Types of Shares and Transfer of shares, price of issue of shares. Share Capital, Meaning, Kinds, Alteration, Reduction and Voting Rights, Global Depository receipts, Sweat Equity shares, bonus shares, buyback of shares. Share Certificate. Debenture - Meaning, Types, Charge-Fixed and Floating, Crystallization of Floating charge. **Company Meetings:-** Annual General Meetings, Extraordinary General Meetings, Persons Entitled To Call EGM, Notice,

Unit - IV
Secretary :- Definition, need and importance, Appointment and dismissal, Work, duties, rights and liabilities, Memorandum of association and secretary, Articles of association and secretary, Prospectus and secretary. **Directors Position, Appointment And Removal: -** Definition Of Directors, Position Of Director In A Company, Composition Of Board Of Directors, Methods and Provisions As To Directors Appointment, Appointment/Reappointment Of Rotational Directors, Director Identification Number, Disqualifications For Director, Vacation Of Office Of Director, Resignation Of Director, Removal Of Directors

Book Recommended:
1. C.A.Kamal Garg, Bharat's Corporate and Allied Laws, 2013
2. Institute of Company Secretaries of India, Companies Act 2013, CCH Wolter Kluver Business, 2013

QUESTION PAPER PATTERN
First / Second / Third / Fourth / Fifth / Sixth Semester
Bachelor of Commerce (Computer Application)- (BCCA)NEW OB & CBCS Examination

Semester – I – Fundamentals of Computers

Semester – II - Principles of Business Management, Database Management system, E-Commerce and Web Designing,

Semester – III – Business Studies, CSS & Java Script

Semester – IV- Business Economics, Business Law & Cyber Security, Research Methodology, Cloud Computing, AI & ML, MIS, PHP & MySQL

Semester – V – Python

Semester – VI – Web Technology and Multimedia, Entrepreneurship Skill Development, Digital Marketing, Company Law and Secretarial Practice

Time: 3 Hours   **Total Marks: 80**

N. B. - a) Draw well labeled diagram wherever necessary.

b) All questions are compulsory.

Q1.   **8 x 2 = 16**

         N. B. – 1. Each question carries two marks.

         2. Answers should not more than five lines.

              A.   Unit I

              B.   Unit I

              C.   Unit II

              D.   Unit II

              E.   Unit III

              F.   Unit III

              G.   Unit IV

              H.   Unit IV

Q2.   **8 x 3 = 24**

N. B. – 1. Each question carries three marks.

2. Answers should not more than ten lines.

    A.   Unit I

    B.   Unit I

    C.   Unit II

    D.   Unit II

    E.   Unit III

    F.   Unit III

    G.   Unit IV

    H.   Unit IV

N. B. – 1. Each question carries five or ten marks.

2. Answers should not more than 250 words for 5 marks questions and 600 words for 10 Marks questions respectively.

Q3. **Either**

(A) 5   Unit I

(B) 5   Unit I

OR

(C) 10   Unit I

Q4. **Either**

(A) 5   Unit II

(B) 5   Unit II

OR

(C) 10   Unit II

Q5. **Either**

(A) 5   Unit III

(B) 5   Unit III

OR

(C) 10   Unit III

Q6. **Either**

(A) 5   Unit IV

(B) 5   Unit IV

OR

(C) 10   Unit IV

QUESTION PAPER PATTERN
First / / Third / / Fifth / Semester
Bachelor of Commerce (Computer Application)- (BCCA) OB & CBCS Examination

BCCA NEW SEMESTER – I

1CC2	MS Office (IT)	Total 50 MCQ of 2 marks each. (Minimum 10 MCQ on each Unit) (Total marks : 100)
1GE4	Professional Ethics and Human values ÓR Personal Wellbeing	

BCCA NEW SEMESTER – III

3AE1	Environmental studies & Community Engagement	Total 40 MCQ of 2 marks each. (10 MCQ on each Unit) (Total marks : 80)
1GE4	Ethical Hacking OR Computer Network OR Content Writing & Analysis	Total 50 MCQ of 2 marks each. (Minimum 10 MCQ on each Unit) (Total marks : 100)

BCCA NEW SEMESTER – V

5AE2	Internet of Things	Total 40 MCQ of 2 marks each. (10 MCQ on each Unit) (Total marks : 80)
5DSE3	Big Data OR Block chain technology OR Software Project Management	Total 50 MCQ of 2 marks each. (Minimum 10 MCQ on each Unit) (Total marks : 100)