SHIVAJI UNIVERSITY, KOLHAPUR - 416004,
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शिवाजी विद्यापीठ, कोल्हापूर - ४१६००४, महाराष्ट्र
दूरध्वनी - इंपीएबीएक्स - २६०९०००, अभ्यासमंडळे विभाग दुरध्वनी विभाग ०२३१-२६०९०९४

Estd. 1962
"A++" Accredited by NAAC(2021)
With CGPA 3.52

Ref. No.:- शिवाजी वि./अमं /242 *Date:-* १२/१०/ २०२३

प्रति,

1. मा.प्राचार्य/संचालक,
   सर्व संलग्नित महाविद्यालये/मान्यताप्राप्त संस्था,
   शिवाजी विद्यापीठ, कोल्हापूर
2. मा. अध्यक्ष व सदस्य,
   सर्व अभ्यास/अस्थायी मंडळे
   शिवाजी विद्यापीठ, कोल्हापूर

विषयः राष्ट्रीय शैक्षणिक धोरण, 2020 नुसार शैक्षणिक वर्ष, 2024-25 (NEP-2.0) पासून लागू करावयाच्या बी.सी.ए. पद्वी अभ्यासक्रमाचा आराखडा, नियमावली व अभ्यासक्रमाबाबत

संदर्भ :- शासन निर्णय उच्च व तंत्र शिक्षण विभाग क्र. एनईपी-2022/प्र.क्र.09/विशि-3 शिकाना दि. 20 एप्रिल, 2023

महोदय/महोदया,

उपरोक्त विषय संदर्भीय शासन आदेशानुसार कळविले आहे की, राष्ट्रीय शैक्षणिक धोरण, 2020 ची राज्यातील अंमलबजावणीच्या अनुषंगाने उपरोक्त संदर्भिय शासन आदेश व विद्यापीठ अधिकार मंडळाच्या निर्णयानुसार शैक्षणिक वर्ष, 2024-25 (NEP-2.0) पासून बी.सी.ए. पद्वी अभ्यासक्रमाचा आराखडा, नियमावली व अभ्यासक्रम लागू करावयाचा आहे. (तो सोबत जोडला आहे.)

उपरोक्त आराखडा, नियमावली व अभ्यासक्रमामध्ये काही सुचना असल्यास संबंधित अभ्यास/अस्थायी मंडळाच्या अध्यक्षांना **दिनांक 31/10/2023** अखेर कळविण्यात याव्यात. त्यानुसार पुढील कार्यवाही करणे सोईचे होईल.

कळावे,

आपला विश्वासू

(डॉ. एस. एम. कुबल)
उपकुलसचिव

प्रत :

1. मा. अधिष्ठाता, वाणिज्य व व्यवस्थापन विद्याशाखा, शिवाजी विद्यापीठ, कोल्हापूर
2. मा. संचालक, परीक्षा व मूल्यमापन मंडळ
3. मा. संचालक, दूरस्थ व ऑनलाईन शिक्षण केंद्र
4. परीक्षक नियुक्ती विभाग
5. सर्व परीक्षा विभाग (ऑन)

माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी

SHIVAJI UNIVERSITY

KOLHAPUR

Estd. 1962,

NAAC "A" Grade

Faculty of Commerce and Management

Syllabus for

BCA Part I (CBCS) Sem-I & II

(Regulations in accordance with National Education Policy to be implemented from Academic Year 2024-25)

(Subject to the modifications that will be made from time to time)

Shivaji University, Kolhapur
Bachelor of Computer Applications (BCA)
Draft CBCS Course Structure to be implemented from June 2024
Syllabus

1. Introduction:

Bachelor of Computer Application (4years) program / degree is a specialized program in Computer Applications. It builds the student on studies in applied use of computers and to become competent in the current race and development of new computational era.

The duration of the study is of eight semesters, which is completed in four years. The program is based on Choice-Based Credit System (CBCS) comprising 176 credit points and intake for one batch is not more than 80 students.

2. Objective:

BCA offers the prequalification for professionals heading for smart career in the IT field, which measures up to international standards. On completing this course one can do higher studies such as MCA, MBA etc., in any UGC recognized universities or in any other reputed institution in India or abroad.

1. Eligibility: Candidate should have passed standard XII (10+2) in any stream or government approved equivalent diploma in Engineering/ Technology from any recognized Board or Vocational stream or Rules under the National Education Policy and the rules extended by University regarding eligibility will be applicable.

A candidate who has completed qualifying qualification from any Foreign Board / University must obtain an equivalence certificate from Association of Indian Universities (AIU) or competent body in India.

2. PEO, PO and CO Mappings:

Program Educational Outcomes: After completion of this program, the graduates /students would:

PEO I	Technical Expertise	Implement fundamental domain knowledge of core courses for developing effective computing solutions by incorporating creativity and logical reasoning.
PEO II	Successful Career	Deliver professional services with updated technologies in Computer application based career.

PEO III	Interdisciplinary and Life Long Learning	Develop leadership skills and incorporate ethics, team work with effective communication & time management in the profession. Undergo higher studies, certifications and technology research as per market needs.

Program Outcomes (PO's):- After completion of program Students / graduates will be able to:

PO1: Apply knowledge of ICT in solving business problems.
PO2: Learn various programming languages and custom software.
PO3: Design component, or processes to meet the needs within realistic constraints.
PO4: Identify, formulate, and solve problems using computational temperaments.
PO5: Comprehend professional and ethical responsibility in computing profession.
PO6: Express effective communication skills.
PO7: Recognize the need for interdisciplinary, and an ability to engage in life-long learning.
PO8: Knowledge of contemporary issues and emerging developments in computing profession.
PO9: Utilize the techniques, skills and modern tools, for actual development process.

Course Outcome(s): Every individual course under this program has course outcomes (CO). The course outcomes rationally match with program educational objectives. The mapping of PEO, PO and CO is as illustrated below:

Program Educational Objectives	Thrust Area	Program Outcome	Course Outcome
PEO I	Technical Expertise	PO1,PO2,PO3,PO9	All Core and Lab courses
PEO II	Successful Career	PO4,PO5,PO6	All AEC courses
PEO III	Interdisciplinary and Life Long Learning	PO7,PO8	All Electives

3. **Workload (Period/Lectures for each Course):** For every semester 60 periods (60 minutes per period) are allotted to complete the syllabus of each Course of four credit.(Subject).

4. Standard of Passing**:** Rules under the National Education Policy and the rules extended by University regarding ATKT will be applicable

Gradation Chart:

Marks obtained	Numerical Grade (Grade Point)	CGP A	Letter Grade
Absent	0(Zero)		
<40	0 to 4	0.0 to 3.99	Fail
40-50	5	4.00 to 4.99	C
51-60	6	5.00 to 5.99	B
61-70	7	6.00 to 6.99	B+
71-80	8	7.00 to 7.99	A
81-90	9	8.00 to 8.99	A+
91-100	10	9.00 to 10.00	O(outstanding)

Note: i) Marks obtained > = 0.5 shall be rounded off to next higher digit.
ii) The SGPA & CGPA shall be rounded off to 2 decimal points.

Calculation of SGPA & CGPA

1. Semester Grade Point Average (SGPA) SGPA = Course credits x Grade Points obtained of a semester Course credits of respective semester

2. Cumulative Grade Point Average (CGPA) CGPA = Total credits of a semester x SGPA of respective semester of all semesters Total course creditsof all semesters

7. Re-entry or Lateral Entry: Students, opting for exits at any level, will have the option to re- enter the programme from where they had left off, in the same or in a different higher education institution within three years of exit and complete the degree programme within the stipulated maximum period of seven years from the date of admission to first year UG. Re-entry at various levels for lateral entrants in academic programmes shall be based on the earned and valid credits as-deposited and accumulated in the Academic Bank of Credits (ABC) through Registered Higher Education Institutions (RHEI) and proficiency test records. Lateral entry into the programme of study leading to the UG Certificate / UG Diploma / Three year UG Degree will be based on the validation of prior learning outcomes achieved and subject to availability based on intake capacity.

Semester, NSQF Level and Exit Points

Sr. No.	Semester	Year	Year	Credits	Level	Exit Points& Award
1	Sem. I & II	2023-24	1 Year	44	4.5	UG Certificate
2	Sem. III & IV	2024-25	2 Year	88	5.0	UG Diploma
3	Sem. V & VI	2025-26	3 Year	132	5.5	Bachelor of Computer Applications

8.Nature of Theory Question paper: a) Nature of question paper is asfollows for four credit University end semester examination

QUESTION PAPER PATTERN FOR ALL SEMESTERS

Duration: 3 Hours Total Marks – 80

Instructions:1) Que.1 and Que. 8 are compulsory and attempt any three Questions from Que. No.2 to Que. No. 7.

2) Figures to the right indicate marks.

Qu.1) Multiple Choice Questions (12 questions for 1 mark each)	12
Qu.2) Broad answer question	16
Qu.3) Broad answer question	16
Qu.4) Broad answer question	16
Qu.5) Broad answer question	16
Qu.6) Broad answer question	16
Qu.7) Broad answer question	16
Qu.8) Write notes on (Any Four out of Six)	20

b) Nature of question paper is asfollows for two credit University end semester Examination

Qu.1) Broad answer questions(Any ONE out of TWO)	16
Qu.2) Short answer questions (Any TWO out of THREE)	14
Qu.3) Write notes on (Any TWO out of FOUR)	10

9. Nature of Practical Question Paper:

There will be three questions of 15 Marks each, out of which student have to attempt any two Questions and 10 marks for journal and 10 marks for oral for 2 credit lab course and time duration is two hours.

For four credit lab course there will be four questions of 25 Marks each, out of which student have to attempt three questions and 10 marks for journal and 15 marks for oral and time duration is three hours.

Practical Examination conducted by the University appointed examiner panel. The panel members have more than five years' experience as full time teacher.

10. Medium of Instruction: The medium of instructions shall be in English.

11. Teachers Qualification:

Master degree in Computer Application with SET or NET or Ph.D. or equivalent.

12. Internal Marks Distribution

For 20 Marks

1. Ten Marks for Mid Tests.
2. Five Marks for presentation or activity based learning or Group exercise (Number of students in Group are not more than six).
3. Five Marks for Assignments.

(The record of internal submission by the students should be maintain by higher educational institute for the examination of university authority if required)

For 10 Marks

1. Five Marks for Mid Tests.
2. Five Marks for Assignments / presentation or activity based learning/ Group exercise (Number of students in Group are not more than six)/ Laboratory work/ Library work

(The record of internal submission by the students should be maintain by higher educational institute for the examination of university authority if required)

13. Mini- Project

The Objective of mini project is, to make aware student with current technology to be used in IT industry. The language/platform of the mini-project to be selected from the subject studied in previous and present semester. The Group size of maximum four students can undertake mini project. ProjectViva-Voce Examination will be conducted by the University appointed examiner panel.. The panel members have more than five years' experience as full time teacher.

14. Major Software Development Project:

The Objective of major project is to design and develop the live application with current technology to be used in various industries. The Group size of maximum three students can undertake major project. Project Viva-Voce Examination will be conducted by the University appointed examiner panel. The panel members have more than five years' experience as full time teacher. The chairman for viva voce committee will be faculty having more than ten years experience as full time faculty.

15.Fee Structure: As per University norms.

16. Requirements:

i) Core Faculty:

For First Year Sem I & Sem II - 1 Full Time Faculty and 1 Lab Assistant.
For Second Year Sem III & Sem IV - 1 Full Time Faculty.
For Third Year Sem V & Sem VI - 1 Full Time Faculty and 1 Lab Assistant.
For Fourth year Sem VII and VIII – 1 Full Time Faculty and 1 Lab Assistant
Total – 4 Full Time Faculties and
Three Lab Assistants having qualification
BCA/BCS/Diploma in Computer
Engineering/PGDCA.

In addition there shall be visiting/CHB faculty drawn from academicians /professionals from different fields for AEC/VEC/OE/VSC/SEC/CC Courses.

ii) Non-Teaching Staff: One Clerk and 2 Peons.

iii) Computer Lab: Well-equipped networked Lab with backup facility, Application and system software's as per syllabi and LL internet facility. Student Computer ratio 4:1. (As per Intake sanctioned)

iv) Library: The entire library fees collected from the students shall be invested on library.

v) Class Room: Four classrooms of seating capacity 80 students with LCD and Digital Classroom- 2.

17. a) B.C.A. Program Structure As per NEP to be implementation from Academic Year 2024-25

Level	Semester	Major		Minor	Open Elective(OE)	Vocational & Skill Enhancement Courses(VSEC): 1.Vocational Skill Course(VSC), 2.Skill Enhancement Course(SEC)	Ability Enhancement Courses(AEC),Indian Knowledge System(IKS),Value Education Courses(VEC)	Field Project(FP)/Internship/Community Engagement & Service, Co-curricular Courses(CC),Research Project(RP)	Cumulative Credit	Degree/ Cum.Credits
		Mandatory	Electives							
CREDIT DISTRIBUTION		**50% Credit of Total credit**		**18-20 Credit**	**10-12 Credit**	**VSEC(14-16) VSC=8-10 Credit SEC=6 Credit**	**AEC=8 Credit,IKS=2 Credit,VEC-4 Credit**	**FP=4-6 credit, CC=8 Credit, RP=12 credit**		
4.5	I	Mandatory(2) Fundamentals of Computer		Principles of Management(2)	OE(2) Media & Entertainment Management-I/ Marathi-I / German-I / English-I	VSC(2) Office Automation- I	AEC(2) Business Communication VEC(2) Democracy ,Election and Good Governance	CC(2) NSS / NCC / Sports/ Cultural /CEP	22	UG Certificate (40-44)
		Mandatory(4) Introduction to Programming Using C					IKS(2) Indian Contribution to Computational Sciences			
		Mandatory(2) Lab Course-I								
	Total-Sem-I	**8**		**2**	**2**	**2**	**6**	**2**	**22**	

	II	Mandatory(2) DBMS		Mathematics For Computer Applications (2)	OE(2) Media & Entertainment Management-II/ Marathi-II/ German-II/ English-II	VSC(2) Web Technology-I	VEC(2) Constitutions of India & Local Self Govt.		22	
		Mandatory(4) Operating System		Financial Accounting (2)			AEC(2) Impression Management			
		Mandatory(2) Lab Course-II				SEC(2) Office Automation- II				
	Total-Sem-II	**8**		**4**	**2**	**4**	**4**		**22**	
Cum.Credit Sem-I & II		**16**		**6**	**4**	**2+4**	**6+4**	**2**	**44**	
Exit Option: Award of UG Certificate in Major with 40-44 credits and an additional 4 credits core NSQF course/Internship or continue with major and minor										
5.0	III	Mandatory(4) RDBMS		Minor(4) Elements of Statistics	OE(2) Human Resource Management /Entrepreneurship Development/ Ecommerce	VSC(2) Web Technology-II	AEC(2) Environmental Science-I	FP(2) Mini Project		UG Diploma (80-88)
		Mandatory(2) Software Engineering						CC(2) NSS / NCC / Sports/ Cultural /CEP		
		Mandatory(2) Lab Course-III								
	Total-Sem-III	**8**		**4**	**2**	**2**	**2**	**4**	**22**	

	IV	Mandatory(4) Object Oriented Programming Using C++		Minor(4) Data Structure Using C	OE(2) Basics of Tally / Supply chain Management /MIS	SEC(2) Web Technology-III	AEC(2) Environmental ScienceII	CEP(2) Digital Literacy/ E-Governance/ Cyber Security Awareness	22	
		Mandatory(2) Computer Network						CC(2) NSS / NCC / Sports/ Cultural		
		Mandatory(2) Lab Course-IV								
	Total-Sem-IV	**8**		**4**	**2**	**2**	**2**	**4**	**22**	
Cum.Credit Sem-III & IV		**16**		**8**	**4**	**4**	**4**	**8**	**44**	
Cumm.Credit(I,II ,III,IV)		**42**		**14**	**8**	**12**	**10**	**2**	**88**	
Exit Option: Award of UG Diploma in Major with 80-88 credits and an additional 4 credits core NSQF course/Internship or continue with major and minor										
5.5	V	Mandatory(4) Java Programmming	Elective (4) Web 2.0 / Data Wareho using and Data Mining/ Block Chain Technol ogy	Minor(2) Digital Marketin g Minor(2) ERP		VSC(2) Ethical Hacking		FP(2) Field Project		**UG Degree 120-132**
		Mandatory(4) DOT Net Technology								
		Mandatory(2) Lab Course-V								
	Total Sem-V	**10**	**4**	**4**	**-**	**2**	**-**	**2**	**22**	
		Mandatory(4)	Elective	Minor(4)				OJT(4)		

	VI	Python	(2) Internet of Things/ Android Programming/R Programming	IT Management & IT Security				Internship		
		Mandatory(4) Cloud Computing								
		Mandatory(2) Lab Course-VI	Lab Course VII (2)							
	Total Sem-VI	**10**	**4**	**4**				**4**	**22**	
Cum.Credit Sem-V & VI		20	8	8	-	2	-	6	44	
Cumm.Credit(I,II,III,IV,V,VI)		62	10	16	10	16	10	8	132	

Exit Option: Award of UG Degree in Major with 120-132 credits and an additional 4 credits core NSQF course/Internship or continue with major and minor

Level	**Semester**	**Major**		**Minor**	**Open Elective(OE)**	**Vocational Skill Course(VSC),Skill Enhancement Course(SEC)**	**Ability Enhancement Courses(AEC),Indian Knowledge System(IKS),Value Education Courses(VEC)**	**Field Project(FP)/Internship/Community Engagement & Service, Co-curricular Courses(CC), Research Project(RP)**	**Cumulative Credit**	**Degree/ Cum. Credits**
		Mandatory	**Elective**							
6.0	VII	Mandatory(4) Data Science	Elective(4) Business Intelligence/ Emerging Trends in IT/ Data Center Management/	Minor (4) Research Methodology						**UG Honours Degree 160-176**

		Mandatory(4) Advance Java								
		Mandatory(2) Big Data Management								
		Mandatory(2) Lab Course-VIII								
		Mandatory(2) Lab Course-IX								
	Total Sem-VII	**14**	**4**	**4**	**-**	**-**	**-**	**-**	**22**	
	VIII	Mandatory(4) Artificial Intelligence	Elective(4) Machine learning / Digital Forensics/ Financial Technologies					OJT(4) Internship/ Apprenticeship		
		Mandatory(4) Advance Web Technology								
		Mandatory(2) Business Analytics								
		Mandatory(2) Lab Course-X								
		Mandatory (2) Lab Course- XI								
	Total Sem-VIII	**14**	**4**	**-**	**-**	**-**	**-**	**4**	**22**	
Cum.Credit Sem VII& VIII		**28**	**8**	**4**	**-**	**-**	**-**	**4**	**44**	
Cum.Credit (I to VIII) (UG Degree with Honours)		**78**	**20**	**24**	**12**	**16**	**12**	**14**	**176**	

Level	Semester	Major		Minor	Open Elective(OE)	Vocational Skill Course(VSC),Skill Enhancement Course(SEC)	Ability Enhancement Courses(AEC),Indian Knowledge System(IKS),Value Education Courses(VEC)	Field Project(FP)/Internship/Community Engagement & Service, Co-curricular Courses(CC), Research Project(RP)	Cumulative Credit	Degree/ Cum. Credits
		Mandatory	**Elective**							
6.0	VII	Mandatory(4) Data Science	Elective(4) Business Intelligence/ Emerging Trends in IT/ Data Center Management/	Minor (4) Research Methodology				RP(4)		**UG Research Degree 160-176**
		Mandatory(4) Advance Java								
		Mandatory(2) Lab Course-VIII								
	Total Sem-VII	**10**	**4**	**4**	**-**	**-**	**-**	**4**	**22**	
	VIII	Mandatory(4) Artificial Intelligence	Elective(4) Machine learning / Digital Forensics/ Financial Technologies					RP(8)		
		Mandatory(4) Advance Database Technology								
		Mandatory(2)								

		Lab Course-IX								
	Total Sem-VIII	**10**	**4**	**-**	**-**	**-**	**-**	**8**	**22**	
Cum.Credit Sem VII& VIII		**20**	**8**	**4**	**-**	**-**	**-**	**12**	**44**	
Cum.Credit (I to VIII) (UG Degree with Honours)		**78**	**20**	**24**	**12**	**16**	**12**	**14**	**176**	

b) Evaluation Structure:

Sr. No.	Course Code	Course Category	Title of the Course	Credits	Internal	External	Total
Semester I							
1	**101**	**Major**	Fundamentals of Computer	**2**	**10**	**40**	**50**
2	**102**	**Major**	Introduction to Programming using C	**4**	**20**	**80**	**100**
3	**103**	**Major**	Lab course I	**2**		**50**	**50**
4	**104**	**Minor**	Principals of Management	**2**	**10**	**40**	**50**
5	**105**	**Open Elective(OE)**	Media & Entertainment Managem German-I / English-I	**2**	**10**	**40**	**50**
6	**106**	**VSC**	Office Automation-I	**2**	**50**		**50**
7	**107**	**AEC**	Business Communication	**2**	**10**	**40**	**50**
8	**108**	**VEC**	Democracy ,Election and Good Governance	**2**	**10**	**40**	**50**
9	**109**	**IKS**	Indian contribution to computational Sciences	**2**	**10**	**40**	**50**
10	**110**	**CC**	NSS / NCC / Sports/ Cultural /CEP	**2**	**50**		**50**
				22	**180**	**370**	**550**
Semester II							
11	**201**	**Major**	DBMS	**2**	**10**	**40**	**50**
12	**202**	**Major**	Operating System	**4**	**20**	**80**	**100**
13	**203**	**Major**	Lab Course II	**2**		**50**	**50**
14	**204**	**Minor**	Mathematics For Computer Applications	**2**	**10**	**40**	**50**
15	**205**	**Minor**	Financial Accounting	**2**	**10**	**40**	**50**
16	**206**	**OE**	Media & Entertainment Managem German-II/ English-II	**2**	**10**	**40**	**50**
17	**207**	**VSC**	Web Technology I	**2**	**10**	**40**	**50**
18	**208**	**SEC**	Office Automation II	**2**	**10**	**40**	**50**
19	**209**	**VEC**	Constitution of India and Local self-Government	**2**	**50**		**50**

20	**210**	**AEC**	Impression Management	**2**	**50**		**50**
				22	**180**	**370**	**550**
Semester III							
21	**301**	**Major**	RDBMS	**4**	**20**	**80**	**100**
22	**302**	**Major**	Software Engineering	**2**	**10**	**40**	**50**
23	**303**	**Major**	Lab Course III	**2**		**50**	**50**
24	**304**	**Minor**	Elements of Statistics	**4**	**20**	**80**	**100**
25	**305**	**OE**	Human Resource Management / Entrepreneurship Development/Ec	**2**	**10**	**40**	**50**
26	**306**	**VSC**	Web Technology II	**2**	**10**	**40**	**50**
27	**307**	**AEC**	Environmental Science –I	**2**	**10**	**40**	**50**
28	**308**	**FP**	Mini Project	**2**		**50**	**50**
29	**309**	**CC**	NSS / NCC / Sports/ Cultural / CEP	**2**	**50**		**50**
				22	**130**	**420**	**550**
Semester IV							
30	**401**	**Major**	Object Oriented Programming Using CPP	**4**	**20**	**80**	**100**
31	**402**	**Major**	Computer Network	**2**	**10**	**40**	**50**
32	**403**	**Major**	Lab Course IV	**2**		**50**	**50**
33	**404**	**Minor**	Data Structure Using C	**4**	**50**	**50**	**100**
34	**405**	**OE**	Basics of Tally / Supply chain Management /MIS	**2**	**10**	**40**	**50**
35	**406**	**SEC**	Web Technology III	**2**	**10**	**40**	**50**
36	**407**	**AEC**	Environmental Science-II	**2**	**10**	**40**	**50**
37	**408**	**CEP**	Digital Literacy/E-Governance/ Cyber Security awareness	**2**	**10**	**40**	**50**
38	**409**	**CC**	NSS / NCC / Sports/ Cultural /	**2**	**50**		**50**
				22	**170**	**380**	**550**

Semester V							
39	**501**	**Major**	Java Programming	**4**	**20**	**80**	**100**
40	**502**	**Major**	Dot Net Technology	**4**	**20**	**80**	**100**
41	**503**	**Major**	Lab Course V	**2**		**50**	**50**
42	**504**	**Elective**	Web 2.0 / Data Warehousing and Data Mining/ Block Chain Technology	**4**	**20**	**80**	**100**
43	**505**	**Minor**	Digital Marketing	**2**	**10**	**40**	**50**
44	**506**	**Minor**	ERP	**2**	**10**	**40**	**50**
45	**507**	**VSC**	Ethical Hacking	**2**	**10**	**40**	**50**
46	**508**	**FP**	Mini Project	**2**		**50**	**50**
				22	**90**	**460**	**550**
Semester VI							
47	**601**	**Major**	Python	**4**	**20**	**80**	**100**
48	**602**	**Major**	Cloud Computing	**4**	**20**	**80**	**100**
49	**603**	**Major**	Lab Course –VI	**2**		**50**	**50**
50	**604**	Elective	Internet of Things/Android Programming/R Programming	**2**	**10**	**40**	**50**
51	**605**	Elective	Lab Course VII	**2**	**10**	**40**	**50**
52	**606**	Minor	IT Management & IT Security	**4**	**20**	**80**	**100**
53	**607**	OJT	Internship	**4**	**20**	**80**	**100**
				22	**100**	**450**	**550**
Semester VII							
54	**701**	Major	Data Science	**4**	**20**	**80**	**100**
55	**702**	Major	Advance Java	**4**	**20**	**80**	**100**
56	**703**	Major	Big Data Management	**2**	**10**	**40**	**50**
57	**704**	Major	Lab Course VIII	**2**		**50**	**50**

58	**705**	Major	Lab Course –IX	**2**		**50**	**50**
59	**706**	Elective	Business Intelligence/ Emerging Trends in IT/ Data Center Management/	**4**	**20**	**80**	**100**
60	**708**	Minor	Research Methodology	**4**	**20**	**80**	**100**
				22	**90**	**460**	**550**
Semester VIII							
61	**801**	Major	Artificial Intelligence	**4**	**20**	**80**	**100**
62	**802**	Major	Advance Database Technology	**4**	**20**	**80**	**100**
63	**803**	Major	Business Analytics	**2**	**10**	**40**	**50**
64	**804**	Major	Lab Course X	**2**		**50**	**50**
65	**805**	Major	Lab Course XI	**2**		**50**	**50**
66	**806**	OE	Machine Learning/Digital Forensics/Financial Technologies	**4**	**20**	**80**	**100**
67	**807**	OJT	Internship	**4**	**20**	**80**	**100**
				22	**90**	**460**	**550**

c) Credit Distribution

		4 Year Degree Programme		
Sr. No.	**Course**	Courses	Credits	**%**
		(4 Year)	**(4 Year)**	
1	Major	28	80	65
2	VSC	4	8	
3	IKS	1	2	
4	OJT	2	8	
5	FP	2	4	
6	Electives	4	12	
7	Minor	9	26	15
8	OE	5	12	7
9	SEC	2	4	2
10	AEC	4	8	5
11	VEC	2	4	2
12	CEP	1	2	1
13	CC	3	6	3
	Total	**67**	**176**	**100**

18 Syllabus:

BCA I (Sem I)

Course Code: 101	Fundamentals of Computer	Credits: 02	Marks : 50 (Internal -10 External -40)
Course Outcomes	After completion of this course, the students will be able to- 1. Understand basic concepts of computers and peripheral devices. 2. To understand Number systems and logic gates.		

Unit No.	Descriptions	No. of Periods
I	**Introduction to Computers & Peripheral Devices :** Introduction to computer, Characteristics of Computers, Block diagram, functions and components of computer, History of computers, Applications of computer, Types of computers, Types of Programming Languages: Machine Languages, Assembly Languages and High Level Languages, Introduction to software, Types of software. Peripheral Devices: Input Devices –Keyboard, Touch screen, Mouse, digitizer, Joystick and scanning devices- OMR, OCR, and MICR. Output Devices – Monitors, Projector, Printers & its types, Plotters. Memory Devices - Primary Memory & its types (RAM, ROM), Secondary memory & its types (Hard Disk, Magnetic Tape, Optical Discs- CD, DVD).	15
II	**Number Systems and Logic Gates**: Number System - Decimal, Binary, Octal & Hexadecimal, Conversion from One base to another base. Computer Codes - : BCD, EBCDIC, ASCII. Logic gates & truth tables- AND, OR, NOT, NAND,NOR.	15
	Books Recommended: 1. Computer fundamentals by Rajaraman 2. Computer fundamentals by P.K.Sinha and Priti Sinha 3. Computer fundamentals, Architecture and Organization by B. Ram 4. Computer Today – Basandara	

Course Code: 102 Introduction to Programming using 'C'	Credits: 04	Marks : 100 (Internal-20 External-80)

Course Outcomes After Completion of this course the student will be able to -

1. Able to implement the algorithms and draw flowcharts for solving Mathematical problem.
2. Ability to design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage.
3. Able to define data types and use them in simple data processing applications also he/she must be able to use the concept of array of structures and file Handling.
4. Develop confidence for self education and ability for life- long learning needed for computer language.

Unit No.	Descriptions	No. of Periods
I	Basics of Programming and Ubuntu OS • Basics of Linux Operating System(Ubuntu) and 'C' programming language • Problem definition, problem analysis, Algorithms, flow chart, Debugging, Types of errors in programming, Documentation. • Introduction to GCC Compiler, • Data Types, Variable Declaration, Input/output Statement, Built- In Standard Library, C Program Structure, Vim Editor, writing the First 'c' Program, Compilation and Execution of C Program, Format Specifies and Escape Sequences.	15
II	Control Statements and Arrays • Branching Statements -Introduction, if statement, if-else statement, Nested If-else, Switch case statement. • Definition of Loop. • Types of looping statement. • Difference between while loop and do—while Loop, • Loop control Statement (break, continue),. • Infinite Loop. • Definition and declaration of array. • features of Array • Types of Arrays • Initialization of array • Memory representation of array. • Single Dimensional Array, • Two Dimensional Array, • Predefined String functions.	15

III	Functions and Pointers • Definition, declaration, prototype of function • Local and global variable, • User defined functions • Recursion, Storage classes. • Pointer Definition and Declaration, • Pointer Initialization, • Pointer arithmetic. • Arrays of Pointers, • Pointers and One and two dimensional Arrays, • Call by value and call by reference • Dynamic Memory Allocation	15
IV	Structures and File Handling • Definition and declaration of structure, • Nested Structure, Array of structures, structure pointer, • passing structure to function, self- referential structure, • Definition and declaration, of union • Difference between Structure and Union • Concept of File ,Text and binary mode files, Opening and closing files-fopen() and fclose(), • File opening mode- read, write, append ,reading and writing string function gets(),puts(), getw(),putw(). Formatted input, output-fscanf().fprintf(),fseek(), rewind(), ftell().	15
	Books Recommended: 1. The C Programming Language- By Brian W Kernighan and Dennis Ritchie 2. C Programming by E. Balgurusamy. 3. The GNU C Programming Tutorial -By Mark Burgess 4. Let us C- By Yashwant Kanetkar	

Course Code: 103	Lab Course I	Credits: 02	Marks : 50 (External -50)
Course Outcomes	After completion of this course students will be able to – 1. Understand and trace the execution of programs written in C language. 2. Implement control statements, pointers, arrays, functions and file handling in program.		
Unit No	**Descriptions**		**No. of Periods**
I	1. Write a program to accept 5 subject marks and calculate total marks, percentage and grade of student. 2 Write a program to input a number and find the given number is Odd or Even. 3 Write a program to input the day number and display day of week. 4 Write a program to find the sum of first n natural numbers. 5 Write a program which display triangle patter of alphabets 6 Write a program to accept the range and generate Fibonacci Series. 7 Write a program to find given number is Armstrong or not. 8 Write a program to find prime numbers between given range 9 Write a program to sort the numbers in ascending and descending order using array. 10 Write a program to add two Matrices; Use two Dimensional arrays 11 Write a program to find the product of given two matrices. 12 Write a function which adds three number and display output on the screen. 13 Write a function which calculate cube of given number. 14 Write a program which swap two number using a) call by value and b)call by reference. 15 Write a program which create student structure which accept- stud rollno ,student name, address ,subject marks ,percentage and display same on screen. 16 Write a program to separate even and odd numbers available in file. 17 Write a program to count the no. of words in a given text file. 18 Write a program to remove blank lines from a file. 19 Write a program to copy content of one file into another file. 20 Write a file handling program which accept student information store it into disk file using binary mode		30

Note- Practical exam. will be conducted by experts appointed by Shivaji University, Kolhapur.
Marks distribution: Total marks -50

1. Ten marks (10) reserved for Journal
2. Ten marks (10) are reserved for Via-voce
3. There will be 3 questions out of which solve any two questions, each question carries 15 marks (15 X 2=30).

Course code: 104	Principles of Management	Credit :02	Marks:50 (Internal -10 External -40)

Course Outcomes	After completion of this course student should be able - 1. To understand the concept of management. 2. To understand leadership and motivational theories.	
UNIT No.	**Description**	**No. of Periods**
I	**Management Perspectives** **A. Introduction to Management**: Concept of Management, nature and importance of management, Functions of Management, Levels of management, Contribution of F.W. Taylor, Henry Fayol . **B. Functions of Management:-** **Planning**: Meaning, Definition & Planning Process. **Organising**: Meaning, Definition & Types of Organisations. **Staffing**: Meaning Definition & Functions **Directing**:. Meaning Definitions & Techniques **Controlling:** Meaning, Steps &Techniques of controlling.	**15**
II	**Leadership and Motivation** : **Leadership**: Meaning & Definition, styles of Leadership, Qualities of Leadership **Motivation**: Meaning, definition & importance of motivation, Theories of motivation –Maslow's Hierarchy Theory, Herzberg's theory & Theory X & Y	**15**
	Books Recommended: 1 Principles of Management : T. Ramasamy 2. Management Concepts and Practices : Dr. Manmohan Prasad 3. Principles of Management- P. Subba Rao 4. Management –L.M.Prasad 5. Essential of Management by Kncotz & O' Donnel.	

Course code: 105	MEDIA AND ENTERTAINMENT MANAGEMENT-I
Course Outcomes	After completion of this course, students will be able to: 1. Demonstrate types of communication and the communication process. 2. Compare the types of media and their role in Society and Democracy.

Hours of Teaching: 30	Lecture /Week : 02	Credit Points: 02
Marks : 50	External : 40	Internal : 10

Syllabus Contents:

Unit: I	**Basics of Communication** Communication and its Importance, Process of Communication (Source, Sender, Channel, Massage, Noise, Receiver, Destination), Types of Communication: Intrapersonal, Interpersonal, group and Mass Communication. Media as a part of mass communication, Role of Media in Society and Democracy, Media and Mass Media, Functions of Mass Media	15 Hours
Unit: II	**Understanding Media** Types of Mass Media: Traditional Media, Print Media, Electronic Media, Web/Digital Media. Media ethics, Introduction Entertainment Industry: Entertainment Industry: An Overview; Indian M&E Sectors: Television, Digital Media, Filmed Entertainment, Online Gaming, Animation and VFX, Live Events, OTT Platforms, Music, and Radio.	15 Hours

Reference Books:

1. Kumar Keval J, 'Mass Communication in India', Jaico publication, Mumbai.
2. Thakur Kiran, Handbook of Print Journalism, MLC University of Mass communication & Journalism Bhopal
3. Narula Uma, 'Mass Communication -Theory and Practice', Harnand Publications, New Delhi.
4. Kamath M.V, 'Professional Journalism', Vikas Publishing, New Delhi.
5. Bhargav G.S, 'The Press in India: An Overview', National Book Trust ,New Delhi
6. Fiske, John 1982, 'Introduction to Communication Studies', Routledge.
7. Mark Vinet, 2017, Entertainment Industry: The Business of Music, Books, Movies, TV, Radio, Internet, Video Games- Independently Published.
8. Vanita Kohli-Khandekar, 2010, The Indian Media Business, SAGE Response; Third edition

Course Code: 106	**Office Automation I**	**Credits: 02**	**Marks : 50 (Internal -50)**
Course Outcomes	After completion of this course students will be able to – 1) Understand the document formatting tools through word application. 2) Prepare presentation using Power point application.		
Unit No			No. of Periods
I	**INTRODUCTION TO MS WORD**:- Types of OS, Files and Directories, Windows Operating Environment, Control Panel, Taskbar, Desktop Icons. **Working with MS word** -Opening & Saving files, Editing text documents, Inserting, Deleting, Cut, Copy, Paste, Undo, Redo, Find, Search, Replace, Formatting page & setting Margins, Converting files to different formats, Importing & Exporting documents, Sending files to others, Using Tool bars, Ruler, Using Icons, using help, Formatting Documents - Setting Font styles, Font selection- style, size, colour etc, Type face - Bold, Italic, Underline, Case settings, Highlighting, Special symbols, Setting Paragraph style, Alignments, Indents, Line Space, Margins, Bullets & Numbering. Setting Page style - Formatting Page, Page tab, Margins, Layout settings, Paper tray, Border & Shading, Columns, Header & footer, Setting Footnotes & end notes – Shortcut Keys; Inserting manual page break, Column break and line break, Creating sections & frames, Anchoring & Wrapping, Setting Document styles, Table of Contents, Index, Page Numbering, date & Time, Author etc., Creating Master Documents, Web page. Creating Tables- Table settings, Borders, Alignments, Insertion, deletion, Merging, Splitting, Sorting, and Formula, Drawing - Inserting ClipArts, Pictures/Files etc., Tools – Word Completion, Spell Checks, Mail merge, Templates, Creating contents for books, Creating Letter/Faxes. Page layout & view. Introduction to **Open Office-Writer** and preparing word documents in it.		15
II	**INTRODUCTION TO MS POWER POINT:** Introduction to presentation – Opening new presentation, Different presentation templates, Setting backgrounds, Selecting presentation layouts. Creating a presentation - Setting Presentation style, Adding text to the Presentation. Formatting a Presentation - Adding style, Colour, gradient fills, Arranging objects, Adding Header & Footer, Slide Background, Slide layout. Adding Graphics to the Presentation Inserting pictures, movies, tables etc into presentation, Drawing Pictures using Draw. Adding Effects to the Presentation- Setting Animation & transition effect. Printing Handouts. **Open Office-Impress** - Creating Presentation, Saving Presentation Files, Master Templates & Re-usability, Slide Transition.		15
	Evaluation : 1) MCQ examination 20 Marks and Practical Examination 30 marks		
	Books Recommended: 1) Microsoft Office 2007 Bible - John 2) Introduction to Information Technology - Alexis Leon, Mathews Leon, and Leena Leon, Vijay Nicole Imprints Pvt. Ltd., 2013. 3) A Conceptual Guide to Open Office 4) Computer & Internet Basics Step-by-Step - Etc-end the Clutter –IP 5) Open Office Basic: Websites: 1) http://windows.microsoft.com/en-in/windows/msoffice-basics-alltopics		

	2) https://wiki.openoffice.org/wiki/Documentation https://documentation.libreoffice.org/assets/Uploads/Documentation/en/GS6.0 / GS60-GettingStartedLO.pdf	

Course code: 107	**Business Communication**	**Credit :02**	**Marks:50 (Internal -10 External -40)**
Course Outcomes	After completion of this course student should be able - 1. Understand the concept of management. 2. Understand leadership and motivational theories.		
UNIT No.	**Description**		**No. of Periods**
I	**Communication Skills**: Concept, Objectives, Process of communication, Types of Communication- Verbal, Non verbal Barriers to effective communication, Overcoming the barriers Forms of Communication in an organization-Formal and Informal (Grapevine)		**15**
II	**Business Correspondence**: Business letters Essentials of a business letters, Parts of a business letter, Forms of a business letter,Types of business letters- Tenders, quotations , orders, sales, complaint ,Email correspondence.		**15**
	Books Recommended: 1. Essential Communication Skills, Shalini Agarwal 2. Business Communication , R. K. Madhukar 3. E-Mail: A Write It Well Guide: How to write and Manage EMail in the workplace- Janis Fisher Chan 4. The AMA Handbook of Business Letters – Jeffrey L. Seglin; Edward Coleman 5. Effective Writing : Improving Scientific, Technical and Business Communication, Christopher Turk; Kirkman Websites:1) https://www.pressreader.com/india/the-times-of-indianew-delhi-edition/20070122/281582351154787 2) https://www.entrepreneur.com/topic/business-communication		

Course Code: 109	Indian Contribution to Computational Sciences	Credits:02	Marks : 50 (Internal -10 External -40)
Course Outcomes	After completing this course, students should demonstrate competency in the following skills: 1. To identify the Indian contribution in designating super computer. 2. To evaluate the role of Indian experts in solving Y2K bug and its impact on IT sector.		

Unit No.	Descriptions	No. of Periods
I	**India's first indigenous Super Computer** Need, Introduction, Development Team, Technical details, Challenges and Features, Operators of PARAM Super Computer, National Supercomputing Mission, Supercomputer summary.	**15**
II	Y2K Bug and Indian IT Sector Y2K issue, Reason for the Y2K bug, Nature of Y2K bug, Consequences, Solution to the Y2K problem, Indian input in solving Y2K bug. Impact of Y2K crisis on global and Indian IT sector.	**15**
	Reference Books: 1. *Bhatkar, V.P. (April 1994). "PARAM parallel supercomputer: Architecture, programming environment, and applications". Proceedings of 8th International Parallel Processing Symposium. pp. 388–389.* *2.* "C-DAC unveils India's fastest supercomputer Param Yuva II". The Economic Times. 9 February 2013. Retrieved 9 February 2013. *3.* "C-DAC launches India's fastest supercomputer; becomes first R&D institution in India to cross 500 teraflops milestone". Information Week. 9 February 2013. Archived from the original on 13 February 2013. Retrieved 9 February 2013. *4.* ***https://www.jagranjosh.com/general-knowledge/y2k-bug-1589540224-1*** 5. **https://education.nationalgeographic.org/resource/Y2K-bug/** 6. "Y2K bug rears its ugly head". *New York: CNN. 12 January 1999*. Retrieved 2019-12-30. 7. "Y2K bug strikes airports". Retrieved 2023-03-08.	

Bachelor of Computer Applications (BCA)
BCA I (Sem II)

Course Code: 201	DBMS	Credits: 02	Marks : 50 (Internal -10 External -40)
Course Outcomes	After completion of this course students will be able to – 1) Describe the basic concepts of DBMS and systematic database design approaches. 2) Learn MS-Access for database creation and handling transactions.		
Unit No.	**Descriptions**		**No. of Periods.**
I	Introduction of DBMS : Basic Concept (Data Vs. Information, Database), Definition of DBMS, Needs and Features of DBMS, Comparison of file processing system with DBMS, functions of DBMS, advantages and disadvantages of DBMS, Structure of DBMS,		**15**
II	Data Models: Introduction, definition, features of data models, DFD, Object based data models- Entity Relationship Model, Cardinality; Record based models- Hierarchical Model, Network Model, Relational Model and Physical Data Models. Keys: Primary key, foreign key, candidate key, super key, unique key. Normalization: Concept of normalization, advantages, First NF, Second NF, Third NF, examples of normalizations. Database Management through Ms-Access: Introduction of MsAccess, features, database creation, table creation, insert records, queries, forms and report creation.		**15**
	Books Recommended: 1) Database System Concept – Henry korth and A. Silberschatz 2) Fundamentals of Database System- RamezElmasri, Shamkant B. Navathe (Pearson) 3) Database Management System- Raghu Ramkrishnan, Gehrke (McGraw Hill) 4) Database Management System- R. Panneerselvam 5) Ms-Office Complete reference		
	Web References: 1) https://www.oreilly.com/library/view/relational-theory 2) https://en.wikipedia.org/wiki/Database 3) https://hackr.io/blog/dbms-normalization 4) https://en.wikipedia.org/wiki/Database_normalization		

Course Code: 202	Operating System	Credits:04	Marks : 100 (Internal -20 External -80)
Course Outcomes	After completion of this course students will be able to- 1) Possess knowledge of Operating Systems and their types. 2) Apply the concept of a process and scheduling algorithms. 3) Realize the concept of deadlock and different ways to handle it. 4) Understand various memory management techniques and file system.		
Unit No.	**Descriptions**		**No. of Periods**
I	**Introduction of Operating System-** Definition,Objectives,Functions,Generations of OS, Types of OS (Batch,Multiprogramming,TimeSharing,Realtime,Distributed,Personal,Mobile).OS Structure (Monolithic, Layered, Microkernel,Exokernel, Client-Server).		**15**
II	**Process Management–** Process Management-Introduction to Processes, Process Model, Process creation, Process termination, Process hierarchy, Process states.		**15**
III	**Memory Management-** Memory Management-Introduction to memory management, Requirements (Relocation,Protection,Sharing Logical organization, Physical organization).Memory partitioning-Fixed partitioning, Dynamic partitioning, Paging, Segmentation. Concept of Virtual memory.		**15**
IV	**File System-** Files&Filesystem,Filestructure,Filetypes,Fileaccess,Fileattributes,Basicfileoperations.Directories-Single-level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.		**15**
	Books Recommended: 1. Modern Operating Systems, AndrewS Tanenbaum, 3rd Edition,PHI,2010. 2. OperatingSystems,AchyutSGodbole,2nd Edition,McGraw Hill Publications. 3. Operating Systems, Internals & Design Principles, 4. WilliamStalling,6th Edition,.PearsonPublicati, 5. Operating System, Abraham Silberschatz, PeterBar Galvin,andGregGagne,2008 6. Operating System, Abraham Silberschatz, PeterBaerGalvin,andGregGagne,7thEdition,2004		

Course Code: 203	**Lab Course II** (Based on DBMS & Web Technology)	**Credits:02**	**Marks : 50 (External -50)**
Course Outcomes	After completion of this course students will be able to – 1) Use MS-Access DBMS and design database for business applications. 2) Design webpage using CSS & HTML		
Unit No.	**Descriptions**		
1	**DBMS Practical's** Write procedure for creating database in Ms-Access.		
2	Establish relationship between tables and write steps for it		
3	Generate form in Ms-Access and write steps in detail.		
4	Create reports using different queries based on multiple tables and write steps in detail for it.		
5	Lab assignment based on Case Studies a) Library system: b) HR Management System c) Inventory Management System Design normalized data structures with appropriate constraints. (at least 5 tables for each system), Design forms, Create different query using query wizard, Create at least 3 reports using report wizard (at least 5 records)		
6	**Web Technology-I Practical's** Design web page using heading and formatting tags in HTML		
7	Design web page using tags-marquee, Image tags, hyperlink, list		
8	Create Railway time table using Table tag		
9	Designawebpageofyourhometownwithanattractivebackgroundcolor,textcolor,an Image,font etc.(useinternalCSS).		
10	Use External, Internal, and Inline CSS to form at college web page that you created.		

Course Code: 204	**Mathematics for Computer Applications**	**Credits:02**	**Marks : 50 (Internal -10 External -40)**
Course Outcomes	After completing this course, students will be able to- 1) Understand set theory, functions and relations concepts, matrix needed for designing and solving problems. 2) Use graph algorithms to solve problems.		

Unit No.	Descriptions	No. of Periods
I	**SETS** Introduction. Methods of describing of a set: Tabular form, Set builder form. Finiteset, Infiniteset, Emptyset, Subset,Universal set, Equal sets, Disjoint sets, Complementary set. Operation on Sets: Union of sets, Intersection of sets, Difference of sets, Examples. DeMorgan's Laws(without proof). Venn diagram, Examples. Cartesian product of two sets, Examples.Idempotent laws, Identity laws, Commutative Laws, Associative laws, Distributive laws, Inverse laws, Involution laws. Duality. Computer Representation of sets and its operations. Relations and Functions: Introduction, Operations on Functions, Injective, surjective and bijective functions	**15**
II	**Matrices :** Introduction to matrices,Types of matrices: Row matrix, Column matrix, Null matrix, Unit matrix, Square Matrix, Diagonal matrix, Scalar matrix, Symmetric matrix, Skew - symmetric matrix, Transpose of a matrix, Definition of Determinants of order 2nd & 3rd and their expansions Singular and Non-Singular Matrices Algebra of Matrices: Equality of matrices, Scalar Multiplication of matrix, Addition of matrices, Subtraction of matrices, Multiplication of matrices. Elementary Row & Column Transformations Inverse of Matrix (Using Elementary Transformations) Examples based on above.	**15**
	Reference Books: 1. Discrete Mathematics & Structures by SatinderBal Gupta, University Science Press 2. Fundamental Approach to Discrete Mathematics by D. P. Acharjya, Sreekumar, New Age International Publishers 3. Discrete Mathematical Structures by Kolman, Busby, Ross, Pearson Education Asia 4. Matrices by Shantinarayan, S. Chand & Co. New Delhi 5. Discrete Mathematics by Schaum Series 6. Discrete Mathematics by K D Joshi 7. David Makinson, "Sets, Logic and Maths for Computing", Springer Indian Reprint, 2011. 8. Kenneth H. Rosen, "Discrete Mathematics and Its Applications", Tata McGraw Hill, 4th Edition, 2002. 9. Trembley, J.P. and Manohar, R, "Discrete Mathematical Structures with Applications to Computer Science", Tata McGraw Hill, New Delhi, 2007.	

Course Code: 205	Financial Accounting	Credits:02	Marks : 50 (Internal -10 External -40)
Course Outcomes	After completion of this course students will able to– 1. Use basic accounting terminology, procedures and systems of maintaining accounting records. 2. Understand financial statements		
Unit No.	**Descriptions**		**No. of Periods**
I	**Introduction to Financial Accounting** Meaning and Definition of Financial Accounting, Objectives of Accounting, Various users of Accounting Information, Accounting Terminologies, Accounting Concepts and Conventions, Double entry system, Types of Accounts and Golden rules of accounting. Books of Prime Entry, Subsidiary Books and Ledger Creation.		**15**
II	**Preparation of Financial Statements** Trial Balance – Meaning, Definition, purpose and features, preparation of Trial Balance. Final Accounts – Introduction, objectives of Final Accounts, Adjustments before Preparing Final Accounts, Preparation of Trading Account, Profit and Loss Account, Balance Sheet.		**15**
	Books Recommended: **1.** Anthony,RN.andReece.J.S.:Accounting Principles: Richard Irwin Inc. **2.** Gupta.R.L.and Radhaswamy. M:Financial Accounting; Sultan Chand and Sons, New Delhi. **3.** Shukla.M.C.,GrewalT.S.,andGupta,S.C.:AdvancedAccounts :S.Chand&Co.NewDelhi. **4.** Advance Accountancy:-Maheshwari **5.** Advance Accountancy:-R.L.Gupta **Websites** 1) www.accountingcoach.com 2) www.futureaccountant.com 3) www.futureaccountant.com		

Course Code: 206	MEDIA AND ENTERTAINMENT MANAGEMENT-II		
Course Outcomes	After completion of this course, students will be able to: 1. Summarize and analyse essential concepts and principles of media management 2. Analyze business and economics of national and international media markets.		
Hours of Teaching : 30		**Lecture /Week : 02**	**Credit Points : 02**
Marks : 50		**External : 40**	**Internal : 10**
Syllabus Contents:			
Unit: I	**Media as an industry and profession** Global Media Scenario: Issues of Monopolies. Ownership Patterns of Mass Media in India: Sole proprietorship, partnership, private limited companies, public limited companies, trusts, cooperatives, religious institutions (societies), and franchisees (chains), big media houses in India.		15 Hours
Unit: II	**Median Management & Economics of Media** Introduction to Media Management- General Management, Finance, Circulation (sales promotion, including pricing and price war aspects), Advertising (marketing), Personnel Management, Production, and Reference Sections, Print Media Management, Electronic Media Management, Digital Media Management, and Media Ethics. Economics of media- Economics of print, electronic, and digital media; business, legal, and financial aspects of media management; Budgeting and finance, capital costs, production costs, commercial polity, advertising and sales strategy, completion and survival, evolving a strategy and plan of action, operations, production schedule and process, evaluation, budget control, costing, etc.		15 Hours

Reference Books

1. Chiranjeev, A., (2000), Electronic Media Management, Authors Press.
2. Dibankar, P.&Biswaroy B.K., (1993), Media Management in India, Kanishka Publishing House.
3. Kothari,G., Newspaper Management, Netherland: Intercultural Open University
4. B. K. Chaturvedi (2014) Media Management, Global Vision Publishing House; 2nd edition
5. Saroj Kr. Mishra (2018), Media Management, GyanGeetaPrakashan
6. ArpitaMenon (2017), Media Planning and Buying: Principles and Practice in the Indian Context, McGraw Hill Education
7. MukulSahay (2011), A Textbook of Media Management, Wisdom Press
8. Tracy L. Tuten and Michael R. Solomon (2016), Social Media Marketing, Sage Publications India Private Limited

Course code:207	Web Technology I	Credit:02	Marks : 50 (Internal -10 External -40)
Course Outcomes	After completion of this course student should be able to- 1. Understand basics of website and web development life cycle. 2. Design website using HTML and CSS		
Unit No.	**Descriptions**		**No. of Periods**
I	**Introduction-Internet &Website** 1.1 Internet Basics, Internet Protocols(HTTP,FTP,IP) 1.2 World Wide Web(WWW) 1.3 HTTP, DNS, IP Address 1.4 Working of Website 1.5 Web Browser, Web Server, Types 1.6 Types of Websites(Static and Dynamic Websites) 1.7 Web Development life cycle 1.8 Basics of web hosting		**15**
II	**HTML and CSS** 2.1IntroductiontoHTML,History,Features 2.2.HTMLtags&attributes 2.3HTMLFormelements 2.4. HTML Frame set 2.5. Limitations of HTML 2.6 Basics of CSS, Syntax 2.7 Types of CSS, Importance of CSS 2.8. CSS Selectors-Group, id, class 2.9. CSS properties-Border, background, list, image, margins 2.10. Advantages and limitations of CSS		**15**
	Reference Books: **1.** Complete HTML-Thomas Powell **2.** HTML and JavaScript–Ivan Bayross **3.** Java script: The Complete Reference by Thomas Powell, Fritz Schneider **4.** IntroducingHTML5 Bruce Lawson **5.** HTML Black Book-Steven Holzner6 **6.** HTML5 & CSS3 Castro Elizabeth7th Edition 7.WebDevelopment and Design Foundations with HTML5-Terry A. Felke-Morris		
List of Lab work	Design web page using heading and formatting tags in HTML Design web page using tags-marquee, Image tags ,hyperlink,list Create Railway timetable using Table tag Create HTML form for students registration Create your class timetable using table tag. Design a web page of your hometown with an attractive background color, text color, image, font etc.(useinternalCSS). Use Inline CSS to format your resume that you created. Use External CSS to format your class timetable . Use External, Internal, and Inline CSS to form at college web page that you created.		

Course Code: 208	Office Automation-II	Credits:02	Marks:50
Course Outcomes	After completing this course, students should demonstrate competency in the following skills: 1. To analyze data using excel functions. 2. To visualize data using excel charts.		

Unit No.	Descriptions	No. of Periods
I	**Introduction to Microsoft Excel**: Basics of MS Excel, Ribbon & its components, worksheet, MS Excel Environment, formatting- Font formatting, Number formatting, Table formatting, Conditional formatting. **Basic Functions:** Text function, Math's function, Statistical Function, Logical function Date& Time Function, Look up function.	**15**
II	**Data Visualization using charts** Types of Charts in MS Excel: Bar chart, Histogram, Pie chart, Line Chart. 1. The Chart Wizard &Chart Types 2. Adding Title / Legends / Labels 3. Adding Data to a Chart 4. Formatting / Renaming / Deleting Data Series 5. Changing the Order of Data Series	**15**
	Reference Books: 1. Excel 2002 VBA-Rob Bovey, Stephen Bullen, Johnreen, Robert Rosenberg 2. Microsoft Excel 2019 Formulas and Functions 3. Microsoft Excel 2022: A Comprehensive Step by Step 4. Beginners Guide to Master Excel From Scratch with Basic to Advanced Formula and Functions :Sarah Paige	