હેમચંદ્રાચાર્ય ઉત્તર ગુજરાત યુનિવર્સિટી

NAAC B (2.21) State University

પો.બો.નં.–૨૧, યુનિવર્સિટી રોડ, પાટણ (ઉ.ગુ.) ૩૮૪૨૬૫

ફોનઃ(૦૨૭૬૬) ૨૩૭૦૦૦ ફેકસ : (૦૨૭૬૬) ૨૩૧૯૧૭

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પરિપત્ર નં.- ૨૪૮/૨૦૨૪ *રાષ્ટ્રીય શિક્ષણ નીતિ-૨૦૨૦*

વિષયઃ મેનેજમેન્ટ વિદ્યાશાખા હેઠળના કોમ્પ્યુટર સાયન્સના સ્નાતક કક્ષાના સેમેસ્ટર-૧ થી ૪ના જૂન ૨૦૨૩-૨૪ થી ક્રમશઃ અમલમાં આવેલ અભ્યાસક્રમ / પરિક્ષા સ્કીમ સુધારા અંગે.

આ યુનિવર્સિટીની મેનેજમેન્ટ વિદ્યાશાખા હેઠળના કોમ્પ્યુટર સાયન્સ વિષયની તમામ કોલેજોના આચાર્યશ્રીઓને જણાવવાનું કે,અભ્યાસ સમિતિના ચેરમેનશ્રીની અભ્યાસ સમિતિવતી તા.૧૨/૧૧/૨૦૨૪ના પત્રથી કરેલ ભલામણ અનુસાર કોમ્પ્યુટર સાયન્સ વિષયના રાષ્ટ્રીય શિક્ષણ નીતિ-૨૦૨૦ અંતર્ગત UGCની Guideline મુજબ મેનેજમેન્ટ વિદ્યાશાખા હેઠળના નીચેના સ્નાતક કક્ષાના સામેલ પરિશિષ્ટ પ્રમાણેના સુધારા સાથેના અભ્યાસક્રમો શૈક્ષણિક વર્ષઃ૨૦૨૩-૨૪થી સેમેસ્ટર ૧ અને ૨ તેમજ શૈક્ષણિક વર્ષઃ૨૦૨૪-૨૫થી સેમેસ્ટર ૩ અને ૪ ક્રમશઃ અમલમાં આવે તે રીતે વિદ્યાશાખા/ એકેડેમિક કાઉન્સિલ/સક્ષમ સત્તામંડળવતી સ્વીકારી મંજુર કરેલ છે, જેનો અમલ કરવા સારૂ સબંધિતોને આ સાથે મોકલવામાં આવે છે.

ક્રમ	અભ્યાસક્રમ	ઠરાવ ક્રમાંક	સેમેસ્ટર
૧	કોમ્પ્યુટર સાયન્સ (બી.સી.એ.)	૦૮	સેમેસ્ટર ૧ અને ૨
૨	કોમ્પ્યુટર સાયન્સ (બી.સી.એ.)	૦૨	સેમેસ્ટર ૩ અને ૪

સદર બાબતની જાણ આપના સ્તરે થી અધ્યાપકશ્રીઓ તથા વિદ્યાર્થીઓને કરવા વિનંતી છે.

નોંધઃ (૧) વિદ્યાર્થીઓની જરૂરીયાત માટે પરીપત્રની એક નકલ કોલેજના / ડિપાર્ટમેન્ટના ગ્રંથાલયમાં મૂકવાની રહેશે.

(૨) આ પરીપત્ર યુનિવર્સિટીની વેબસાઇટ www.ngu.ac.in પર પણ ઉપલબ્ધ કરવામાં આવેલ છે. આથી સંબિધત કોલેજોને ડાઉનલોડ કરી ઉપયોગ કરવા સારૂ જણાવવામાં આવે છે.

કુલસચિવ

બિડાણઃ ઉપરમુજબ

નં-એકે/અ×સ/૪૩૬૪/૨૦૨૪

તારીખઃ ૬૩ / ૧૧ /૨૦૨૪

પ્રતિ,

૧. ડીનશ્રી, મેનેજમેન્ટ સ્ટડીઝ વિદ્યાશાખા તરફ.

૨. મેનેજમેન્ટ સ્ટડીઝ વિદ્યાશાખા હેઠળની કોલેજોના આચાર્યશ્રીઓ તરફ

૩. પરીક્ષા નિયામકશ્રી, હેમચંદ્રાચાર્ય ઉત્તર ગુજરાત યુનિવર્સિટી પાટણ. (વેબસાઇટ પર મૂકવા સારૂ)

૪. ગ્રંથપાલશ્રી, હેમચંદ્રાચાર્ય ઉત્તર ગુજરાત યુનિવર્સિટી પાટણ.(વિદ્યાર્થીઓના ઉપયોગ સારૂ રેકર્ડ ફાઇલ અર્થે)

૫. માન.કુલપતિશ્રી/કુલસચિવશ્રીનું કાર્યાલય હેમચંદ્રાચાર્ય ઉત્તર ગુજરાત યુનિવર્સિટી પાટણ.

૬. સિસ્ટમ એનાલીસ્ટશ્રી, કોમ્પ્યુટર (રીઝલ્ટ સેન્ટર) હેમ.ઉ.ગુ.યુનિવર્સિટી, પાટણ.(વેબસાઇટ પર મુકવા સારૂ)

૭. પ્રવેશ પ્ર-શાખા, હેમ.ઉ.ગુ.યુનિવર્સિટી, પાટણ

૮. મહેકમ શાખા, હેમ.ઉ.ગુ.યુનિવર્સિટી, પાટણ.(૨ નકલ)

NATIONAL EDUCATION POLICY - 2020
(NEP-2020)

w. e. f. June 2023

Model Curriculum Structure for

Bachelor of Computer Applications (BCA) Programme
(Semester 2)

Submitted to

Hemchandracharya North Gujarat University,
Patan.

Preface

Greetings from NEP 2020 Computer Science Syllabus Framing Committee!

The committee members are thankful to the Hemchandracharya North Gujarat University for initiating the process of implementation of NEP-2020. It is our privilege to be part of this process through a committee constituted as a Board of Studies (Computer Science).

The committee members conducted various offline / online meetings for discussion and finalizing the course titles. These deliberations also helped in framing the syllabus for BCA and also the Programme and Course outcomes. The model draft curriculum structure for BCA Programme and the syllabus for the first two semesters of the Programme were presented in the committee meeting on 24th July 2023 and the inputs are considered during further revision.

The committee is committed to frame the remaining part of the syllabus for the BCA Programme and will be working further to fulfill all academic input requirements in implementing the curriculum in letter and spirit of NEP 2020.

Sincerely,

Dr. Namrata Gupta
(namratag_gupta@yahoo.com)
Chairperson, Board of Studies in Computer Science, HNGU, Patan.
Principal,
Smt. B. K. Mehta I.T. Center (B.C.A.) College,
Palanpur.

Member of Board of Studies (Computer Science)

S. No.	Member's Name	Designation
1	**Dr. Namrata Gupta** Principal, Smt. B. K. Mehta I.T. Center (B.C.A.) College, Palanpur.	Chairperson
2	**Dr. Jaydeep Trivedi** Principal, Matrushri L.J.Gandhi B.C.A College, Modasa.	Member
3	**Dr. Nikunj Raval** Asst. Professor, Shri Sarvajanik M.Sc.(C.A. & I.T) College, Mehsana.	Member
4	**Mr. Natvar Patel** Asst. Professor, Smt. B. K. Mehta I.T. Center (B.C.A.) College, Palanpur.	Member
5	**Dr. Rajesh Maheta** Director , D.L Patel Institute of Management & Technology MCACollege, Vidhyanagari Campus, Himmatnagar.	Member
6	**Dr. Harshad Prajapati** Asst. Professor , College Of Computer And Management Studies(CCMS), BCA College, VADU.	Member
7	**Mr. Jayram Suthar** Asst. Professr, Shree R. K. Patel BCA College, Nani Kadi.	Member
8	**Dr. Bhavesh Patel** I/C Head , Department of Computer Science, Hemchandracharya North Gujarat University, Patan.	Member
9	**Mr. Nirav Thakkar** Asst. Professor, Shri Sarvajanik BCA And PGDCA College, Mehsana.	Member (Invitee)

Preamble

BCA (3 Year)

- BCA Three Year is an undergraduate degree programme that provides students with a solid foundation in computer science and its practical applications.
- It covers various aspects of the field, such as programming, data structures, algorithms, database management, and software development.
- The programme prepares graduates for careers in software development, web design, database administration, and networking, among others.

BCA Hons (4 Year)

BCA Honours with Research

- BCA Hons with Research is an advanced undergraduate degree that focuses on in-depth research and academic exploration in computer science.
- Students engage in research projects, gaining valuable skills in problem-solving, critical thinking, and data analysis.
- This programme prepares graduates for research-oriented careers in academia, industry research labs, or further academic pursuits.
- Students who have completed BCA Hons with Research are eligible to get admission in Ph.D. without Master Degree.

BCA Hons without Research

- BCA Hons without Research is a specialized undergraduate degree that offers a comprehensive understanding of computer science without extensive research components.
- It covers theoretical knowledge and practical skills necessary for careers in the IT industry, including software development, web design, database administration, system analysis, and cyber security.
- This degree also serves as a foundation for further studies in computer science or related disciplines.

Programm Objectives (BCA)

- **Develop foundational knowledge**: The BCA programme aims to provide students with a strong foundation in computer science and its applications. This includes an understanding of programming languages, data structures, algorithms, databases, operating systems, and networking.

- **Enhance technical skills:** The programme focuses on developing practical skills in software development, system analysis, web development, and computer hardware. Students are trained to use industry-standard tools, programming languages, and software development methodologies.

- **Foster problem-solving abilities:** BCA aims to nurture problem-solving skills among students by teaching them systematic approaches to analyze and solve complex problems. This includes algorithm design, logical reasoning, and debugging techniques.

- **Cultivate teamwork and communication skills**: BCA programme often include collaborative projects and group assignments to enhance teamwork and communication skills. Students learn to work effectively in teams, communicate technical concepts clearly, and participate in professional presentations.

- **Promote industry-relevant knowledge:** The curriculum is designed to align with industry trends and requirements. BCA programs often include practical training, internships, or industry projects to expose students to real-world scenarios and enhance their employability.

- **Encourage continuous learning and adaptability:** BCA graduates need to keep up with rapidly evolving technologies. The programme emphasizes the importance of lifelong learning, encourages students to stay updated with emerging trends, and prepares them for continuous skill development.

- **Provide a platform for higher education and research:** BCA programme serve as a stepping stone for further education and research in computer science. Graduates may choose to pursue advanced degrees or engage in research and innovation in areas such as artificial intelligence, data science, cyber security, or software engineering.

Programm Outcomes: BCA (3 Years)

The Bachelor of Computer Application (BCA) Programme enables students to attain following attributes, by the time of graduation:

- **Proficiency in Programming:** Graduates will demonstrate proficiency in programming languages and be able to design, develop, and implement software applications to meet specificrequirements.

- **System Analysis and Design**: Graduates will be able to analyze user requirements, design system architectures, and develop efficient solutions using appropriate software development methodologies.

- **Problem Solving and Critical Thinking:** Graduates will possess strong problem-solving and critical thinking skills, enabling them to identify and address complex issues in computer applications and systems.

- **Database Management:** Graduates will have a thorough understanding of database management systems, including the ability to design and manage databases effectively, query data, and ensure data integrity and security.

- **Web Development Skills:** Graduates will have the necessary skills to design and develop interactive and dynamic websites, including proficiency in front-end and back-end web technologies, frameworks, and content management systems.

- **Networking and Systems Administration:** Graduates will be equipped with knowledge of computer networks, network protocols, and system administration principles, allowing them to configure and manage network infrastructure and computer systems.

- **Software Testing and Quality Assurance:** Graduates will understand software testing principles and techniques, enabling them to develop and implement effective testing strategies to ensure the quality and reliability of software applications.

- **Ethical and Professional Practices:** Graduates will demonstrate ethical awareness and adhere to professional standards and practices in their work, respecting privacy, security, and intellectual property rights.

- **Effective Communication and Collaboration:** Graduates will possess strong communication and

interpersonal skills, allowing them to effectively communicate technical concepts, work collaboratively in teams, and contribute to project planning and execution.

- **Lifelong Learning and Adaptability:** Graduates will recognize the need for continuous learning and professional development, staying abreast of emerging technologies and trends inthe field of computer applications.

- **Modern Tool Usage:** Identify, select and use a modern scientific and IT tool or technique for modeling, prediction, data analysis and solving problems in the area of Computer Science and making them mobile based application software.

- **Project Management:** Practicing of existing projects and becoming independentto launch own project by identifying a gap in solutions.

- **Ethics on Profession, Environment and Society:** Exhibiting professional ethics to maintain the integrality in a working environment and also have concern on societal impacts due to computer-based solutions for problems.

- **Motivation to take up Higher Studies:** Inspiration to continue educations towards advanced studies on Computer Science.

Program Outcomes: BCA (4 year Hons)

The Bachelor of Computer Application (BCA (Hons)) programme enables students to attain following additional attributes besides the afore-mentioned attributes, by the time of graduation:

- **Advanced Knowledge:** Graduates of BCA Hons will have acquired advanced knowledge and a deep understanding of specialized areas within computer science. They will demonstrate a comprehensive understanding of advanced topics, emerging technologies, and current industry trends.
- **Research Proficiency:** Students will have developed strong research skills and the ability to conduct independent research projects. They will be proficient in research methodologies, data analysis, and experimental design, enabling them to contribute to the advancement of knowledge in the field.
- **Technical Expertise:** BCA Hons will demonstrate a high level of technical expertise in areas such as programming languages, algorithms, database management, software engineering, and computer architecture. They will be proficient in implementing advanced algorithms, developing efficient software solutions, and optimizing system performance.
- **Communication and Presentation Skills:** BCA Hons will have developed strong communication and presentation skills, both written and verbal. They will be able to effectively articulate complex technical concepts, research findings, and project outcomes to diverse audiences, including peers, experts, and non-technical stakeholders.
- **Project Management Abilities:** BCA Hons will possess project management skills, including the ability to plan, organize, and execute research projects or complex software development projects. They will be adept at managing resources, meeting deadlines, and working effectively in teams.
- **Industry Readiness:** Graduates will be well-prepared for the industry, with the skills and knowledge necessary to excel in various roles within the IT sector. They will be equipped for careers in software related fields.
- **Higher Education and Research Pursuits**: BCA Hons graduates will be prepared for further academic pursuits, including pursuing advanced degrees such as Master's or Ph.D. programs in computer science or related disciplines. They will have a solid foundation to pursue research- oriented careers in academia or industry research labs.

BCA Eligibility Criteria

- The candidate should have passed 12th standard in 10+2 pattern from Gujarat secondary Education Board or Senior school Certificate Examination (std 12) from Schools in Gujarat of C.B.S.E./ I.S.C. Board or the examination equivalent to 12th standard (Graded Schooling of 12 years).
- English is compulsory in 12th Standard.

Exit Options

1. After II Semester - Exit option with Certificate in Computer Applications.
   (With a minimum of 44 + 4 credits of Summer Internship)
2. After IV Semester - Exit option with Diploma in Computer Applications.
   (With a minimum of 88 + 4 credits of Summer Internship)
3. After VI Semester - Exit Option with Bachelor of Computer Applications Degree, BCA Degree.
   (With a minimum of 132 credits)
4. After VIII Semester - Award of Bachelor of Computer Applications Hons Degree, BCA (Hons.) Degree.
   (With 176 credits)

Please give your feedback to:

Dr. Namrta S Gupta,
(namratag_gupta@yahoo.com)
Chairperson, Board of Studies in Computer Science,
Hemchandrcharya North Gujarat University, Patan

Syllabus w. e. f. June 2023 under NEP 2020

SEMESTER - II								
COURSE TYPE	**COURSE CODE**	**COURSE TITLE**	**CREDIT**	**WORK HOUR/ WEEK**		**EXAM HOUR**	**TOTAL MARKS**	
				TH	**PR**		**TH**	**PR**
Discipline Specific Course (Major)	MS23MJDSCBCA201	Advance Programming Language – 'C'	4	4	-	2	100	-
Discipline Specific Course (Major)	MS23MJDSCBCA201A	Internet & Web Designing	4	4	-	2	100	-
Minor Stream	MS23MIDSCBCA202	**PRACTICAL** - Advance Programming in C	2	-	4	2	-	50
Minor Stream	MS23MIDSCBCA202A	**PRACTICAL –** Internet & Web Designing	2	-	4	2	-	50
Multi-Disciplinary Course	MS23MDCBCA203	Electronic Commerce (E-Commerce)	4	4	-	2	100	-
Ability Enhancement Course	MS23AECBCA204	Communication Skills-II	2	2	-	1	50	-
Common Value Added Course	MS23VACBCA205	Integrated Personality Development Course -I	2	2	-	1	50	-
Skill Enhancement Course	MS23SECBCA206	Mathematics - II	2	2	-	1	50	-
TOTAL			22	18	8		450	100
			22	**26**			**550**	

Examination and Passing Criteria

- **Internal Examination Marks Ratio: 50% of Total Marks.**
- **External Examination Marks Ratio: 50% of Total Marks.**
- **Passing Marks: 36% Marks in Internal as well as External Examination.**

Evaluation System

The Evaluation System Consist of two components:

1. **Continuous and comprehensive Evaluation (CCE) Formative (Internal)**
2. **Semester End Evaluation (SEE) – Summative (External)**

In, each course 50% marks is assign to CEE and rest of 50 % marks is Assign to SEE.

Continuous and comprehensive Evaluation (CCE):

- The 50% marks assign to CEE is distributed between the continuous classroom evaluation and mid-term evaluation.
- Subject-wise CCE will be undertaken by the concerned faculty member. The mode of evaluation will be decided by the faculty member concerned with the subject.
- Normally CCE consists of **class participation**, **case analysis and presentation**, **assignment**, **tutorials, slip tests (announced/surprised), quizzes, attendance etc. or any combination of these.**
- The students are expected to submit their answer scripts/ reports of internal evaluation within the stipulated time. Failure to do so may result in the script not being valued.
- Another part of **CCE consists of mid-term written evaluation**, **which is compulsory for all students**. It can be done in a scheduled manner. The duration of the mid-term evaluation shall be one hour.

- Based on the types of evaluation, various models of evaluation implementation are suggested for theory, practical, self-study and work-based learning. The focus of these models is to encourage the students to improve on skills and performance.

Examination Pattern	**Marks**
Class Test (best 2 out of 3)	15
Quiz (Best 3 out of 4)	15
Active Learning	05
Class Assignment	05
Home Assignment	05
Attendance	05

Semester End Evaluation (SEE):

- The SEE carries 50% of the marks assigned to a course.
- SEE shall be of 2 hours for 4 credit course and 1 hour in case of 2 credit courses.
- The controller of the examination will conduct these examinations.
- Paper setting and evaluation will be done by the external examiners to an extent of 50% of the evaluation process.
- This examination shall be conducted as per a schedule which shall be notified in advance.
- The backlog exam will be conducted twice a year just after the result declared of the semester evaluation. Students shall have a second chance to clear their backlog and avoid the burden to carry forward the backlog with the next semester exam.

Eligibility Criteria to appear in SEE:

1. Should have at least 75% of attendance in all the courses put together
2. Should have at least 70% of attendance in each course/subject
3. Should not have any disciplinary proceedings pending against him/her
4. Should have no pending due

Semester: II	**Program Code:MGTUG201**
Course Code: MS23MJDSCBCA201	**Course Title:** Advance Programming Language – 'C'
Course Credits: 04	**Hours/Week:** 04
Exam Duration: 2 Hours	**Course Type:** Discipline Specific Course (Major)
Internal Exam Marks: 50	**External Exam Marks:** 50

Course Outcome:

After Completion of course,

- Students will demonstrate proficiency in creating and utilizing modular functions to promote code reuse and improve program structure.
- Students will master the use of pointers to manipulate data, understand pointer arithmetic, and dynamically manage memory allocation and deallocation.
- Students will gain advanced skills in reading from and writing to files, performing sequential and random access operations, and effectively handling file errors.
- Students will develop a comprehensive understanding of structures and unions, including their definition, initialization, and manipulation, enabling them to organize data effectively and optimize memory usage.

Total Teaching Hour: 45		
Sr. No.	**PARTICULAR**	**MARKS**
Unit - I	**User-defined Function:** Introduction, Need for User define function, Arguments and return types, Classifications of function, using arguments and return types, Nesting of functions, Recursion, Functions with arrays, The scope and lifetime of variables in functions.	25%
Unit - II	**Structures & Unions:** Introduction, defining a structure, giving values to members, Structure initialization, copying and Comparison of structures variables, Arrays of structures, Arrays within structures, Structures within Structures, Structures and functions,Unions, Size of structures, Bit fields.	25%
Unit - III	**Pointers:** Introduction, Understanding pointers, Advantage of using pointer, Accessing the address of a variable, Declaring and initializing pointers, Accessing a variable through pointer, Pointer expressions, Pointer increments and scale factor. Pointers and arrays, Pointers and character strings, Pointers and Functions, Pointers and structures.	25%

	Dynamic Memory Allocation and Linked List: Introduction, Dynamic Memory allocation, Memory allocation functions (malloc, calloc, realloc and free).	
Unit - IV	**File Management in C:** Introduction, creating and opening a file, closing a file, Input / Output operations on files. Error handling during I/O operations, Random access files and Command line arguments. **The Preprocessors:** Introduction, Types of Preprocessors Directives. **Macro:** Introduction, Format of Macro, Simple Macro Substitution, Argument, Macro Substitution, Nested Macro Substitution, File inclusion, Compiler control directives	25%

Text Books:

1. Programming in ANSI C, Balagurusamy, Tata McGraw-Hill

Reference Books:

1. Programming in C, by Pradip Dey & Manas Ghosh, Publisher – Oxford
2. The Complete Reference, Herbert schildt Fourth Edition
3. Let Us C , Yashwant Kanetkar, BPB Publications
4. Working with C, By Yashavant Kanetkar, BPB Publications.
5. Programming with C, By Bayron Gottfried, Tata McGraw-Hill Edition.

University Question Paper Scheme			
Q.1	Unit-I	Descriptive/ Long questions with choice	10 Marks
Q.2	Unit-II	Descriptive/ Long questions with choice	10 Marks
Q.3	Unit-III	Descriptive/ Long questions with choice	10 Marks
Q.4	Unit-IV	Descriptive/ Long questions with choice	10 Marks
Q.5	All Unit	Objective / Short Question / True –False etc.	10 Marks
Note: Programs can be asked when necessary.			

Semester: II	**Program Code:MGTUG201**
Course Code: MS23MJDSCBCA201A	**Course Title:** Internet & Web Designing
Course Credits: 04	**Hours/Week:** 04
Exam Duration: 2 Hours	**Course Type:** Discipline Specific Course (Major)
Internal Exam Marks: 50	**External Exam Marks:** 50

Course Outcome:

After Completion of course,

- Students will gain a comprehensive understanding of the Internet's architecture, protocols, and key technologies.
- Students will develop practical skills in HTML and CSS for designing and structuring visually appealing web pages.
- Students will learn fundamental principles of web design and UX to create intuitive, user-friendly interfaces.
- Students will be introduced to client-side scripting with JavaScript and learn to use web development tools for interactive web page design.

Total Teaching Hour: 45		
Sr. No.	**PARTICULAR**	**MARKS**
Unit - I	**Concept of Internet:** A brief Introduction to the Internet: Computer Networks, Internet, URL (Uniform Resource Locator), Internet Service Provider, Intranet, Extranet, Virtual Private Network. **Application of Internet:** World Wide Web, Search Engines, News groups, Electronic Mail, Web Portal, Chat, Video Conferencing, FTP, Remote Login, E-Commerce, E-Learning, E-Governance, E-Banking.	25%
Unit - II	**Static Web Page Development Basic Of HTML:** What is Internet Language? , What is HTML tag? , Web Page and its Types, Publishing HTML Pages, Basic Tags. **Introduction to HTML:** HTML document Structure, Adding text in Newline , Creating heading: <H1> to <H6>, Creating a paragraph<P>--</P>, Creating a Horizontal ruler<HR>--</HR>, Scrolling text <marquee>-- </marquee>, Linking to other page :< a> and <link> tags. **Text fomenting tags**: Font tag with attribute, Working with List tags<OL> and <UL>, **Creating Table:** Related tags with attribute., Creating HTML From with adding controls,	25%

	Frame and frameset tag, Putting Graphics on a Web page, Custom Background and colors.	
Unit - III	**Dynamic Web page Development** **Cascading Style Sheet:** Defining Style with HTML tags, Features of Style sheet, Types of Style Sheets: External, Internal, and Inline, Style Properties – CSS Text, Fonts, Border, Background, Margin, Padding, Display, Float, Shadow effects. Style Class & ID Selector, Hover Selector.	25%
Unit - IV	**Introduction to JavaScript:** Writing First Java Script, HTML and Java script, Variables: Rules for variable names, declaring the variable, assign a value to a variable, Scope of variable, Using Operators, Control Statements, JavaScript loops. **Types of JavaScript:** External, Internal. **JavaScript Functions:** Defining a Function, Returning value from function, User Define Function. **Working with Built-in Java Script Object:** Array object, Date Object, Document Object Model or DOM Methods, Documents, Elements, Forms, Window Object, Document Object, Handling Events in Java Script.	25%

Text Books:

1. Teach Yourself HTML 4 in 24 Hours By Dick Oliver (Tech media) 4th edition
2. Internet and Web Designing: According to DOEACC Syllabus for "O" Level Mac Millan India Ltd

Reference Books:

1. SamsTeachYourself HTML, CSS & JavaScript Web Publishing in One Hour a Day By LauraLemay, Rafe Coburn , Jennifer Kyrnin Seventh Edition
2. A Smarter Way to Learn JavaScript By Mark Myers
3. HTML & CSS: The Complete Reference, Fifth Edition By Thomas A. Powell

University Question Paper Scheme			
Q.1	Unit-I	Descriptive/ Long questions with choice	10 Marks
Q.2	Unit-II	Descriptive/ Long questions with choice	10 Marks
Q.3	Unit-III	Descriptive/ Long questions with choice	10 Marks
Q.4	Unit-IV	Descriptive/ Long questions with choice	10 Marks
Q.5	All Unit	Objective / Short Question / True –False etc.	10 Marks

Semester: II	**Program Code:MGTUG201**
Course Code: MS23MIDSCBCA202	**Course Title: PRACTICAL - Advance Programming in C**
Course Credits: 02	**Hours/Week:** 04
Exam Duration: 2 Hours	**Course Type:** Minor Stream
Internal Exam Marks: 25	**External Exam Marks:** 25

Total Teaching Hour: 45

Practical List

1. Write a program to check the given number is Palindrome or not using User Defined Function(UDF).
2. Write a program to find factorial of given no using UDF.
3. Write a program to find length of string using UDF.
4. Write a function prime that returns 1 if its argument is a prime and return zero Otherwise.
5. Write a program to find factorial of given no using recursion.
6. Write a program to display first 25 terms of Fibonacci series using recursion.
7. Write a program using a recursive function to find the GCD (Greatest Common Divisor) of twoPositive integer numbers.
8. Write a program that uses a UDF to sort an array of integer.
9. Write a program which explains the use of nesting of functions.
10. Define a structure type struct personal that would contain person name, date of joining andsalary using this structure to read this information and Display on screen.
11. Design a structure student records to contain Roll no, Name, City and Percentage obtained. Develop a program to read data for 5 students and Display them.
12. Write a program using structure within structure.
13. Write a program using structure within Function.
14. Write a program declare following structure member: name, code, age, weight and height. Read all members of the structure for 10 persons and find list of persons with all related data whose weight > 50 and height > 40 and print the same with suitable format and title.
15. Write a program to use of pointer in arithmetic operation.
16. Write a program to accept 10 numbers and display its sum using pointer.
17. Write a program to accept 10 numbers and sort them with use of pointer.
18. Write a program to swap the two values using pointers and UDF.
19. Write a program with structure and pointer.
20. Write a program using pointer to find the length of a string and compare two Strings.
21. Write a program using pointers to read an array of integers and print it's in reverse order.
22. Write a program using UDF and pointers to add two matrices and to return the resultantmatrix to the calling function.
23. Write programs which explain the use of memory allocation functions.
24. Create one text file store some information into it and print the same information on Terminal.
25. A file named data contains series of integer no. Write a c program to read that no. and then write all odd no into file named odd no. and write all even no into file named even no.

Display all the contents of these file on screen.

26. Write a c program to read data from keyboard write it to a file called input and Display data of input file on the screen.
27. Write a program that counts the number of characters and number of lines in a file.
28. Two files DATA1 and DATA2 contain lists of integers. Write a program to produce a third fileDATA which holds a single sorted, merged list of these two lists.
29. Write a c program to read mark data which contains roll no, name, sub1, sub2, sub3 file and generate the annual examination results are tabulated as follows:

Result

Roll no Name Sub1 Sub2 Sub3 Total per % Class

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30. Write a c program to input employee no, employee name and basic and to store output into empdata file in following format.

DA = 50% of Basic, HRA =10% of Basic, MA = 100, PF = 10% of Basic.

GROSS = BASIC + DA + HRA + MA NET-PAY = GROSS – PF

A/c Department

Emp-No	Name	Basic	DA	HRA	MA	PF	GROSS	NET-PAY
1	xyz	5000	2500	500	100	500	8100	7600
2								

31. Write a c program to read empin data file which contains empno, empname and basic. Tocreate empout data file as per practical no **30** format.
32. Write a program using fseek and ftell functions.
33. Write a C program to work as a dos type command using command line argument.
34. Write a C program to work as a dos copy command using command line argument.
35. Write a program which explains the use of macro.

Note: In the external examination, programs will be provided by the external examiner and may not be selected from the practical list.

University Practical Exam Scheme:

University Examination Duration: **2.5 Hours (Per Batch)**
Practical Marks: **10** Viva Marks: **10** Journal Marks: **5**

Semester: II	**Program Code:MGTUG201**
Course Code: MS23MIDSCBCA202A	**Course Title: PRACTICAL - Internet & Web Designing**
Course Credits: 02	**Hours/Week:** 04
Exam Duration: 2 Hours	**Course Type:** Minor Stream
Internal Exam Marks: 25	**External Exam Marks:** 25

Course Outcome:

After Completion of course,

- Students will gain a comprehensive understanding of the Internet's architecture, protocols, and key technologies.
- Students will develop practical skills in HTML and CSS for designing and structuring visually appealing web pages.
- Students will learn fundamental principles of web design and UX to create intuitive, user-friendly interfaces.
- Students will be introduced to client-side scripting with JavaScript and learn to use web development tools for interactive web page design.

Total Teaching Hour: 45

Practical List

1. Develop an HTML document for a web page of your favorite teacher. Design the page With anattractive background col or, text color and background image..
2. Develop an HTML document for a web page of your favorite National Leader. Design the pagewith an attractive color combination, with suitable headings and horizontal rules.
3. Write an HTML document with an example of Ordered List and Unordered List.
4. Write an HTML document with an example of Ordered List and Unordered List Using Nestedlist.
5. Write an HTML document with an example of Table format to print your Bio-Data.
6. Write an HTML document to create complex Table like Telephone Bill, Mark sheet, Time-table.
7. Write the Frameset tags and Frame tags for the following frameset.

<table>
<tr><td>Physics.html</td><td rowspan="2">Welcome.html</td><td>Maths.html</td></tr>
<tr><td>Chemistry.html</td><td>Computer.html</td></tr>
<tr><td>Biology.html</td><td rowspan="2">Heading.html</td><td rowspan="2">Account.html</td></tr>
<tr><td>Zoology.html</td></tr>
</table>

8. Develop a complete web page using Frames and Frameset which gives the Information aboutHospital.
9. Write an HTML code for designing the subscription form of mail account in the e mail Websitewith appropriate fields.
10. Write an example of External Style Sheet.
11. Write HTML program which contains Inline Style sheet for <p>, <h1> and <body> tags.
12. Write HTML program which contains Internal Style sheet for <p>, <h1> and <body> tags.

13. Describe yourself on a webpage and experiment with colors in bgcolor, text, and link, try outdifferent and sizes and also the other tags you studies so far, such as the rules tag as well as.
14. Write a HTML code to designate a section of text that is already formatted for display Preformatted text is usually used for compute output.

    Solution

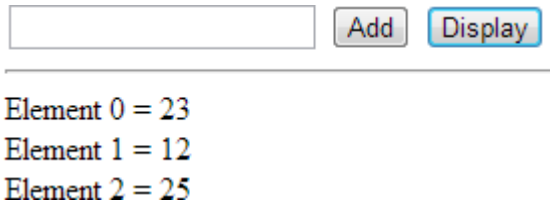
    ```
    <BODY>
    <P> C Programme</p>
    <Pre>
    #inc1ude<stdio.h>
    Void main 0
    {
    Printf ("Hello world");
    }
    </Pre>
    </BODY>
    ```

15. Write HTML code to develop a web page having background in blue and title "Wel come to myhome page" in red other color.
16. Create an HTML document of giving details of your name, age, telephone no, address andenrolment no, aligned in proper order.
17. Calculate a web page that provides links to five different web page or to entirely differentwebsites.
18. Write a HTML code for making table to containing different option for different questions.
19. Create form to fill information student.
20. Create a JavaScript code to display any message.
21. Create a JavaScript code using Arithmetic Operator, Assignment Operator, Comparison Operator, Logical Operator and String Operator.
22. Create a JavaScript code using Control Statement.
23. Create a JavaScript code to display

    5*1=5
    5*2=10
    5*10=50
    using for loop.

24. Create a JavaScript code using User Defined Function which will calculate the area of circle.
25. Write a JavaScript code to change the background color of the web page.
26. Write a JavaScript code to display Factorial of the given number.
27. Write a JavaScript code to add items to a blank array and compute the sum of integers anddisplay them.

Sample screen.



28. Create a JavaScript code to set paragraph background color.
29. Write a JavaScript code to open a new window and add some contents.
30. Write a JavaScript code to resize a window by specified pixels.

Note: In the external examination, programs will be provided by the external examiner and may not be selected from the practical list.

University Practical Exam Scheme:

University Examination Duration: **2.5 Hours (Per Batch)**
Practical Marks: **10** Viva Marks: **10** Journal Marks: **5**

Semester: II	**Program Code:MGTUG201**
Course Code: MS23MDCBCA203	**Course Title:** Electronic Commerce (E-Commerce)
Course Credits: 04	**Hours/Week:** 04
Exam Duration: 2 Hours	**Course Type:** Multi-Disciplinary Course
Internal Exam Marks: 50	**External Exam Marks:** 50

Course Outcome:

After Completion of course, Students able to,

- Understand the fundamental principles and business models of electronic commerce.
- Understand the Developing and designing functional and user-friendly e-commerce websites.
- Implement effective digital marketing strategies to promote and drive traffic to e-commerce platforms.

Total Teaching Hour: 45		
Sr. No.	**PARTICULAR**	**MARKS**
Unit - I	Introduction to E – Commerce, Examples of E –Commerce, Pure Vs PartialE-Commerce, History, Features of E-Commerce. Difference between traditional commerce and e-commerce, Advantages andLimitations to Organization, Consumer and Society. Development (Evolution) of E-Commerce, E-Commerce Indian Scenario/E– commerce in India., Various Technologies of E-Commerce, Future of E-Commerce	25%
Unit - II	Types of E-commerce, Electronic Data Inter-change (EDI), Driving Forces ofE-Commerce. **Introduction Various Model of E-Commerce:** B2C, B2B, C2B, C2C, B2Gand G2C. **Electronic Data Inter-change (EDI)** – Concept, Meaning & Definition, Features and Benefits. **Network Security (Only Concepts):** Firewalls, IP security, Virtual PrivateNetworks ,HTTPs, SSL, SETP	25%
Unit - III	**E – Payments and Security:** Introduction, Disadvantages of Traditional Payment System, Advantages and disadvantages of EPS. **A brief overview of the following**: Payment Cards with advantages and disadvantages, Credit card, Debit card, Smart Card (Electronic Credit Card), EFT, E–wallet, e-check and e-cash, Payment Gateway. **Security in cyberspace:** Kinds of threats and crimes, Credit Card Frauds.	25%
Unit - IV	**Technology in E – Commerce:** **Networking:** Concept, Meaning and Features. **Classification of Networks:** LAN, WAN, Internet, Intranet and Extranet **(Concept, Meaning and Benefits)**. **Recent Trends in E – Commerce**: Introduction to M–commerce, growth and future, advantages and limitations, Introduction and management of e– Enterprises, Ethical issues in e-commerce.	25%

Text Books & Reference Books:

1. HTML & CSS: The Complete Reference, Fifth Edition By Thomas A. Powell Web Commerce Technology Hand Book by: Daniel Minoli, Emma Minoli
2. Internet and Web designing by Rajesh Maheta, Ronak patel,Rajendra patel and Shyam Chavda (Nirav Prakashan),1st Edition.
3. E-commerce by Bhadresh Patel, Bharat Publication
4. E – Commerce by Mamta Bhusry, Firewall Media
5. Cryptography & Network Security by Atul Kahate (Tata McGraw Hill)

University Question Paper Scheme			
Q.1	Unit-I	Descriptive/ Long questions with choice	10 Marks
Q.2	Unit-II	Descriptive/ Long questions with choice	10 Marks
Q.3	Unit-III	Descriptive/ Long questions with choice	10 Marks
Q.4	Unit-IV	Descriptive/ Long questions with choice	10 Marks
Q.5	All Unit	Objective / Short Question / True –False etc.	10 Marks

Semester: II	**Program Code:MGTUG201**
Course Code: MS23AECBCA204	**Course Title:** Communication Skills-II
Course Credits: 02	**Hours/Week:** 02
Exam Duration: 1 Hours	**Course Type:** Ability Enhancement Course
Internal Exam Marks: 25	**External Exam Marks:** 25

Course Outcome:

After Completion of course,

- Students will develop clarity, fluency, and confidence in verbal communication, including engaging in discussions and delivering impactful presentations.
- Students will enhance active listening skills, develop strong interpersonal skills.
- Students will improve written communication skills and adapting writing style for different purposes.
- Students will develop cross-cultural communication skills and collaborative abilities to work effectively.

Total Teaching Hour: 25		
Sr. No.	**PARTICULAR**	**MARKS**
Unit - I	**Business Communication** Application for Job, Loan, Leave, Demanding Original Documents from Office Business Letters for Inquiry, reply, Quotation, Placing of Order, Complaint, Adjustment, Comprehension, Paragraph Writing	50%
Unit - II	**Listening and Speaking** Importance of Listening, Listening Process, Barriers of Listening, Guidelinesfor effective listening, Aspects of listening. Aspects of speaking, Speech preparation, What is group discussion?,Objectives of group discussion. What is interview, Types of interview, Preparing effective for a job interview,Conducting an interview, Appearing for an interview	50%

Text Books & Reference Books:

1. Business Communication - Meenakshi Raman & Prakash Singh – Oxford Publication
2. Business correspondence and report writing – R.C. Sharma & Krishna Mohan – Tata McGraw Hill
3. Contemporary English grammar structures and composition – David Grren – Macmillan
4. Business Communication – V.K. Jain & Omprakash Biyani – S.Chand
5. Essential of Business Communication – Rajendra Pal & J.S. Korlahalli – S. Chand
6. Developing Communication Skills – Krishna Mohan & Meera Benarji – McMilan Pub.

University Question Paper Scheme			
Q.1	Unit-I	Descriptive/ Long questions with choice	10 Marks
Q.2	Unit-II	Descriptive/ Long questions with choice	10 Marks
Q.3	All Unit	Objective / Short Question / True –False etc.	5 Marks

Semester: II	**Program Code:MGTUG201**
Course Code: MS23VACBCA205	**Course Title:** Integrated Personality Development Course - I
Course Credits: 02	**Hours/Week:** 02
Exam Duration: 1 Hours	**Course Type:** Value Added Course (VAC)
Internal Exam Marks: 25	**External Exam Marks:** 25

Course Outcome:

After completion of course students able to,

- Gain holistic value-based education that will enable them to succeed academically, professionally, and socially.
- Become self-aware, sincere, and successful in their many roles – as ambitious students, reliable employees, caring family members, and contributing Indian citizens.

Total Teaching Hour: 25		
Sr. No.	**PARTICULAR**	**MARKS**
Unit - I	**The Need for Values: (2 Hour)** Students will learn about the need for values as part of their holistic development to become successful in their many roles - as ambitious students, reliable employees, caring family members, and considerate citizens. **Module: Remarking Yourself** **Subject: Restructuring Yourself: (2 Hour)** Students learn how self-improvement enables them to secure a bright future for themselves. They will learn 6 powerful thought processes that can develop their intellectual, physical, emotional, and spiritual quotients. **Subject: Power of Habits: (2 Hour)** Students will undergo a study of how habits work, the habits of successful professionals, and the practical techniques that can be used to develop good habits in their life. **Module: Learning from Legends** **Subject: Tendulkar & Tata : (2 Hour)** Students will learn from the inspirational lives of India's two legends, Sachin Tendulkar and Ratan Tata. They will implement these lessons through relatable case studies. **Module: From House to Home:** **Subject: Listening & Understanding: (2 Hour)** Active listening is an essential part of academic progress and communication. Students will learn to listen with their eyes, ears, mind, and heart. **Module: Facing Failures** **Subject: Welcoming Challenges: (2 Hour)**	50%

	This lecture enables students to revisit the way in which they approach challenges. Through the study of successful figures such as Disney, Lincoln and Bachchan, students will learn to face difficulties through a positive perspective. **Module: My India My Pride** **Subject: Glorious Past - Part 1: (2 Hour)** India's ancient Rishis, scholars, and intellectuals have made tremendous contributions to the world; they developed an advanced, sophisticated culture and civilization which began thousands of years ago. Students will learn the importance of studying India's glorious past so that they could develop a strong passion and pride for our nation. **Subject: Glorious Past - Part 2: (2 Hour)** Our ancient concepts can be used to seek revolutionary ideas and generate inspiration. Students will develop a deeper interest in India's Glorious Past – by appreciating the need to read about it, research it, write about it, and share it.	
Unit - II	**Module: Significance of Failures: (2 Hour)** Failure is a student's daily source of fear, negativity, and depression. Students will be given the constructive skills to understand failure as a formative learning experience. **Module: Learning from Legends** **Subject: A.P.J. Abdul Kalam : (2 Hour)** Dr Kalam's inspirational life displayed legendary qualities which apply to students (1) Dare to Dream (2) Work Hard (3) Get Good Guidance (4) Humility (5) Use Your Talents for the Benefit of Others **Module: Soft Skills** **Subject: Networking & Leadership: (2 Hour)** Students are taught the means of building a professional network and developing a leadership attitude. **Subject: Project Management: (2 Hour)** Students will learn the secrets of project management through the kshardham case study. They will then practice these skills through an activity relevant to student life. **Module: Remaking Yourself** **Subject: Handling Social Media: (2 Hour)** Students will learn how social media can become addictive and they will imbibe simple methods to take back control. **Module: Facing Failures** **Subject: Power of Faith: (2 Hour)** Students will learn about the power and necessity of faith in our daily lives. **Module: From House to Home** **Subject: Bonding the Family: (2 Hour)** Students will understand the importance of strong family relationships.	50%

	They will learn how to overcome the generation gap and connect with their family more. **Module: Selfless Service** **Subject: Seva: (2 Hour)** Students will learn that performing seva is beneficial to one's health, well-being, and happiness. It also benefits and inspires others.	

Text & Reference Books:

- IPDC Workbook – I

University Question Paper Scheme			
Q.1	Unit-I	Descriptive/ Long questions with choice	10 Marks
Q.2	Unit-II	Descriptive/ Long questions with choice	10 Marks
Q.3	All Unit	Objective / Short Question / True –False etc.	5 Marks

Semester: II	**Program Code:MGTUG201**
Course Code: MS23SECBCA206	**Course Title:** Mathematics-II
Course Credits: 02	**Hours/Week:** 02
Exam Duration: 1 Hours	**Course Type:** Skill Enhancement Course
Internal Exam Marks: 25	**External Exam Marks:** 25

Course Outcome:

After Completion of course,

- Students will develop a solid understanding of fundamental mathematical concepts, including arithmetic, algebra, geometry, and calculus.
- Students will enhance their problem-solving skills and develop analytical thinking abilities, enabling them to apply mathematical principles to real-world situations and formulate logical solutions.
- Students will cultivate skills in mathematical reasoning and proof, learning to construct logical arguments and proofs to validate mathematical statements and theorems.
- Students will learn to create mathematical models to represent and analyze real-world phenomena, as well as interpret and draw conclusions from mathematical data.

Total Teaching Hour: 25		
Sr. No.	**PARTICULAR**	**MARKS**
Unit - I	**Matrices and Determinants** Introduction and Definition of Matrix. **Types of matrices:** Row and Column matrices, Square matrix, Diagonal matrix, Scalar matrix, Identity matrix, Null matrix, Symmetric and Skew-symmetric matrices, Triangular matrix (Upper triangular matrix and Lower triangular matrix), Transpose of a matrix, Equality of matrices. **Arithmetic Operations:** Addition, Subtraction, Scalar Multiplication, Multiplication of Matrices, Orthogonal Matrix, Representation of a matrix as a sum of a Symmetric and Skew-symmetric matrices Introduction of Determinants with basic properties, Invertible matrix, Co-factor matrix, Adjoint Matrix, Computation of Inverse matrix using definition Simultaneous solution of set of linear equations using matrix inversion method for two and three variables	50%
Unit - II	**Sequence and Series** Introduction to Sequence and Series, Representation of Sequence and Series,Progression: Arithmetic Progression(A.P.), Common difference, nth term of an A.P., The sum of first n terms of an A.P., Geometric Progression(G.P.), Common Ratio, nth term of a G.P., The sum of first n terms of a G.P., Harmonic Progression(H.P.), Relationship between Arithmetic, Geometric and Harmonic Mean	50%

Text Books & Reference Books:

1. Discrete Mathematics -Revised 3rd Edition Authors: Seymour Lipschutz and Marc Lars Lipson, Publication: McGraw-Hill Education (India) Pvt Limited
2. Elements of Discrete Mathematics -3rd Edition Authors: Chung Laung Liu and Durga Prasad Mohapatra Publication: McGraw-Hill Education (India) Pvt Limited
3. Discrete Mathematics -3rd Edition Author: J. K. Sharma Publication: Macmillan Publishers India Limited
4. Business Mathematics -Latest Edition Authors: D. C. Sancheti and V. K. Kapoor Publication: Sultan Chand & Sons

University Question Paper Scheme			
Q.1	Unit-I	Descriptive/ Long questions with choice	10 Marks
Q.2	Unit-II	Descriptive/ Long questions with choice	10 Marks
Q.3	All Unit	Objective / Short Question / True –False etc.	5 Marks