Re-Accredited 'B++' 2.86 CGPA by NAAC
VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India.
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
યુનિવર્સિટી કેમ્પસ, ઉધના-મગદલ્લા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.
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-:પરિપત્ર:-

યુનિવર્સિટી સંલગ્ન તમામ કોમ્પ્યુટર સાયન્સ વિદ્યાશાખા હેઠળની B.Voc.(IT) કોર્સ ચલાવતી કોલેજોનાં આચાર્યશ્રીઓને જણાવવાનું કે, શૈક્ષણિક વર્ષ ૨૦૨૬–૨૭ થી અમલમાં આવનાર B.Voc.(IT)(Honours)Sem.-1 & 2 નો પેટા સમિતિ દ્વારા તૈયાર કરવામાં આવેલ અભ્યાસક્રમ કોમ્પ્યુટર સાયન્સ વિષયની અભ્યાસ સમિતિની તા.૨૫/૦૩/૨૦૨૬ ની સભાના ઠરાવ ક્રમાંકઃ૧૨ થી મંજૂર કરી કોમ્પ્યુટર સાયન્સ ફેકલ્ટીને કરેલ ભલામણ કોમ્પ્યુટર સાયન્સ ફેકલ્ટીની તા.૨૯/૦૪/૨૦૨૬ ની સભાના ઠરાવ ક્રમાંકઃ૦૯ થી સમિતિને સુધારો કરવા રીફર કરેલ અભ્યાસક્રમ કોમ્પ્યુટર સાયન્સ વિષયની અભ્યાસ સમિતિના ચેરમેનશ્રીએ અભ્યાસ સમિતિવતી અને કોમ્પ્યુટર સાયન્સ ફેકલ્ટીના ઈ.ચા.ડીનશ્રીએ ફેકલ્ટીવતી મંજૂર કરી એકેડેમિક કાઉન્સિલને કરેલ ભલામણ એકેડેમિક કાઉન્સિલની તા.૦૭/૦૫/૨૦૨૬ ની સભાનાં ઠરાવ ક્રમાંકઃ૬૨ થી મંજૂર કરેલ છે. જેનો અમલ કરવા આથી જાણ કરવામાં આવે છે.

બિડાણઃ ઉપર મુજબ

કુલસચિવ(ઇ/ા

ક્રમાંકઃઓથો./પરિપત્ર/સિલેબસ/૧૦૦૪૦/૨૦૨૬
તા.૦૧/૦૬/૨૦૨૬

પ્રતિ,
(૧) B.Voc.(IT)કોર્સ ચલાવતી તમામ કોલેજોના આચાર્યશ્રીઓ.
.....આપશ્રીની કોલેજના સંબંધિત શિક્ષકો તથા વિદ્યાર્થીઓને જણ કરી અમલ કરવા સારૂ.
(૨) ઈ.ચા.ડીનશ્રી, કોમ્પ્યુટર સાયન્સ વિદ્યાશાખા.
(૩) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.
(૪) એકેડેમિક વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.
.....તરફ જાણ તેમજ અમલ સારૂ.

Veer Narmad South Gujarat University, Surat

Computer Science and Information Technology Faculty

Syllabus for (Semester-I and Semester-II) of B.Voc.(IT)(Honours)

As per NEP-2020

To be implemented from Academic Year: June, 2026-2027 (Including Winter Session)

Veer Narmad South Gujarat University, Surat

Bachelor of Vocation in Information Technology
(B.Voc. (IT)(Honours))

Under the Faculty of
Computer Science and Information Technology

Name of Program:	Bachelor of Vocation in Information Technology (Honours)
Abbreviation:	B.Voc.(IT) (Honours): Four Year Integrated Program with Multilevel Entry and Exit option
Multi-level Exit Criteria:	i) Under Graduate Certificate Diploma in Information Technology: If the student wish to exit after completion of First year (Semester-1 and Semeter-2) without any back-log and secure additional 4 credits from work based skill oriented university approved courses / vocational courses / Summer internship / Apprenticeship in addition to 6 credits from skill-based courses earned during first and second semester. ii) Diploma in Information Technology: If the student wish to exit after completion of Second year (Semester-1 to Semeter-4) without any back-log and secure additional 4 credits from work based skill oriented university approved courses / Vocational courses / Summer internship / Apprenticeship offered at end of first or second year in addition to 6 credits from skill-based courses earned during first four semesters. iii) B.Voc.(IT) (Bachelor of Vocation in Information Technology): After Successfully completion of Semester-1 to Semester-6 without any back-log and secure additional 4 credits from work based skill oriented university approved courses / Vocational courses / Summer internship / Apprenticeship offered at end of first or second year in addition to 6 credits from skill-based courses earned during first four semesters.
Multi-Level Entry Criteria:	As per the norms of the Veer Narmad South Gujarat University.
Duration:	4 year of B.Voc.(IT) (Honours) degree program with multi-level exit options at 1st, 2nd and 3rd Year to obtain Certificate in Information Technology, Diploma in Information Technology and B.Voc.(IT) Degree and 4th year for Honours respectively.
Eligibility:	10+2 or equivalent , in any stream
Objective of the Program:	B.Voc.(IT)(Honours) is skill-based undergraduate degree program in the field of Information Technology. The B.Voc(IT) is specifically designed to equip students with industry need skills and make them to job ready. Main objective of this program is to emphasize practical work, industry internships and software development project in various aspect of the area of Information Technology. The program is designed to produce IT professional those who can get technical skills in area of programming, database management, software engineering, networking and web development. It also aims to focus on problem solving, communication skills and critical thinking.

Program Outcome:	**PO1:** Understand, analyze and develop computer programs in the areas related to algorithm, web design and networking for efficient design of computer based system. **PO2:** Enhancing the problem solving, logical, reasoning and analysis capabilities of a problem and integrate the ability with the coding using specific computer programming languages. **PO3:** To generate Understanding regarding the core and fundamental ideas about the computer platforms, operating systems, software design concepts, networking concepts and advanced and emerging technologies. **PO4:** Design, implement and evaluate a computer-based system, processing, component or program to meet desired goal with the help of various programming languages, application software, packages, tools, databases on various platforms. **PO5:** An ability to apply design and development principles in construction of software systems of varying complexity using various algorithmic principles, modeling, coding and design of computer-based systems. **PO6: :-**Apply standard software engineering practices and strategies in software project development using open source programming environment to deliver a quality of product for business success. Overall, the program outcomes aim to produce graduates who can work in the IT sector as database administrator, system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.
Program Specific Outcome:	**PSO1:** Developing understanding about the fundamentals of core concepts of logic developments, critical thinking and problem solving capabilities. emphasis on effective communication. **PSO2:** Improving logical and practical concepts using various tools and technologies, coding concepts and implementation of coding to solve the problems. **PSO3:** Development of team building concepts and working in team with positive approach, enhancing the mindset to contribute as an individual to the team. Improving interpersonal skills. **PSO4:** Improving student's Understanding related to technical problems and enhancing their capabilities to address the problems to turn into solutions through various possible ways by enhancing critical thinking ability. **PSO5:** Develop students to capabilities for self-learning, skill development through self-practicing and problem solving abilities. **PSO6:** Enhance the passion among the students for updating knowledge, innovative ideas. Implementing the knowledge in applied areas and research areas by understanding the real world problems, addressing the real world problems and their possible solutions that lead to build a successful Professional career.

	PSO7: Develop students to work effectively with a range of current, standard, Office Productivity software applications.

PO and PSO mapping:	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
PO1							
PO2							
PO3							
PO4							
PO5							
PO6							

Medium of Instruction:	English
Program Structure:	Semester-wise Breakup of the course is given as follows :

Program Structure	Semester-wise break up for the courses:

SEMESTER – 1

Course Code	**Course Title**	**Course Category**	**Level of Course**	**Course Credits**	**Teaching Hours/week**	
				Th.+Pra.	Theory	Practical/ Fieldwork /Project/ Internship
BVOC101	Communication Skills (AEC-01) [Modern Indian Language (MIL) & English language focused on language and communication skills.]	Ability Enhancement Course	100-199 Foundation/ Introductory	2	2	0
BVOC102	Basic Mathematics	Multi-Disciplinary/ Inter-Disciplinary	100-199 Foundation/ Introductory	4	4	0
BVOC103	Fundamental of Computer & Peripheral Devices	Minor Course	100-199 Foundation/ Introductory	4	4	0
BVOC104	Introduction to Programming Language in C	Major Course	200-299 Intermediate Level	4	2	4
BVOC105	Database Management System	Major Course	200-299 Intermediate Level	4	2	4
	Practical (Based on Course Code:BVOC104 & BVOC105Equally divided)	No separate credits allocated for practical. The Practical exam/viva-voce will be based on Course BVOC104 and BVOC105				
BVOC106	Skill Enhancement Course-I (SEC-01)	Skill Enhancement Course	100-199 Foundation / Introductory	2	-	4
BVOC107	Bharatiya Knowledge Systems – an Introduction (VAC-01)	Value Addition Course	100-199 Foundation/ Introductory	2	2	-
Other Activities	The student is expected to participate in activities related to National Service Scheme (NSS), National Cadet Corps (NCC), adult education/literacy initiatives, mentoring school students, Elderly literacy program/ Environment preservation activities and other similar activities.			-	-	-
Total				**22**	**16**	**12**

Course Code	Course Title	Course Credit	University Exam Type	Exam Duration	External (SEE) Marks	Internal (CCE) Marks	Total Marks
BVOC101	Communication Skills	2	Theory / Written	1 Hour	25	25	50
BVOC102	Basic Mathematics	4	Theory / Written	2 Hours	50	50	100
BVOC103	Fundamental of Computer & Peripheral Devices	4	Theory / Written	2 Hours	50	50	100
BVOC104*	Introduction to Programming Language in C*	4	Theory / Written: Practical:	1 Hour 2 Hours	25 25	25 25	100
BVOC105*	Database Management System*	4	Theory / Written: Practical:	1 Hour 2 Hours	25 25	25 25	100
BVOC106-01# OR BVOC106-02#	Office Automation Tools OR Introduction to Google Products	2	Practical	2 Hours	25	25	50#
BVOC107#	Bharatiya Knowledge Systems – an Introduction	2	Theory	1 Hour	25	25	50#
Total		22			275	275	550

For Practical and Project:

- Batch Size – 40 students
- Practical includes Practical sessions for course-BVOC104 and course-BVOC105. **Minimum** Eight Practical hours (4 hours for course-BVOC104 and 4 hours for course-BOC105) per week should be allocated per batch.
- The journal must be certified by the concerned faculty and by the Head of the Department, failing which the student will not be allowed to appear for External Practical Examination.

Internal/External Evaluation :

CCE (Continuous and Comprehensive Evaluation): To be conducted by college.

SEE (Semester End Evaluation): To be conducted by University

Major Course: Major discipline is the main focus (Core) dominant subject and the degree will be awarded in that discipline. Students must secure a prescribed number of credits (50% of total credits) through core courses in the major discipline. Students can choose the courses from the pool of courses.

Minor Course: Minor discipline is the broader understanding course beyond the major discipline course. It contains generic-electives for students to choose from the pool of courses. It helps students to gain broader knowledge in addition to relevant major disciplines courses as per their choices. Minor subjects may be from same or different disciplines. Student may make choices according to their interest/need, from ODL courses also.

Interdisciplinary/Multidisciplinary/Allied Courses: This is constituent discipline of the major courses and it helps learners to acquire core competence in relevant or any other independent courses of their choices. This course may be major specific or other discipline specific. Learner shall have option to choose the course from available basket of approved courses provided by the university or from any other institutions as the learner's choice. The Credit allocated for these courses is 12 credits of total credits for 3 years' bachelor's degree and four years' bachelor's degree programme.

Internship: A student who wish to exit after successfully completion of first year (Semester-1 and Semester-2) without any backlog is required to obtain Four credits at the end of the year either through the summer internship or university approved skill based certificate courses(two courses of 2-credits each or one 4-credit course). Student is required to enroll for the certificate courses separately by paying the course fees as decided by the college/institute. For summer training, the Institute/college will grant the permission and evaluate the training outcomes. Based on satisfactory completion of the summer training, the Institute head will recommend to the university to grant four credits for summer training. [The internship cost/fees will be bear by the student.]

Skill Enhancement Course: As per NEP (National Education Policy-2020), it is mandatory for students to select a 2 credit skill enhancement course from offered course list. It will be mandatory for the student to opt minimum one 2-credit Skill enhancement course outof offered courses list (i.e.106-01 or 106-02) during semester-1.

Value Addition Course: As per NEP (National Education Policy-2020), it is mandatory for students to do 2 credit Value Addition Course during semester-1.

 # Marks: The scale on which the students will be evaluated. The evaluation methodology will be continuous evaluation and the score obtained will reflect in mark-sheet but not considered for SGPA or CGPA.

* Major Practical based Subjects: Course BVOC104 and BVOC105 are major courses. Both these courses are carrying 4 credits (2 Hours of theory and 4 hours of practical per week). Both these subjects carry 100 marks of exam weightage (50 theory and 50 practical). External and Internal distribution of marks are in ratio of 50:50 respectively. Students are required to acquire minimum passing marks from theory and practical collectively. Practical exams for course-BVOC104 (2 hours duration) and course-BVOC105 (2 hours duration) will be conducted on same day.
External Theory Practical exam marks (25 marks each for course-BVOC104 and course- BVOC105)

Division of Theory Internal marks (CCE):

For courses having 50 marks as Internals:

Class Assignment/Active Learning: 07 marks + Home Assignment/Field Assignment: 08 marks + Attendance: 10 marks + Class Test: 25 marks

For courses having 25 marks as Internals:

Class Assignment/Active Learning: 03 marks + Home Assignment/Field Assignment: 03 marks + Attendance: 04 marks + Class Test: 15 marks

For Practical Internal marks (CCE):

For courses having 25 marks Internals:
Attendance: 5 marks + Viva-voce/Quiz: 10 marks + Lab-work Assessment/Practical: 10 marks

Division of Practical External exam marks (SEE):

For 25 marks Externals:
Division of marks is: Exam evaluation: 20 marks + Viva-voce: 5 Marks

Practical examination will be conducted for course code-BVOC104 and course code-BVOC105 separately on same day.Students are required to pass in combined head (Theory + Practical) for each course.
Students are required to remain present in internal and external theory and practical exams for course code – BVOC104 and BVOC105 mandatorily.

Program Passing Rules:	As per University rules.
Program Fees: (Per Semester) (One time fees and exam fees are additional as prescribed by the university)	Semester Tuition Fees : As per norms of University Semester Laboratory Utilization fees : Rs.1,500/- [Other one time/affiliation/exam fees and other fees under various heads, will be as per the norms of the University.]

SEMESTER – 2

Course Code	Course Title	Course Category	Level of Course	Course Credits	Teaching per week	
					Theory	**Practical/ Fieldwork/ Project/ Internship**
BVOC201	Professional Development and Ability Enhancement **(AEC-02)** [Modern Indian Language (MIL) & English language focused on language and communication skills.]	Ability Enhancement Course	100-199 Foundation/ Introductory	2	2	0
BVOC202-01 **OR** BVOC202-02	Computerized Financial Accounting Organizational Structure & Behaviour	Multi-Disciplinary	100-199 Foundation/ Introductory	4	4	0
BVOC203	Operating System	Minor Course	100-199 Foundation/ Introductory	4	4	0
BVOC204	Object Oriented Programming with C++	Major Course	200-299 Intermediate Level	4	2	4
BVOC205	Basics of Python Programming	Major Course	200-299 Intermediate Level	4	2	4
	Practical (Based on Course Code: BVOC204 & BVOC205 : Equally Divided)	No separate credits allocated for practical. The Practical exam/viva-voce will be based on Course BVOC204 and BVOC205				
BVOC206	Skill Enhancement Course-II (SEC-02)	Skill Enhancement Course	100-199 Foundation / Introductory	2	0	4
BVOC207	Environment -1 (VAC-02)	Value Addition Course	100-199 Foundation / Introductory	2	2	-
Other Activities	The student is expected to participate in activities related to National Service Scheme (NSS), National Cadet Corps (NCC), adult education/literacy initiatives, mentoring school students, Elderly literacy program / Environment preservation activities and other similar activities.			-	-	-
Total				**22**	**16**	**12**

Course Code	Course Title	Course Credit	University Exam Type	Exam Duration	External (SEE) Marks	Internal (CCE) Marks	Total Marks
BVOC201	Professional Development and Ability Enhancement (AEC -02)	2	Theory/Written	1 Hour	25	25	50
BVOC202-01 **OR** BVOC202-02	Computerized Financial Accounting **OR** Organizational Structure & Behaviour	4	Theory/Written	2 Hours	50	50	100
BVOC203	Operating Systems	4	Theory/ Written	2 Hours	50	50	100
BVOC204*	Object Oriented Programming with C++	4	Theory/Written : Practical :	1Hour 2 Hours	25 25	25 25	100
BVOC205*	Basics of Python Programming	4	Theory/ Written Practical:	1Hour 2 Hours	25 25	25 25	100
BVOC206-01# BVOC206-02#	Web Designing **OR** Application of AI for Students	2	Practical	2 Hours	25	25	50#
BVOC207	Environment -1(VAC-02)#	2	Theory	1 Hour	25	25	50#
Total		**22**			**275**	**275**	**550**

For Practical and Project:

- Batch Size – 40 students.
- Practical includes Practical sessions for course-BVOC204 and course-BVOC205. **Minimum** Eight Practical hours (4 hours for course-BVOC204 and 4 hours for course-BOC205) per week should be allocated per batch.
- The journal should be certified by the concerned faculty and by the Head of the Department, failing which the student will not be allowed to appear for External Practical Examination.

Internal/External Evaluation :

CCE (Continuous Comprehensive Evaluation): To be conducted by College.
SEE (Semester End Evaluation): To be conducted by University.

Major Course: Major discipline is the main focus (Core) dominant subject and the degree will be awarded in that discipline. Students must secure a prescribed number of credits (50% of total credits) through core courses in the major discipline. Students can choose the courses from the pool of courses. The number of courses (subjects) in Major may vary from semester to semester.

Minor Course: Minor discipline is the broader understanding course beyond the major discipline course. It contains generic- electives for students to choose from the pool of courses. It helps students to gain broader knowledge in addition to relevant major disciplines courses as per their choices. Minor subjects may be from same or different disciplines. Student may make choices according to their interest/need, from ODL courses also.

Interdisciplinary/Multidisciplinary/Allied Courses: This is constituent discipline of the major courses and it helps learners to acquire core competence in relevant or any other independent courses of their choices. This course may be major specific or other discipline specific. Learner shall have option to choose the course from available basket of approved courses provided by the university or from any other institutions as the learner's choice. The Credit allocated for these courses is 12 credits of total creditsfor 3 years' bachelor's degree and four years' bachelor's degree programme.

Internship: A student who wish to exit after successfully completion of first year (Semester-1 and Semester-2) without any backlog is required to obtain Four credits at the end of the year either through the summer internship or university approved skill based certificate courses(two courses of 2-credits each or one 4-credit course). Student is required to enroll for the certificate courses separately by paying the course fees as decided by the college/institute. For summer training, the Institute/college will grant the permission and evaluate the training outcomes. Based on satisfactory completion of the summer training, the Institute head will recommend to the university to grant four credits for summer training. [The internship cost/fees will be bear by the student.]

Ability Enhancement Course (AEC): To be offered to students to achieve competency in a Modern Indian Language and English Language focused on language and communication skills. It may be a major specific course. The Credit allocated for these courses is 10 credits of total credits for 3years' bachelor's degree and four years' bachelor's degree programme.

Skill Enhancement Course: As per NEP (National Education Policy-2020), it is mandatory for students to select a 2credits skill enhancement course from offered course list. It will be mandatory for the student to opt minimum one 2-credit Skill enhancement course out of offered courses list (i.e. BVOC206-01, BVOC206-02) during semester-2.

Value Addition Course: As per NEP (National Education Policy-2020), it is mandatory for students to do 2-credits Value Addition Course during semester-2.

#Marks: The scale on which the students will be evaluated. The evaluation methodology will be continuous evaluation and the score obtained will reflect in mark-sheet but not considered for SGPA or CGPA.

***Major Practical based Subjects:** Course BVOC204 and BVOC205 are major courses. Both these courses are carrying 4 credits (2 hours of theory and 4 hours of practical per week). Both these subjects carry 100 marks of exam weightage (50 theory and 50 practical). External and Internal distribution of marks are in ratio of 50:50 respectively. Students are required to acquire minimum passing marks from theory and practical collectively. Practical exams for course-BVOC204 (2hours duration) and course-BVOC205 (2 hours duration) will be conducted on same day.

Division of Theory internal marks (CCE) :

For courses having 50 marks as Internals :

Class Assignment/Active Learning: 07 marks + Home Assignment/Field Assignment: 08 marks +
Attendance: 10 marks + Class Test: 25 marks

For courses having 25 marks as Internals :

Class Assignment/Active Learning: 03 marks + Home Assignment/Field Assignment: 03 marks +
Attendance: 04 marks + Class Test: 15 marks

For Practical Internal marks (CCE) :

For courses having 25 marks Internals :
Attendance: 5 marks + Viva-voce/Quiz: 10 marks + Lab-work Assessment/Practical: 10 marks

Division of Practical External exam marks (SEE) :

For 25 marks Externals :

Division of marks is: Exam evaluation: 20 marks + Viva-voce: 5 Marks.

Practical examination will be conducted for course code-BVOC204 and course code-BVOC205 separately on same day.Students are required to pass in combined head (Theory + Practical) for each course.
Students are required to remain present in internal and external theory and practical exams for course code – BVOC204 and BVOC205 mandatorily.

Program Passing Rules:	As per University rules.
Program Fees: (Per Semester) (One time fees and exam fees are additional as prescribed by the university)	Semester Tuition Fees : As per norms of University Semester Laboratory Utilization fees : As per norms of University [Other one time/affiliation/exam fees, will be as per the norms of the University]

Structure of F.Y. B.Voc.(IT) Program (Semester-1)

Course Category	Course Code	Course Title	Marksheet Title in English	Level of Course	Teaching Hours/Week		Exam Duration		Credit		Internal Marks		External Marks		Total Makrs	
					TH	PR	TH	PR	TH	PR	TH	PR	TH	PR	TH	PR
MAJOR	BVOC104 BVOC105	Introduction to Programming Language in C Database Management System	Introduction to Programming Language in C Database Management System	200-299 Intermediate Level	02	04	01	02	02	02	25	25	25	25	50	50
MINOR	BVOC103	Fundamental of Computer & Peripheral Devices	Fundamental of Computer & Peripheral Devices	100-199 Foundation / Introductory	04	--	02	--	04	--	50	--	50	--	100	--
MDC	BVOC102	Basic Mathematics	Basic Mathematics	100-109 Multi-Disciplinary / Inter Disciplinary	04	--	02	--	04	--	50	--	50	--	100	--
AEC	BVOC101	Communication Skills	Communication Skills	100-199 Foundation/ Introductory	02	--	01	--	02	--	25	--	25	--	50	--
SEC	BVOC106-01 OR BVOC106-02	Office Automation Tools OR Introduction to Google Products	Office Automation Tools OR Introduction to Google Products	100-199 Foundation / Introductory	--	04	--	02	--	02	--	25	--	25	--	50
VAC/ VAC-IKS	BVOC107	Bharatiya Knowledge Systems – an Introduction	Bharatiya Knowledge Systems – an Introduction	100-199 Foundation/ Introductory	02	--	01	--	02	--	25	--	25	--	50	--
OTHER, IF ANY, SPECIFY																

Structure of F.Y. B.Voc.(IT) Program (Semester-2)

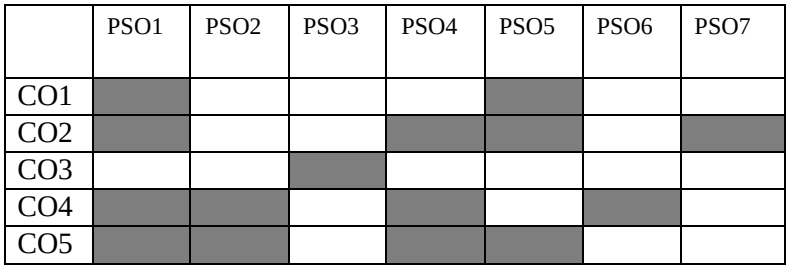
Course Category	Course Code	Course Title	Marksheet Title in English	Level of Course	Teaching Hours/Week		Exam Duration		Credit		Internal Marks		External Marks		Total Makrs	
					TH	PR	TH	PR	TH	PR	TH	PR	TH	PR	TH	PR
MAJOR	BVOC204 BVOC205	Object Oriented Programming with C++ Basics of Python Programming	Object Oriented Programming with C++ Basics of Python Programming	200-299 Intermediate Level	02	04	01	02	02	02	25	25	25	25	50	50
MINOR	BVOC203	Operating System	Operating System	100-199 Foundation / Introductory	04	--	02	--	04	--	50	--	50	--	100	--
9MDC	BVOC202-01 OR BVOC202-02	Computerized Financial Accounting OR Organizational Structure & Behaviour	Computerized Financial Accounting OR Organizational Structure & Behaviour	100-199 Multi-Disciplinary / Inter Disciplinary	04	--	02	--	04	--	50	--	50	--	100	--
AEC	BVOC201	Professional Development and Ability Enhancement	Professional Development and Ability Enhancement	100-199 Foundation/ Introductory	02	--	01	--	02	--	25	--	25	--	50	--
SEC	BVOC206-01 OR BVOC206-02	Web Designing OR Application of AI for Students	Web Designing OR Application of AI for Students	100-199 Foundation / Introductory	--	04	--	02	--	02	--	25	--	25	--	50
VAC/ VAC-IKS	BVOC207	Environment -1 (VAC-02)	Environment -1	100-199 Foundation/ Introductory	02	--	01	--	02	--	25	--	25	--	50	--
OTHER, IF ANY, SPECIFY																

Semester - 1

Course Code: BVOC101

Course Title: COMMUNICATION SKILLS

[Subject code-2411001201050001]

Course Code	BVOC101
Course Title	Communication Skills
NCrF Credit level	4.5
Course Type	Ability Enhancement Course (AEC-01) [Modern Indian Language (MIL) & English language focused on language and communication skills.]
Course Subtype	Employability
Subject Type	Intra disciplinary
Level of Course	100-199 (Foundation/Introductory)
Credit	2
Course Category	Ability Enhancement Course (AEC-01)
Teaching per Week	2 Hours
Level of Course	100-199 (Foundation / Introductory)
Minimum weeks per Semester	15 (Including Class work, examination, preparation etc.)
Nature of Subject	Theory: 2 Hours
Implementation Year	A.Y. 2026-27
Pre-requisite	Basic Knowledge of English at H.Sc. (10+2) Level
Purpose of Course	Good communication skills help to improve student's skills and develop deeper bonds with others. This course will help students to improve English Communication skills.
Objective	✓ To understand the different aspects of communication using the four macro skills – LSRW (Listening, Speaking, Reading, Writing) ✓ the understanding of the essential components of effective communication ✓ Increased self-awareness of one's ability to communicate at all times ✓ Emphasize the development and enhancement of skills such as communication, ability to participate / conduct discussion and debate
Course Outcome	CO1: Students will be able to improve their communication skills. CO2: To make students understand the importance of effective communication skills in personal and professional life. CO3: Students' will be able to enhance their ability in reading, writing, listening and speaking as per the demand of business world. CO4: To enhance students individual and team work productivity CO5: To enhance the interest in students for updating knowledge to solve problems, and lead to build a successful professional career.
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	
Course Outcome	After completing this course, students will be able to use their skills on varied roles such as computer operator, software engineer etc.
Course Content	**UNIT-1: Foundation of Communication** 1.1 Definition and Meaning, Overview of communication 1.2 Modes of Communication 1.3 Process of Communication

	1.4 Features and Process of Professional communication 1.5 Different forms of communication 1.6 Communication Network in an Organization 1.7 Barriers to communication
	UNIT-2: Improving Listening Skills 2.1 Listening Vs Hearing 2.2 Effective Listening 2.3 Process of Listening 2.4 Types of Listening 2.5 Improving Listening Comprehension 2.6 Overcoming Listening Challenges 2.7 Barriers to Effective Listening **UNIT-3: Oral Communication Skills** 3.1 Non-verbal Communication 3.2 Group –discussions- Conducting G.D on given topics(Oral Practical) 3.3 Principles of Effectives Spoken Communication 3.4 Public speaking 3.5 Practicing Articulation and Voice Modulation **UNIT-4: Reading Skills** 4.1 Need for Developing Efficient Reading 4.2 Benefits of Effective Reading 4.3 Critical Analysis of Written Material 4.4 Types of Reading 4.5 Reading Comprehension **UNIT-5: Written Communication Skills** 5.1 Resume writing 5.2 The art of Condensation 5.3 Business Reports 5.4 E-mail writing 5.5 Blog Writing 5.6 Editing and Proof Reading Techniques
Reference Books	1. Handbook of practical Communication skills – Chrisle W. JAICO 2. Basic Managerial Skills for all – S. J. McGrath - PHI 3. Reading to learn – Sheila Smith & Thomas M. Methuen (London) 4. Communication conversation Practice _ Tata McGraw Hill 5. Communication in English – R. P. Bhatnagar & R. T. Bell – Orient Longman 6. Good English – G. H. Vallins – Rups & Co 7. Let's talk English – M. I. Joshi 8. Essentials of Business Communications – Pat & Sons, S. Chand 9. Advance Communicative English, Krishna Mohan and Meenakshi Raman Macmillan Education 10. Effective Business Communication, Cambridge,2020, Samson,T. Alexander, Susan. Thomas Mary Sowmya.
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	**50% Internal assessment** - Attendance, Class and home Assignments, Unit tests **50% External assessment** - Written Theory exam

Course Code: BVOC102
Course Title: BASIC MATHEMATICS
[Subject code-2411001201040001]

Course Code	BVOC102
Course Title	Basic Mathematics (Multi-Disciplinary Course – 01) [Title of the course will be the one selected by the student from courses offered by college/institute out of the course basket offered by the University under the Multi-Disciplinary courses or Inter-disciplinary courses.]
NCrF Credit level	4.5
Credits	4
Course Type	Multidisciplinary Course (MDC)
Course subtype	Employability
Subject Type	Intra disciplinary
Level of Course	100-199 (Foundation / Introductory)
Teaching per Week	4 Hrs.
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Implementation Year:	A.Y. 2026-2027
Purpose of Course	To impart fundamental knowledge and develop mathematical abilities relevant to applications relevant to Information Technology. [Student will opt any one course of multi-disciplinary nature from other than the Computer Science and Application faculty. The course will be offered by the institute/college passed by the Board of Studies of University faculties other than the computer science and application faculty.]
Course Objective	To Provide a foundation in mathematical concepts and methods those are relevant to Computer Applications and IT, and develop the ability to apply mathematical knowledge and techniques to solve problems in computing.
Pre-requisite	Knowledge of Fundamentals of Mathematics of 10th Grade Level
Course Outcomes	**CO1:** Define and explain the fundamental concepts of Mathematical Abilities in organizations. **CO2:** Students can apply set theory concepts to real-world scenario, such as analyzing survey data. **CO3:** Enhance student's logical reasoning to solve problems in various contexts, such as puzzles or legal arguments by learning Truth table. **CO4:** Course aims to equip students with the knowledge and skills to define and operate matrices, compute solutions to business problems through the use of mathematical concepts and techniques. **CO5:** Course aims to develop students' ability to think logically and critically, as well as to apply mathematical concepts and techniques to real-world problems. **CO6:** Develop independent learning skills, including the ability to research and explore mathematical concept.
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	■						
CO2		■		■			
CO3	■						■
CO4	■	■	■		■		
CO5					■	■	■
CO6	■				■		

Course Content	**Unit 1. Set Theory** 1.1.Introduction 1.2.Representation 1.3.Operation and its properties 1.4.Venn Diagram 1.5.Cartesian product and graph **Unit 2. Functions** 2.1 Definition 2.2 Types – Domain and Range 2.3 Construction and functions **Unit 3. Mathematical Logic** 3.1.Introduction to logic 3.2.Truth Table **Unit 4. Boolean Algebra** 4.1Definition & Examples of Boolean Algebra 4.2Boolean Functions 4.3Representation and minimization of Boolean Functions 4.4Design example using Boolean algebra **Unit 5. Matrices and Determinants** 5.1.Matrices of order M * N 5.2.Row and Column transformation 5.3.Addition, Subtraction and multiplication of Matrices 5.4.Computation of Inverse 5.5. Cramer's Rule 5.6. Business Application of Matrices
Reference Books	1. Co-ordinate Geometry – Shanti Narayan 2. Linear Algebra – SushomaVerma 3. Advanced Mathematics – B.S. Shah & Co. 4. Schaum's Outline of Boolean algebra and switching circuits – ElliotMendelson 5. Digital Computer Fundamentals - Tata McGraw Hill, 6th Edition, Thomas C.Bartee 6. Business Mathematics - QaziZameeruddin, V. K. Khanna and S. K. Bhambri,Vikas Publishing House Pvt. Ltd.
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	Internal Assessment :50 Marks External Assessment :50 Marks **50% Internal assessment** - Attendance, Class and home Assignment, Unit tests. **50% External assessment** - Written Theory exam

Course Code: BVOC103
Course Title: Fundamental of Computer and Peripheral Devices

[Subject code-2411001201030001**]**

Course Code	BVOC103
Course Title	Fundamental of Computer and Peripheral Devices
NCrF Credit level	4.5
Credit	4
Course Type	Minor Course
Subject Type	Discipline Specific
Teaching per Week	4 Hrs
Level of Course	100-199 (Foundation / Introductory)
Minimum weeks per Semester	15 (Including Class work, examination, preparation etc.)
Nature of Subject	Theory
Implementation Year	2026-2027
Pre-requisite	-
Purpose of Course	Hardware components of computers and peripherals help to improve student's skills and develop deeper bonds with computer system. This course will help students to improve knowledge about hardware components of computers and peripherals.
Course Objective	✓ To understand the different features and working of computers hardware ✓ To understanding of the essential peripherals devices of Computer system. ✓ To provide knowledge of number System, memories & its storage.
Course Outcome	CO1: Students will be able to develop interest in computers system for professional work. CO2: To make students understand the importance of peripherals devices in professional life. CO3: Student's will be able to enhance their ability in the ground of computer hardware. CO4: To enhance the attention in students for number system. CO5: Student will be able to learn how the computer represents and stores information using binary number system, and will be able to convert between binary and decimal number system. CO6: Students will be able to understand the functions of input output devices, know the different types of I/O Devices, and assess new technology used for I/O devices. CO7: Students will be able to understand concepts of internet and its services and also understand about cloud.
Mapping between Course Outcomes(CO) with Program Outcomes(PSO)	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	■	■					
CO2	■	■		■	■		
CO3					■	■	■
CO4			■	■	■	■	■
CO5		■		■	■		
CO6						■	■
CO7				■	■	■	■

Course Content	**UNIT-1 Introduction** 1.1 Introduction of Computer 1.2 Applications of Computer 1.3 Types of Computers 1.3.1 Super Computers 1.3.2 Mainframes Computers 1.3.3 Mini Computers 1.3.4 Microcomputers (Desktop, Laptop, Notebook, Tablet, Smart Phones) 1.4 Block Diagram of computer **UNIT-2: Basic components of Computer** 2.1 Hardware 2.1.1 Motherboard 2.1.2 Central Processing Unit (CPU) 2.1.3 Memory RAM(SRAM,DRAM, SDRAM), ROM, EPROM, EEPROM 2.1.4 Storage Devices (Hard Disk, CD, DVD, USB flash memory) 2.1.5 Graphics card, Cooling fan and Power Supply 2.2 Software 2.2.1 what is Operating System 2.2.2 Types of operating system (Microsoft's Windows, Apple's macOS and Linux) 2.2.3 Basic of System Software and Application Software 2.3 Types of Bus (Address Bus and Data Bus) 2.4 Types of memory 2.4.1 virtual memory 2.4.2 cache memory **UNIT-3: Introduction of Input & Output Devices** 3.1 Introduction of Input Devices 3.1.1 Keyboard 3.1.2 Pointing Devices (Mouse, Trackball, Joystick, Touch Screen, Light Pen 3.2 Introduction of Output Devices 3.2.1 Types of Monitors (LED, LCD,TFT, OLED, Touchscreen Monitor) 3.2.2 Types of Printers (Dot Matrix Printer, Laser Printer, Inkjet Printer) 3.3 Introduction of Scanning Devices 3.3.1 Optical Scanner 3.3.2 Bar Code Reader 3.3.3 Web Camera **UNIT-4: Number System in Computer** 4.1 Type of Number System 4.1.1 Decimal Number System 4.1.2 Binary Number System 4.1.3 Octal Number System 4.1.4 Hexadecimal Number System 4.2 Conversion of Decimal to Binary and Binary to Decimal 4.3 Binary addition & subtraction **UNIT-5: Introduction of Internet and Cloud** 5.1 What is the Internet? 5.2 Clients and Servers Communication 5.3 WWW, Hypertext Documents and HTTP 5.4 Application of Internet 5.5 Introduction of Web Browser and Terminologies (URL, Address bar, Domain, Links, Navigation Buttons) 5.5 Hardware (Modem, Router, Blue tooth, Fire-Stick) 5.6 Introduction of Cloud

	5.6.1 what is Cloud , private cloud, public cloud and hybrid cloud 5.6.2 Application of Cloud (Example of GoogleDoc)
Reference Books	1. Introduction to computers: 4th Edition – Peter Norton 2. Fundamentals of Computers: V. Rajaraman 3. How computer work: Ron White – Tech media 4. Computer Fundamentals: Pradeep K. Sinha & Priti Sinha (BPB) 5. Cloud Computing: Mehul Mahrishi Kamal Kant Hiran, Ruchi Doshi, Dr. Fagbola Temitayo 6. The Internet Book: Everything You Need to Know about Computer Networking and How the Internet Works: Douglas E. Comer
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	50% Internal assessment. 50% External assessment

[Subject code for Theory-2611001201010003]

[Subject code for Practical-2611001201010004]

Course Code: BVOC104

Course Title: Introduction to Programming Language in C

Course Code	BVOC104
Course Title	Introduction to Programming Language in C
NCrF Credit level	4.5
Credits	4
Course Type	Major
Course Subtype	Skill Development
Subject Type	Discipline Specific
Level of Course	200-299 (Intermediate Level)
Teaching per Week	6 Hrs. (2 Hours Theory + 4 Hours Practical work)
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Implementation Year:	A.Y. 2026-2027
Purpose of Course	- Computer programming is a process that leads from an original formulation of a computing problem to executable computer programs. - Programming involves activities such as analysis, developing, understanding, generating algorithms, verification of requirements of algorithms including their correctness, and implementation (commonly referred to as coding) of algorithmsin a target programming language. - To emphasis on concepts of Compiler based programming language, structureof code, algorithms, flow-charts, problem solving attitude, concepts of variables and declaration mechanism of different data types, simple I/O statements, conditional statements, loops, compound iterations, strings and certain inbuilt functions, header files, concepts of arrays, numeric array operations, character array operations, numeric inbuilt functions, concepts of pointers and concept of structure and union.
Course Objective	To introduce students the essentials of computer Programming and programming methodology using C Programming language.
Pre-requisite	Basic logical ability
Course Outcomes	CO1: Students will be able to learn programming concept of compiler based programming language. CO2: Students will be proficient working on conditional statements, iterative Statements and fundamentals of programming concepts using C. CO3: Students will be able to understand and implement conditional statements and improve their logical and reasoning abilities. CO4: Students will learn about arrays and pointers. CO5: Students will able to learn about user defined type Structure and Union.
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	■		■	■		■	
CO2	■	■			■		
CO3	■			■			■
CO4			■			■	
CO5	■			■		■	■

Course Content	**UNIT-1: Introduction** 1.1. Concepts of Programming Language 1.2. Concepts of Structured Programming Language 1.3. Introduction of Source Code, Object Code and Executable code 1.4. Concepts of Editor, Interpreter and Compiler 1.5. Importance of C Language 1.6. Body Structure of C Program 1.7. C Token, Character Set, Identifiers, Literals, Keywords 1.8. Data types 1.9. Concepts of variables and constants & Symbolic constant 1.10. Header Files & pre-compiler directives **UNIT-2: Input/Output Statements, Operators and In-Built Functions:** 2.1. Input/Output Statements: 2.1.1. Unformatted Input/Output 2.1.2. Formatted Input/Output 2.1.3. Type specifiers 2.2. Operators: 2.2.1. Arithmetic operators 2.2.2. Relational Operators 2.2.3. Logical Operators 2.2.4. Assignment operators 2.2.5. Increment and Decrement Operators 2.2.6. Bit-wise operators 2.2.7. Conditional Operator 2.3. Built-in functions: 2.3.1. String functions 2.3.2. Math functions **UNIT-3: Branching and Looping Statements:** 3.1. if statements: 3.1.1. simple if statements 3.1.2. if…else statements 3.1.3. if…elseif….else statements 3.1.4. Nested if statements 3.2. Switch..case statements: 3.2.1. Use of break and default 3.2.2. Difference between switch and if statements 3.3. Iterative statements: 3.3.1. Use of goto statement for iteration 3.3.2. while loop 3.3.3. do..while loop 3.3.4. for loop 3.3.5. Nested while, do..while and for loops 3.3.6. Jumping statement: (break and continue)

	UNIT-4: Arrays 4.1. One dimensional Arrays 4.1.1. Numeric Arrays 4.1.1.1. Sorting (Bubble sort) 4.1.1.2. Searching (Linear) 4.1.2. Character Arrays (String) 4.1.2.1. Reading & Writing String 4.1.2.2. Operation on character Arrays 4.2. Two dimensional Arrays 4.2.1. Numeric Arrays 4.2.1.1. Array operations (Addition, Subtraction, Multiplication) 4.2.1.2. Element Address in array (Row major and Column major) 4.2.2. Character Arrays 4.2.2.1. Declaring& Initializing Two-Dimensional character array 4.2.2.2. Two-Dimensional character Array operations (Searching elements, copying & merging) **UNIT-5: Structure & Union and User defined function:** 5.1. Concepts of structure and Union 5.1.1. Defining, declaring and initializing structure and Union 5.1.2. Typedef and accessing structure member 5.1.3. Difference between structure and union 5.2. User defined functions 5.2.1. Function return type, parameter list, local function variables 5.2.2. Passing arguments to function 5.2.3. Calling function from main() function or from other function. 5.2.4. Function with No arguments and no return value, No arguments and return value, with arguments and no return value, with arguments and return value. 5.3.5. Recursive Function
Reference Books	1. Let us C, Yashwant Kanetkar - BPB Publication 2. Programming in C, Balaguruswami – TMH 3. C: How to Program, Deitel & Deitel - PHI 4. C Programming Language, Kernigham & Ritchie - TMH 5. Programming in C, Stephan Kochan - CBS 6. Mastering Turbo C, Kelly & Bootle - BPB 7. C Language Programming – Byron Gottfried - TMH 8. Programming in C, Pradip Dey & Manas Ghosh – Oxford 9. Magnifying C, Arpita Gopal - PHI 10. Problem Solving with C, Somashekara - PHI
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	Internal Assessment :25 Marks Theory + 25 Marks Practical = 50 Marks External Assessment :25 Marks Theory + 25 Marks Practical = 50 Marks 50% Internal assessment - Attendance, Class and home Assignment, Unit tests. - Practical exam, viva-voce, Journal 50% External assessment - Written Theory exam - Practical Exam, viva-voce

[Subject code for Theory-2611001201020003]

[Subject code for Practical-2611001201020004]

Course Code: BVOC105

Course Title: Database Management System

Course Code	BVOC105
Course Title	Database Management System
NCrF Credit level	4.5
Credits	4
Course Type	Major Course
Course Subtype	Skill Development
Subject Type	Discipline Specific
Level of Course	200-299 (Intermediate Level)
Teaching per Week	6 Hours (2 Hours Theory + 4 Hours Practical work)
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Implementation Year:	A.Y. 2026-2027
Purpose of Course	The primary purpose of a Database Management System (DBMS), as outlined in the provided syllabus, is to provide a structured and efficient environment for storing, retrieving, and managing data. It addresses the fundamental limitations of traditional file processing systems by offering a centralized and controlled approach to data management.
Course Objective	The primary objective of this course is to transition from traditional data storage methods to a sophisticated, architecturally sound DBMS. It focuses on the theoretical and practical aspects of designing, organizing, and manipulating data.
Pre-requisite	To successfully master the concepts in the provided syllabus—ranging from the architectural design of database systems to the practical execution of SQL commands—students should ideally possess the foundational knowledge of file storing system.
Course Outcomes	**CO1:** To aware concepts Data Models and Architecture of DBMS **CO2:** Implement E-R Model **CO3:** Introductory concepts of SQL **CO4:** To aware about how data are retrieved from database along with data filtering
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1							
CO2							
CO3							
CO4							

Course Content	**Unit 1 : Introduction to Database Systems** 1.1. Purpose of database systems 1.1.1.Evolution from file processing systems to DBMS 1.2. Data Models 1.2.1.Hierarchical Model 1.2.2.Network Model 1.2.3.Relational Model 1.3. Architecture 1.3.1.Three level ANSI-SPARC architecture (External ,Conceptual and internal levels) 1.3.2.Database Users and Administrators 1.3.3.Roles of DBA 1.3.4.Different types of Users 1.4 Database Schema and Instance **Unit 2 : Data Modeling using E-R Model** 2.1. Entities and Attributes 2.1.1.Entity, Entity set, Entity types 2.1.2.Attributes, Types of attributes 2.1.3.Type of relationships 2.2. Constraints 2.2.1.Domain Constraint 2.2.2.Structural constraint 2.2.3.Key Constraint 2.2.4.Entity Integrity Constraint 2.2.5.Referential Integrity Constraint 2.3. E-R Diagrams 2.3.1.Drawing conventions and notations for database design **Unit 3: Introduction to SQL** 3.1. Overview of SQL 3.1.1.History Of SQL 3.1.2.Characteristics of SQL 3.1.3.SQL data types(numeric, character, date, LOB) 3.2. Types of SQL command 3.2.1. DDL (Data Definition Language) 3.2.2. DML (Data Manipulation Language) 3.2.3. DCL (Data Control Language) 3.2.4. TCL (Transaction Control Language) **Unit 4 : Data retrieval and operators** 4.1. The SELECT statement 4.1.1.Retrieving data, using aliases, and the DISTINCT keyword 4.2. Filtering data 4.2.1.Using the WHERE clause with logical operators (AND, OR, NOT) and HAVING clause 4.3. Comparison operator 4.3.1. BETWEEN, IN, LIKE,(wild cards % and __), and IS NULL

Reference Books	1. Database System Concepts Authors: Abraham Silberschatz, Henry F. Korth, S. Sudarshan 2. Fundamental of Database Systems Author: Ramez Elmasri and Shamkant B. Navathe 3. An Introduction to Database Systems Author: C. J. Date, A. Kannan, S. Swamynathan 4. Introduction to Database Management–Navin Prakash-TMH 5. Introduction to Database Management System–Bipin C. Desai–Galgotia Publication 6. Principles of Database Systems–Jeffery Ullman–Galgotia Publication 7. Discovering SQL-A Hands-on Guide for Beginner-Alex Kriegel Wrox Publication
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	50% Internal assessment. - Class attendance, class assignment, home assignment, Unit Tests - Practical exam, viva-voce, Journal 50% External assessment. - Theory/Written examination - Practical Exam, viva-voce

Course code: BVOC106

Course Title: Skill Enhancement Course (SEC-01)

Course Code	BVOC106
Course Title	Skill Enhancement Course - I (SEC – 01)
NCrF Credit level	4.5
Credit	2
Category of Course	Skill Enhancement Course
Course Subtype	Skill Development
Subject Type	Discipline Specific
Level of Course	100-199 (Foundation / Introductory)
Teaching per Week	4 Hrs (Any or Combination of Practical/Fieldwork/Internship/Project)
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Implementation Year:	A.Y. 2026-2027
Purpose of Course	- As per NEP (National Education Policy-2020), it is mandatory for students to select a 2 credit Skill Enhancement Course out of the choices given by the college/institute. - It will be mandatory for the student to opt minimum one 2-credit Skill Enhancement Course out of the list of offered courses recognized by the University during semester-1 to semester-5. - The student can start an alternative career in the field by obtaining higher degree of knowledge in the area. - It's aimed at imparting practical skills, embedded internship, hands-on training, soft skills, life skills, such approved online courses etc. to enhance the employability of students. This may also include courses as per the needof new evolving technology.
Course Objective	Obtaining skill in particular field along with the regular curriculum of the selected program is essential. It not only enhances the skill but also provide an opportunity to develop skill in particular area where one can pursue career in future. Skill enhancement provides the opportunity and knowledge for an individual to develop and strengthen the necessary skills to gain, maintain, and advance in a chosen area. Skill enhancement programs are focused around training that combines the best practices from varieties of areas. Skill enhancement or training typically uses a combination of cognitive and behaviour problem solving approaches, both of which are used to strengthen a person's positive skill develop.
Pre-requisite	No prior knowledge in the field is essential.
Course outcome	CO1: Student selects the area of skill as per his/her interest. The choices will be given by the institute/department. CO2: The students acquire basic and fundamental level of knowledge in the fieldthat the student opted. CO3: Understand the insight of the area and possibility of to explore more in thefield. CO4: Understand effective representation of problems in terms addressing theproblems. CO5: Learn to upskill and upgrade the knowledge in the area of selected subject.

Course Content (List of courses)	College can offer any one of the course from the following list: 106-01: Office Automation Tools 106-02: Introduction to Google Products [Detailed syllabus is available herewith]
Reference Books	As per the selection of the course.
Teaching Methodology	Class Work/ Discussion/ Self-Study/ Seminars/ field works/ practical training/ field work and/or Assignments.
Evaluation Method	50% Internal assessment. 50% External assessment. Internal Assessment :25 Marks External Assessment :25 Marks

Teaching Methodology	Class Work/ Discussion/ Self-Study/ Seminars/ field works/ practical training/ field work and/or Assignments.
Evaluation Method	50% Internal assessment. 50% External assessment. Maximum Marks: 50

Course code: BVOC107

Course Title: Bharatiya Knowledge System – an Introduction

[Subject code-2411001201070001**]**

Course Code	BVOC107
Course Title	Bharatiya Knowledge System – an Introduction
NCRF Credit level	4.5
Course Type	VAC
Course Subtype	Value Added Course
Subject Type	Intra-Discipline
Level of Course	100-199 (Foundation/Introductory)
Credits	2 (Theory: 2 hours)
Implementation Year:	A.Y.2026-2027
Purpose of Course	The purpose of this course is to introduce students to the rich heritage of Bharatiya Knowledge Systems, culture, philosophy, and traditions. The course aims to develop an understanding of Indian knowledge traditions, values, way of life, and philosophical concepts such as karma, co-existence, and Vasudhaiva Kutumbakam. It helps students develop ethical values, cultural awareness, creativity, and holistic thinking, which contribute to personal development and social harmony.
Course Objective	After completion of this course, students will be able to: 1. Understand the concept and evolution of Bharatiya Knowledge Systems and Indian traditions. 2. Explain the contribution of Indian knowledge systems in science, art, culture, and philosophy. 3. Understand the Bharatiya way of life and philosophical concepts such as karma, rebirth, and co-existence. 4. Develop awareness about Indian cultural values and social systems. 5. Analyze the relevance of Bharatiya Knowledge Systems in modern society. 6. Develop moral values, self-awareness, and holistic thinking. 7. Encourage research, creativity, and innovation based on Indian knowledge traditions.
Pre-requisite	There are no specific prerequisites for this course. However, students should have: • Basic awareness of Indian culture and traditions. • Interest in philosophy, culture, and heritage studies. • Open-mindedness towards traditional knowledge and value systems. • Basic reading and analytical skills.
Course Outcomes	**CO1:** Students will have an understanding of the basics of the Indian knowledge system and its relevance and applications to various fields. **CO2:** This will ideally also inspire future research and applications of these systems in their respective academic disciplines. **CO3:** IKS can enhance a student's creative skills by allowing them to inculcate novel thought process. **CO4:** Additionally, it will help the students build their self-confidence. **CO5:** It will enhance their aesthetic creativity by nurturing them to be more open-minded and confident.

Mapping between Course Outcomes(CO) with Program Outcomes(PSO)	**CO / PSO**	**PSO1**	**PSO2**	**PSO3**	**PSO4**	**PSO5**	**PSO6**	**PSO7**
	CO1							
	CO2							
	CO3							
	CO4							
	CO5							

Course Content

Unit- 1 Bharatiya Knowledge Systems and Tradition

1.1 Self – Revelation of Bharat.
1.2 Knowledge Tradition of Glorious Bharat.
1.3 The Sublime Journey of Bharatiya Culture & Civilization.
1.4 Dissemination and contribution of Bharatiya Knowledge systems in the world glorious tradition of Science and Art in Bharat.

Unit-2 The Way of Life/ Jivan Darshan in Bharatiya Knowledge Systems

2.1 Way of life as Bharatiya Knowledge Systems.
2.2 The Implicit Concepts in Bharatiya Knowledge Systems.
2.3 Birth, Death, Rebirth, Law of Karma, Idea of Sukhha,
2.4 Social Viewpoint in Bharatiya Knowledge systems.
2.5 Co - existence of Nature and Human Nature, Manifold Paths of Upasana, Value co-Existence- Ritam.
2.6 Idea of Vasudhaiv kutumbkam.

Reference Books

1. Kapoor Kapil, Singh Avadhesh (2021). "Indian Knowledge Systems Vol – I & II", Indian Institute of Advanced Study, Shimla, H.P.
2. B. Mahadevan, Introduction to Indian Knowledge Systems, IISC Bangalore
3. R. C. Majumdar, Ancient India, Motilal Banarsidas, Publishers, New Delhi, First edition , Vransi 1952, reprint 2003.
4. Basham, A.L. (ed.). A Cultural History of India, New Delhi, Oxford University Press, 1975.
5. Sri Aurobindo, The Foundation of Indian Culture, SABDA, Sri Aurobindo Ashram, Pondicherry,1972. Also available in Gujarati Translation as " Bhatatiya Sanskruti Na Paya."
6. Sri Aurobindo, India's Rebirth, SABDA, Sri Aurobindo Ashram, Pondichery,1972.
7. Swami Vivekananda, Bharat Ma Aapela Bhashano, Books Libraria, 2020
8. Sharad Hebalkar, Bharatiya Sanskruti No Vishva Sanchar, Sahitya Sadhana Trust, Ahmedabad, 2004.
9. Sri Aurobindo and The Mother, Char Tapasyao ane Char Mukti, SABDA, Sri Aurobindo Ashram, Pondicherry.
10. Swami Vivekananda, Sapanao Nu Bharat, Diamond Books, New Delhi.
11. B S Shah, Shikshan Chintakonu Shikshan Darshan, B S Shah Prakashan,
12. V H Patel, Hindu Dharma Ni Mahanata, Pravin Prakashan, Rajkot,2015
13. V K Bhatt, Sri Aravind Nu Tatva Darshan, University Granth Nirmana Board, Gandhinagar
14. Katdare Indumati, Kutumb Aur Kutumb Shiksha, Punarutthan Vidyapith, Ahmedabad

Teaching Methodology	Class Work/ Discussion/ Self-Study/ Assignments /Home Work/ Activity /Seminars
Evaluation Method	**50% Internal assessment:** - Attendance, Class and home Assignment - Test (Theory / MCQ) **50% External assessment:** - Theory / MCQ

Course Code: BVOC106-01

Course Title: Office Automation Tools

[Subject code-2611001201060002]

Course Code	BVOC106-01
Course Title	Office Automation Tools
Credits	2
Course Category	Skill Enhancement Course
Level of Course	100-199 (Foundation/Introductory)
Teaching per Week	4 Hours Practical
Course Duration	30 hours of Practical/Applied knowledge
Purpose of Course	Use of modern office equipment in business or any office is intended to facilitate faster processing and delivery of information, accurate analysis of facts and figures, higher efficiency and productivity. Office Automation Tools help in Word processing, managing Worksheets and preparing Presentations.
Course Objective	To learn and obtain the skills related to i) Concepts of data, data storage and processing of data. ii) Introduction of spreadsheet and data manipulation using spreadsheet. iii) To understand the use of Presentation software.
Pre-requisite	Concepts of Data and fundamentals of spreadsheet.
Course Outcomes	CO1: Students will learn the concept of data and storage of data CO2: Learn the Concept of word processor and its uses. CO3- Learn the Concept of Spreadsheet, Using the spreadsheet students will able to learn data manipulation, Statistical analysis of data and graphical presentation of data. CO4- To understand the concept of presentation S/W
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1							
CO2							
CO3							
CO4							

Course Content	**Unit 1. Introduction** 1.1 Concept of Windows, Icon, Menu 1.2 Desktop 1.3 Creating Folders and Shortcuts 1.4 Finding Files & Folders 1.5 Creating, Copying, Moving and Deleting files 1.6 Windows Explorer **Unit 2. Word Processor** 2.1 Typing, Editing, Proofing & reviewing 2.2 Formatting text & Paragraph 2.3 Automatics Formatting and Styles 2.4 Working with Tables 2.5 Graphics and Frames 2.6 Mail Merge **Unit 3. Spreadsheet Software** 3.1 Concept of worksheet 3.2 Working & Editing in Workbooks 3.3 Creating Formats & Links 3.4 Protecting and Hiding data 3.5 Built in Functions (Mathematical, Statistical, String & Date) 3.6 Formatting a Worksheet 3.7 Creating Charts (Graphics), Formatting and Analysing data 3.8 Organizing Data in a List (Data Management) 3.9 Printing **Unit 4. Presentation Software** 4.1 Creating and Editing Slides 4.2 Creating and Editing objects in the slide 4.3 Animation 4.4 Creating and Running Slide Show 4.5 Templates
Reference Books	1. OpenOffice.org For Dummies - Gurdy Leete, Ellen Finkelstein, Mary Leete - Wiley Pub. 2. Beginning OpenOffice 3: From Novice to Professional - Andy Channellle - Apress Pub. 3. The OpenOffice.org 2 Guidebook - Solveig Haugland 4. Taming Apache OpenOffice: Getting Started - Jean Hollis Weber - Friends of OpenDocument Inc. 5. Open Office Basic: An Introduction - James Steinberg - Gold Turtle Pub. 6. PC Software for Windows 2003 Made Simple, - R K Taxali, - TMH 7. 2007 Microsoft Office System Plain & Simple, Joyce & Moon, - PHI 8. Internet 6 in 1 – Joe Krayuak & Harbraken, PHI 9. Introduction to Computer Science-Pearson Education-ITL ESL 10. Introduction to Computers-Peter Norton-The McGraw-Hill companies
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	50% Internal assessment : - Attendance, Class and home Assignment - Test (Theory /Practical / MCQ) 50% External assessment: - Practical / MCQ

Course Code: BVOC106-02
Course Title: Introduction to Google Products
[Subject code-2611001201060003]

Course Code	BVOC106-02
Course Title	Introduction to Google Products
Credits	2
Course Category	Skill Enhancement Course
Level of Course	100-199 (Foundation/Introductory)
Course Duration	30 hours of Practical/Applied knowledge
Purpose of Course	Tools like Google Docs, Sheets, and Slides help students to create documents, manage data, and prepare presentations online with real-time collaboration, while Google Drive provides cloud storage to save and access files from anywhere. Students can make everyday tasks easier by supporting productivity, communication, and information access.
Course Objective	The objective of this course on Google products is to help learners understand and effectively use various tools developed by Google for daily academic and professional tasks.
Pre-requisite	Learners should have basic computer knowledge, such as using a keyboard, mouse, and internet browser. A Google account (Gmail) is required to access tools like Docs, Sheets, Slides, Drive, and Meet. Students should also have a basic understanding of the internet.
Course Outcomes	After learning Google products from Google, students will be able to: CO1: Create documents, manage data, design presentations, store and share files, conduct online meetings, collect and analyze information. CO2: Use tools like Translate, Trends, and Lens. CO3: Improving digital skills and productivity.
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	
Course Content	**Unit 1: Introduction of Google Product** 1.1 Google Docs 1.2 Google Sheets 1.3 Google Slides 1.4 Google Drawing 1.5 Google Form 1.6 Google Meet 1.7 Google Forms 1.8 Google Drive 1.9 Google Translate 1.10 Google Trends 1.11 Google Lens **Unit 2: Google Docs** 2.1 Foundations of Google Docs 2.2 Menu bar 2.3 Sharing and Collaborate Options 2.4 Voice typing 2.5 Spell check and grammar

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	■		■		■		■
CO2		■	■	■	■		
CO3	■		■			■	■

	2.6 Add-ons for extra tools **Unit 3: Google Sheets** 3.1 Foundations of Google Sheets 3.2 Menu bar 3.3 Sharing Options 3.4 Basic Formulas and Functions 3.5 Sort and Filter Data **Unit 4: Google Slides** 4.1 Foundations of Google Slides 4.2 Menu bar 4.3 Sharing Options 4.4 Animations & Transitions **Unit 5: Review and Practical** 5.1 Unit Review and Practical of Google Docs, Google Sheets, Google Slide
Reference Books	1. Google Workspace For Dummies o Author: Karen Leland Publisher: Wiley 2. Google Drive & Docs In 30 Minutes o Author: Ian Lamont Publisher: i30 Media Corporation 3. The Google Workspace Bible o Author: James Bernstein Publisher: Lulu Press 4. Google Apps Made Easy o Author: James Bernstein Publisher: Lulu Press
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	50% Internal assessment : - Attendance, Class and home Assignment - Test (Theory /Practical / MCQ) 50% External assessment: - Practical / MCQ

Semester – 2

[Subject code-*2411001202050002*]

Course Code: BVOC201

Course Title: Professional Development and Ability Enhancement

Course Code	BVOC201
Course Title	Professional Development and Ability Enhancement
NCrF Credit level	4.5
Course Type	Ability Enhancement Course
Course Subtype	Employability
Subject Type	Intra disciplinary
Level of Course	100-199 (Foundation/Introductory)
Credits	2 Credits – (Theory: 2 Hours)
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Implementation Year:	A.Y.2026-2027
Purpose of Course	This course is designed to provide students with the essential skills required for professional success. It covers personality development, interview strategies, application writing skills, and the fundamentals of preparing and presenting budgets. The course integrates theoretical knowledge with practical applications through case studies, ensuring students are well-equipped for career advancement.
Course Objective	Develop Self-Awareness: Enable students to understand their strengths, weaknesses, and values to enhance their self-awareness, contributing to improved decision-making and interpersonal relationships. Interview Techniques: Equip students with the knowledge and skills necessary to confidently navigate various interview formats, respond to challenging questions, and make a lasting impression on potential employers. Enhance Application Writing Skills: Cultivate effective written communication skills for job applications, cover letters, and personal statements, enabling students to craft compelling narratives that highlight their qualifications and experiences. Prepare and Present Budgets: Provide students with the foundational knowledge and practical skills to create, manage, and present budgets tailored to their personal and professional goals, fostering financial responsibility. Integrate Skills for Professional Success: Integrate personality development, interview techniques, application writing, and budgeting skills into a holistic approach for achieving professional success, fostering a proactive and strategic mindset
Pre-requisite	Knowledge of English at H. Sc.(12^{th})Level
Course Outcomes	**CO1**: Self-Discovery and Awareness: Students will demonstrate an increased understanding of their personality traits, values, and motivations, fostering a greater sense of self-awareness. **CO2**: Interview Techniques: Students will exhibit proficiency in interview techniques, including effective communication, confident self-

	presentation, and the ability to handle various interview scenarios. **CO3**: Effective Application Writing: Students will showcase enhanced written communication skills through the creation of well-crafted resumes, cover letters, and personal statements tailored to specific job opportunities. **CO4:** Budgeting Competence: Students will develop and present realistic budgets, showcasing the ability to manage financial resources effectively and plan for both short-term and long-term career goals. **CO5:** Integrated Professional Success Plan: Students will create a comprehensive professional success plan that integrates personality development, interview strategies, application writing skills, and budgeting, demonstrating a strategic approach to their career development.
Mapping between Course Outcomes (CO) with Program Specific Outcomes (PSO)	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1							
CO2							
CO3							
CO4							
CO5							

Course Content:

Unit-1: Personality Development

1.1. Understanding Self
1.2. Importance of self-awareness
1.3. Personality assessments and tools
1.4. Identifying strengths and areas for improvement
1.5. Effective Communication and Interpersonal Skills
  1.5.1. Verbal and non-verbal communication techniques
  1.5.2. Building and maintaining positive relationships
  1.5.3. Conflict resolution and collaboration skills

Unit-2: Interview Tips and Techniques

2.1. Preparing for Success
2.2. Researching the company and job role
2.3. Crafting a compelling resume and cover letter
2.4. Developing a personal elevator pitch
2.5. Mastering the Interview
2.6. Common interview formats and question types
  2.6.1. Interview etiquette and body language
  2.6.2. Strategies for handling challenging questions

Unit-3: Application Writing Skills

3.1. Effective Application Writing
3.2. Crafting a powerful statement of purpose
3.3. Writing persuasive letters of recommendation
3.4. Tailoring applications to specific opportunities
3.5. Portfolio Development
  3.5.1. Building a professional portfolio
  3.5.2. Showcasing achievements, projects, and skills
  3.5.3. Online presence and personal branding

	Unit-4: Fundamentals of Preparing and Presenting Budgets with Case Studies 4.1. Budget Basics 4.1.1. Understanding financial terminology 4.1.2. Creating a personal budget for career development 4.1.3. Introduction to budgeting tools and apps 4.2. Budgeting case studies 4.2.1. Preparing income and expenditure statements for home. 4.2.2. Allocating resources for ongoing education and skill development. 4.2.3. Preparing monthly, quarterly and yearly horse budget. 4.2.4. Preparing monthly, quarterly and yearly budget for a restaurant.
Reference Books	1.) The Power of Habit: Why We Do What We Do in Life and Business" by Charles Duhigg, ISBN: 9780812981605, Publisher: Random House 2.) "Quiet: The Power of Introverts in a World That Can't Stop Talking" by Susan Cain ISBN: 9780307352149, Publisher: Crown 3.) "Cracking the Coding Interview: 189 Programming Questions and Solutions by Gayle Laakmann McDowell ISBN: 9780984782857, Publisher: CareerCup 4.) "Sweaty Palms: The Neglected Art of Being Interviewed" by H. Anthony Medley ISBN: 9780312155668, Publisher: St. Martin's Griffin 5.) "Resumes that Knock 'em Dead" by Martin Yate ISBN: 9781440536793, Publisher: Adams Media 6.) "Cover Letter Magic, 4th Ed: Trade Secrets of Professional Resume Writers" by Wendy S. Enelow and Louise M. Kursmark ISBN: 9781593577353, Publisher: JIST Works 7.) "Budgeting Basics and Beyond" by Jae K. Shim and Joel G. Siegel ISBN: 9781119133899, Publisher: Wiley 8.) "Financial Intelligence, Revised Edition: A Manager's Guide to Knowing What the Numbers Really Mean" by Karen Berman and Joe Knight ISBN: 9781422144114, Publisher, Harvard Business Review Press 9.) "What Color Is Your Parachute? 2022: Your Guide to a Lifetime of Meaningful Work and Career Success" by Richard N. Boiles ISBN: 9781984858444, Publisher: Ten Speed Press 10.) "The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change" by Stephen R. Covey ISBN 9781982137274, Publisher: Simon & Schuster
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	Internal Assessment :25 Marks External Assessment :25 Marks **50% Internal assessment** - Attendance, Class and home Assignment, Unit tests - Presentation on given topic, report writing and group discussion [One presentation by the student on given topic, A project report on given topic and participation in group discussion.] **50% External assessment** - Written Theory exam &/or presentation and report assessment [Final project report will be prepared and presented by the student. Viva-voce and personal interaction with the student to evaluate student's understanding about the topic(s)/report.]

Course Code: BVOC202-01
Course Title: Computerized Financial Accounting
[Subject code-2611001202040002]

Course Code	BVOC202-01
Course Title	Computerized Financial Accounting [This is multi-disciplinary/inter-disciplinary category of course. Student can select any course from the basket of courses offered by the institute/college offered by the University under the Multi-Disciplinary courses or Inter-disciplinary courses basket.]
NCrF Credit level	4.5
Course Type	MDC
Course subtype	Employability
Subject Type	Intra disciplinary
Level of Course	100-199 (Foundation/Introductory)
Credits	4 Credits – (Theory: 4 Hours)
Implementation Year	A.Y.2026-27
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Purpose of Course	- To impart knowledge about accounting and how the accounts can be maintained using computer software. - This will give an idea to understand the Financial accounting terminologies and the model which is computerized. - [This is constituent discipline of the major courses and it helps learners to acquire core competence in relevant or any other independent courses of their choices. This course may be major specific or other discipline specific. Learner shall have option to choose the course from available pool of courses or from any other institutions as the learner's choice. - Interdisciplinary course can help to gain the skills needed to adapt to a rapidly changing workplace, combining theory with practice to help students develop valuable transferable skills. - Multi-disciplinary course allows the students to understand the power of new ideas. It helps them to develop a pragmatic attitude by allowing them to decide what subjects they will opt for and what could be their possible benefits. They get time to make a decision by calculating the risks & advantages. - Student can opt any one course of multi-disciplinary nature from other than the computer Science and Application faculty. The course will be offered by the institute/college passed by the Board of Studies of University faculties other than the computer science and application faculty.]

Course Objective	The course will give fundamental ideas about the accounting software and as a course study, the students can understand how the accounting software works. It also give an idea about various terminologies related to the computerized financial accounting. - Integration of Knowledge and Skills: One objective of a multidisciplinary course is to foster the integration of knowledge and skills from different disciplines. By combining various areas of study, students can gain a holistic understanding of a particular topic or problem. This objective aims to break down the traditional boundaries between subjects and encourage students to see connections and relationships across different fields. - Promoting Critical Thinking and Problem Solving: Another objective is to enhance students' critical thinking and problem-solving abilities. Multidisciplinary courses often involve complex real-world issues that require a multifaceted approach. By engaging with diverse perspectives and methodologies, students develop the capacity to analyze problems from multiple angles, think creatively, and propose innovative solutions. - Enhancing Collaboration and Communication Skills: Collaboration and effective communication are essential skills in today's interconnected world. Multidisciplinary courses aim to cultivate these skills by providing opportunities for students to work collaboratively with peers from different disciplines. Through group projects, discussions, and presentations, students learn how to articulate their ideas, listen actively to others, and collaborate effectively to achieve common goals. This objective prepares students for interdisciplinary work environments and encourages the exchange of ideas across Disciplinary boundaries.
Course Outcome	CO1: After learning this subject student will be able to know the basic concepts of Financial Accounting & use of a good Financial Accounting Software CO2: student will able to learn basic about financial accounting and its concepts CO3: students will able to learn about transaction and types of accounts CO4: student will able to learn the book-keeping concept CO5: student will able to know about the journal and other related details CO6: student will learn about the ledger and trail balance

Mapping Between CO with PSO

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	■						■
CO2	■						
CO3							■
CO4		■			■		■
CO5				■	■	■	■
CO6	■	■		■	■	■	■

Course Content	**Unit1: Introduction to Accounting System** 1.1. Meaning & Definition of Accounting 1.2. Objectives of Accounting 1.3. Concepts and Features of Book Keeping 1.4. Branches of Accounting (Financial Management, Cust) 1.5. Basis of Accounting(Accrual Bases, Cash Bases) 1.6. Accounting Concepts **Unit2: Accounting Equation & Transaction Analysis** 2.1. Introduction to Assets, Liabilities, Equities 2.2. Concepts of Transaction Analysis 2.3. Classification of Accounts(Real Account, Personal Account, Nominal Account) **Unit3: Concepts of Book-Keeping** 3.1. Introduction of Single Entry System and advantages/ disadvantages 3.2. Introduction of Double Entry System and its advantages 3.3. Types of Business Transaction 3.4. Concepts of important Terminologies : Opening Stock, Closing Stock, Goods, Inventory, Assets, Liabilities, Capital, Debit, Debtors, Creditors, Income, Expenses, Loss, Profit, Credit, Debit. **Unit4: Journal & Subsidiary Books(With Preliminary examples)** 4.1. Meaning of Journal 4.2. Format of Journal 4.3. Concept of format of cash Book 4.4. Concept and format of Petty cash Book 4.5. Concept of format of Purchase Sale, Purchase Return andSale Return Book **Unit5: Concepts of Accounting Mechanism** 5.1. Meaning and Definition of Ledger 5.2. Types of Ledger 5.3. Trial Balance and its objectives
Reference Books	1. Accounting for Management– By Dr. Jawaharlal 2. Financial Management –By Dr. S. N. Maheshwari 3. Accounting for Management–By S. K. Bhattacharya &John Dearden 4. Advanced Accountancy– By S. P. Jain & K. I. Narang 5. Implementing Tally 6.3–By K. K. Nathani – BPB Publication 6. Implementing Tally7.2– By A. K. Nathani & K. K. Nathani BPB Publication
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	Internal Assessment :50 Marks External Assessment :50 Marks 50% Internal assessment - Attendance, Class and home Assignment, Unit tests 50% External assessment - Written Theory exam

Course Code: BVOC202-02
Course Title: Organizational Structure and Behaviour

[Subject code-2611001202040003]

Course Code	BVOC202-02
Course Title	Organization Structure & Behaviour (Multidisciplinary Course) [This is multi-disciplinary/inter-disciplinary category of course. Student can select any course from the basket of courses offered by the institute/college offered by the University under the Multi-Disciplinary courses or Inter-disciplinary courses basket.]
NCrF Credit level	4.5
Course Type	MDC
Course subtype	Employability
Subject Type	Intra disciplinary
Level of Course	100-199 (Foundation/Introductory)
Credits	4 Credits – (Theory: 4 Hours)
Implementation Year	A.Y.2026-2027
Minimum weeks per Semester	15(Including Class work, examination, holidays etc.)
Purpose of Course	- Computer Science professionals work at different levels in the hierarchy of various jobs in IT. It is essential to understand the Organization Structure and behavior. - Integration of Knowledge and Skills: One objective of a multi disciplinary course is to foster the integration of knowledge and skills from different disciplines. By combining various areas of study, students can gain a holistic understanding of a particular topic or problem. This objective aims to break down the traditional boundaries between subjects and encourage students to see connections and relationships across different fields. - Promoting Critical Thinking and Problem Solving: Another objective is to enhance students' critical thinking and problem-solving abilities. Multidisciplinary courses often involve complex real-world issues that require a multifaceted approach. By engaging with diverse perspectives and methodologies, students develop the capacity to analyze problems from multiple angles, think creatively, and propose innovative solutions. - Enhancing Collaboration and Communication Skills: Collaboration and effective communication are essential skills in today's interconnected world. Multidisciplinary courses aim to cultivate these skills by providing opportunities for students to work collaboratively with peers from different disciplines. Through group projects, discussions, and presentations, students learn how to articulate their ideas, listen actively to others, and collaborate effectively to achieve common goals. This objective prepares students for interdisciplinary work environments and encourages the exchange of ideas across Disciplinary boundaries.
Course Objective	The objective of this course is to make students aware about the Structure of an Organization and provide them concepts that leads to better understanding of human behavior in an organization.

Course Outcome	**CO1:** After completion of the course the student will be aware about the Structure of an organization **CO2:** Also, will have better understanding of human behavior in an organization **CO3:** Students will understand and develop their attitude **CO4:** Students will learn the importance of motivation. **CO5:** Students will be able to understand the leader, skills of leader and leadership styles **CO6:** students will have idea about BPO and call centers

Mapping Between Cos with PSOs

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	■		■				
CO2	■						
CO3					■		
CO4	■		■	■			
CO5	■		■	■	■	■	
CO6		■		■		■	

Course Content

Unit 1: Introduction to Organization and Management

1.1. What makes an organization
1.2. Structure of organization
1.3. What is Management
1.4. Scope of Management
1.5. Role of Management
1.6. Manager's Role(Interpersonal Role, Information Role and Decisional Role)
1.7. Managerial Skills(Technical Skills, Human Skills, Conceptual Skills)

Unit 2: Attitude

2.1. Meaning of Attitude
2.2. Characteristic of Attitude

Unit 3: Motivation

3.1. What is motivation?
3.2. Nature and Characteristics of Motivation
3.3. Importance & Benefits of Motivation

Unit 4: Leadership

4.1. What is Leadership?
4.2. Characteristics of Leadership
4.3. Leadership Styles
4.4. Leadership Skills(Technical Skills, Conceptual Skills, Personal Skills)

Unit 5: BPO and Call Centre

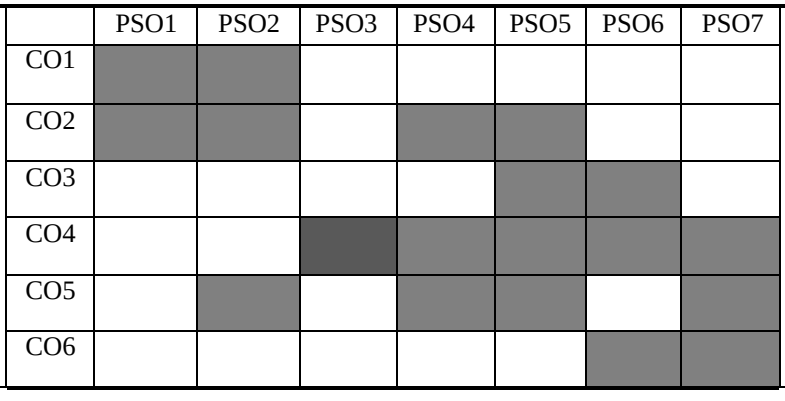
5.1. What is B.P.O?
5.2. What is out-sourcing? Benefits of outsourcing
5.3. What is Call Centre?
5.4. Call Centre setup & functions

Reference Books	1. Management & Organization Development–By Ahmed Abod Rachana Prakashan, New Delhi 2. Organization Behaviour– By Applewhite Philip, Prentice hall 3. Management & Organization Development–By Argyris Chris McGraw Hill 4. Human Behaviour at work–By Devis Keith, Tata MacGraw Hill 5. Organization Behaviour–By L.M. Prasad 6. Principles and Practices of Management –By L.M. Prasad 7. Managing People at work–By Harris O Jeff, John Wiley & Sons Publication 8. Call Centres– By S. Pankaj (APII Publication)
Teaching Methodology	Class work, Discussion, Self Study, Seminars and/or Assignment
Evaluation Method	Internal Assessment :50 Marks External Assessment :50 Marks 50% Internal assessment. - Attendance, Class and home Assignment, Unit tests 50% External assessment. - Written Theory exam

Course Code: BVOC203

Course Title: Operating System

[Subject code-2411001202030001]

Course Code	BVOC203
Course Title	Operating System
NCrF Credit level	4.5
Credits	4
Course Type	Minor Course
Course Subtype	--
Subject Type	Discipline Specific
Level of Course	100-199 (Foundation / Introductory)
Teaching per Week	Theory: 4 Hours
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Implementation Year	A.Y. 2026-2027
Purpose of Course	An Operating System (OS) is software that manages computer hardware and software resources and provides common services for computer programs. The operating system is an essential component of the system software in a computer system. Application programs usually require an operating system to function.
Course Objective	The objective of this course is: 1. To make students understand functionality provided by an Operating System. 2. To make students aware with basic concepts of File System and File Management. 3. To teach device management to the Students. 4. To teach memory management to the Students.
Pre-requisite	Basic knowledge of computer fundamentals
Course Outcomes	**CO1:** Students will learn how operating system is important for computer system and what the role of an OS is, and also learn different types of operating system and their services. **CO2:** Students will be able to understand the structure and organization of file system. **CO3:** To get understanding of memory management **CO4:** To understand the algorithms of memory management. **CO5:** To understand devices, usage of devices, scheduling algorithms and decide which is the best one. **CO6:** Students will be able to develop application the coordinate with respective OS in a much better way which is an essential.
Mapping between Course Outcomes (CO) with Program Specific Outcomes (PSO)	

Course Content	**Unit 1. Operating System Concepts** 1.1.Evolution of Operating System & History 1.2.Need of an Operating System 1.3.Single User & Multi User Operating System 1.4.Elements of an Operating System 1.5.Operating System as a Resource Manager **Unit 2. Introduction to File System and File Management** 2.1.File Concept 2.2.Operations on File 2.3. File Access Methods (Sequential Access and Direct Access) 2.4. Directory Systems File Management Functions. 2.5. File System and Directory Structure organization. 2.6. File Protection. **Unit-3: Memory Management** 3.1 Introduction to memory management and its need in an operating system 3.2 Logical address space and physical address space 3.3 Address binding: compile-time, load-time, and run-time 3.4 Memory management hardware and Memory Management Unit (MMU) 3.5 Contiguous memory allocation techniques 3.5.1 Single-partition and multiple-partition allocation 3.5.2 Fixed and variable partitioning 3.5.3 Allocation strategies: First Fit, Best Fit, Worst Fit 3.5.4 Internal and external fragmentation 3.6 Paging 3.6.1 Basic concepts of paging 3.6.2 Pages, frames, and page size 3.6.3 Page table structure 3.6.4 Address translation using paging 3.6.5 Multilevel paging 3.6.6 Inverted page table 3.6.7 Advantages and disadvantages of paging 3.7 Segmentation 3.7.1 Concept of segmentation 3.7.2 Segment table 3.7.3 Address translation in segmentation 3.7.4 Comparison of segmentation and paging 3.7.5 Advantages and disadvantages of segmentation 3.8 Virtual memory concepts 3.8.1 Need for virtual memory 3.8.2 Demand paging 3.8.3 Page fault and its handling 3.9 Page replacement algorithms 3.9.1 Need for page replacement 3.9.2 FIFO 3.9.3 Optimal 3.9.4 Least Recently Used (LRU) 3.9.5 Second Chance (Clock) algorithm 3.9.6 Belady's anomaly **Unit 4. Device Management** 4.1.Device Management Function 4.2.Device Characteristics 4.3.Disk space Management 4.4.Allocation and Disk Scheduling Methods

Reference Books	1. Operating System Concepts: – James Peterson: – McGraw Hill 2. Operating System: – Stallings - PHI 3. Operating System Principles: – Silberschatz, Galvin, Gagne - Willey, India 4. Operating Systems – A. S. Godbole – Tata McGraw Hill
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	Internal Assessment :50 Marks External Assessment :50 Marks 50% Internal assessment. - Attendance, Class and home Assignment, Unit tests 50% External assessment. - Written Theory exam

Course Code: BVOC204

Course Title: Object Oriented Programming with C++

[Subject code for Theory-2611001202010003] [Subject code for Practical-2611001202010004]

Course Code	BVOC204
Course Title	Object Oriented Programming with C++
NCrF Credit level	4.5
Credits	4
Course Type	Major Course
Course Subtype	Skill Development
Subject Type	Discipline Specific
Level of Course	200-299 (Intermediate Level)
Teaching per Week	6 Hours (2 Hours Theory + 4 Hours Practical)
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Implementation Year:	A.Y. 2026-2027
Purpose of Course	To understand Object Oriented Programming concepts and skills necessary for developing programs using C++. It is important for a computer programmer to understand the concept of overloading and its application. Students will able to develop real world application with OOP features.
Course Objective	1. This course has been designed for the beginners to help them understand basic to advanced concepts related to C++ Programming language. 2. To make students understand the importance of OOP methodology and techniques. 3. To make students understand the concept of overloading and overriding.
Pre-requisite	Fundamental knowledge of computer programming using 'C' language.
Course Outcomes	CO1: Students will be able to formulate a computing problem to executable computer program using C++ language. CO2: Understand concepts of class, objects, polymorphism, Inheritance and other important Object oriented concepts. CO3: Students will be able to understand concept of constructors and various uses. CO3: To understand and apply Dynamic Polymorphism in real world application CO4: Students will able to learn dynamic memory allocation techniques.
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	
Course Content	**Unit 1. Concepts of Object Oriented Programming:** 1.1. Object oriented programming paradigm 1.2. Difference between procedural programming and OOP 1.3. Benefit of OOP 1.4. Application of C++ 1.5. Various library (header) files require for C++ 1.6. Data types in C++

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	■		■	■		■	
CO2	■	■			■		
CO3	■			■			■
CO4			■			■	■

1.7. Operators in C++
1.8. Array

Unit 2. Class and Object:

2.1 Concept of Class and Object
2.2. Access modifiers (Public, Private, Protected)
2.3. Declaration of simple class, data member and member function
2.4. Inline function
2.5. Array within class
2.6. Memory allocation for object
2.7. Static data member
2.8. Static member functions
2.9. Array of object
2.10. Object as function arguments
2.11. Returning object
2.12. Friend function

Unit 3. Constructors and Destructors

3.1 Introduction
3.2 Parameterized Constructors
3.3 Multiple Constructor in class
3.4 Constructor with Default Argument
3.5 Copy Constructor
3.6 Dynamic Constructor
3.7 Destructor

Unit 4. Inheritance

4.1 Concepts of Inheritance
4.2 Derived Class
4.3 Types of Inheritance
4.4 Virtual Base Class
4.5 Abstract Class
4.6 Constructor in Derived Class
4.7 Containership (Nested Class)

Unit 5. Polymorphism

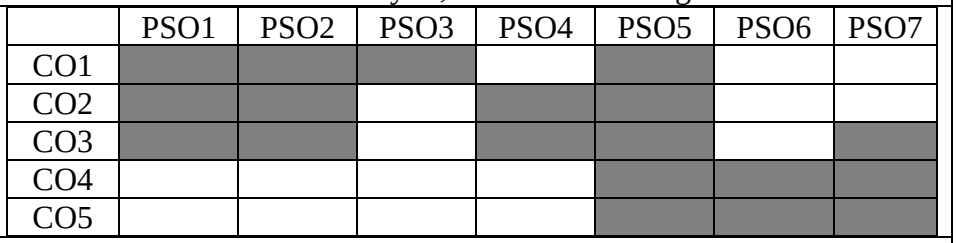
5.1 Concepts of Polymorphism
5.2 Compile time and Run time Polymorphism
5.3 Concept of Overloading (Function & Operator)
5.4 Unary and Binary operator overloading using Member Function
5.5 Unary and Binary operator overloading using Friend Function
5.6 Concept of Overriding
5.7 Concepts of this pointer, virtual function and pure virtual function

Reference Books	1. Let us C++, Yaswant Kanitkar - TMH Publication 2. Programming with C++, E Balaguruswamy - BPB Publication 3. C++ and Object-Oriented Programming Paradigm, Jana - PHI 4. The Complete Reference C++, Herbert Schildt - TMH 5. The C++ Programming Language, Stroustrup – Addison Wesley 6. OOP in Turbo C++, Robert Lafore - Galgotia Publication 7. C++ Primer, Lippman – Addison Wesley 8. Object Oriented Programming Fundamentals & Applications, Probal Sengupta – PHI
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	Internal Assessment :25 Marks Theory + 25 Marks Practical = 50 Marks External Assessment :25 Marks Theory + 25 Marks Practical = 50 Marks 50% Internal assessment - Attendance, Class and home Assignment, Unit tests. - Practical exam, viva-voce, Journal 50% External assessment - Written Theory exam - Practical Exam, viva-voce

Course Code: BVOC205

Course Title: Basics of Python Programming

[Subject code for Theory-2611001202020003] [Subject code for Practical-2611001202020004]

Course Code	205
Course Title	Basics of Python Programming
NCrF Credit level	4.5
Credits	4
Course Type	Major course
Course Subtype	Skill Development
Subject Type	Discipline Specific
Level of Course	200-299 (Intermediate Level)
Teaching per week	6 Hours (2 Hours Theory + 4 Hours of Practical)
Minimum Weeks per Semester	15 Weeks (including Class work, examination, preparation, Case study etc.)
Implementation Year	A.Y. 2026-27
Purpose of Course	To gain basic understanding of the concepts of Python as an Interpreter-based programming language plus its applications and tools. [Python codes can be executed using any open-source IDE. This is not IDE specific course.]
Course Objective	i) Develop programming skills using interpreter-based programming language. ii) Enhancing basic programming skills and student aware with various Python features
Pre-requisites	• Fundamental knowledge of computer programming. • Basics of Compiled and Interpreted languages. • Knowledge of Python IDE installation is recommended.
Course Outcome	After completing this course, a student is: • **CO1:** To be able to learn advanced programming concept of interpreter-based programming language. • **CO2:** To be proficient working on conditional statements, iterative, statements and fundamentals of python programming • **CO3:** To be able to represent compound data using lists, tuples and dictionaries in Python programs. • **CO4:** To be able to develop real world application. • **CO5:** To learn important libraries like Numpy, Pandas which are useful in Data analysis, Machine Learning.
Mapping between Course Outcomes (CO) with Program Specific Outcomes (PSO)	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	■	■	■		■		
CO2	■	■		■	■		
CO3	■	■		■	■		■
CO4					■	■	■
CO5					■	■	■

Course Content	**UNIT - 1. Fundamentals of Python** **1.1.** Concepts of Interpreter based programming language **1.2.** Introduction to Python **1.3.** Features and Applications of Python **1.4.** Structure of Python Programming language. **1.4.1.** Python code Indention and execution **1.4.2.** Comments in Python **1.4.3.** Python Interpreter **1.4.4.** Installing Python and Setting up Environment **UNIT - 2. Python Tokens, Character Sets and Data Types** **2.1.** Keywords, Identifiers and Literals in Python **2.2.** Variables **2.2.1.** Dynamic Declaration of variable and naming rules **2.2.2.** Assigning values to variables **2.3.** Operators in Python **2.3.1.** Arithmetic Operators **2.3.2.** Assignment Operators **2.3.3.** Comparison Operators **2.3.4.** Logical Operators **2.3.5.** Identity and member operators **2.4.** Python Data Types **2.4.1.** Numeric Types (int, float, complex) **2.4.2.** Sequence Types (Str, List, Tuple, Range) **2.4.3.** Mapping Type (dict) **2.4.4.** Set Type, Bool type **2.4.5.** Type Conversion and Type Casting **UNIT - 3. Input/ Output, Strings and UDF** **3.1.** print() and input() **3.2. Python Strings** **3.2.1.** Creating a String **3.2.2.** Multiline strings & triple quotes **3.2.3.** String as character array **3.2.4.** Accessing strings – Slicing and negative indexing **3.2.5.** String operations: concatenation, repetition, splitting and joining **3.3. String Methods:** **3.3.1.** centre, count, len, max, min, replace, lower, upper **3.4. User defined function** **3.4.1.** Defining and calling a UDF function **3.4.2.** Function with Parameters **3.4.3.** Parameters with default value **3.4.4.** Functions with return value **3.4.5.** Global vs. Local variables **UNIT - 4. Python Conditional and Iterative Statements** **4.1.** If statement, if..elif statement, if..elif…else statements, nested if **4.2.** Iterative statements **4.2.1.** While loop, nested while loop, break, continue statements.

	4.2.2. for loop, range, break, continue, pass and else with for loop, nested for loop. **4.3. Lists in Python** **4.3.1.** Characteristics of Lists **4.3.2.** Creating and accessing list elements **4.3.3.** Slicing and Negative Indexing, Iteration **4.3.4.** List methods (append, insert, pop, remove, reverse, sort, clear, copy, count, index, del) **4.4. Tuples in Python:** **4.4.1.** Characteristics of Tuples **4.4.2.** Creating and accessing tuple elements **4.4.3.** Slicing and Indexing tuples **4.4.4.** Methods to create tuple, count() and index() methods. **UNIT - 5. Python Collections and Library** **5.1.** Other Python Collections **5.1.1. Sets:** declaring set, access set data, set methods (add, clear, copy, discard, pop, remove, union, update). **5.1.2. Mapping Collection - Dictionary:** **5.1.2.1.** Creating a Dictionary **5.1.2.2.** Operations on Dictionary: Adding, Accessing and Removing elements **5.1.2.3.** Dictionary methods: get(), pop(), popitem(), clear(), copy() **5.2. Introduction to Numpy and Pandas** **5.2.1.** Overview of numpy **5.2.1.1.** Numpy methods (Mean, Median, Mode, Standard Deviation and Variance) **5.2.1.2.** Implementation of Numpy methods on numeric data set created using list. **5.2.2.** Pandas Dataframe **5.2.2.1.** Creating dataframe using list **5.2.2.2.** Creating dataframe using dict of equal length list **5.2.2.3.** Reading data using csv file (read_csv()) **5.2.2.4.** Writing data to csv file (to_csv()) **5.2.2.5.** Retrieving rows and columns from data frame using index **5.2.2.6.** Retrieving rows and columns using loc and iloc functions.

Reference Books	1. Learning Python -Mark Lutz: O'Reilly Media 2. Core Python Programming – by Wesley J Chun ISBN-13: 978-0132269933 3. Python for Everybody: Exploring Data in Python 3, by Charles Severance (Author), Aimee Andrion (Illustrator), Elliott Hauser (Editor), Sue Blumenberg (Editor) 4. An Introduction to Python - by van Rossum Guido ISBN: 9780954161767, 0954161769 5. Core Pyhton Application Programming – by Wesley J Chun Prentice Hall 6. Python Programming: Using Problem Solving Approach – Reema Thareja 7. Let Us Python – Yashavant Kanetkar 8. Core Python Programming - By Dr. R. Nageswara Rao, ISBN: 9789386052308
Teaching Methodology	Class Work, Discussion, Self-Study, Case study, Seminars and/or Assignments
Evaluation Method	Internal Assessment :25 Marks Theory + 25 Marks Practical = 50 Marks External Assessment :25 Marks Theory + 25 Marks Practical = 50 Marks 50% Internal assessment. - Attendance, Class and home Assignment, Unit tests - Practical exam, viva-voce, Journal 50% External assessment - Written Theory exam - Practical Exam, viva-voce

Course code: BVOC206

Course Title: Skill Enhancement Course (SEC-02)

Course Code	BVOC206
Course Title	Skill Enhancement Course - II (SEC – 02)
NCrF Credit level	4.5
Credit	2
Course Type	Skill Enhancement Course
Course Subtype	Skill Development
Subject Type	Discipline Specific
Level of Course	100-199 (Foundation / Introductory)
Teaching per Week	4 Hours (Any or Combination of Practical/Fieldwork/Internship/Project)
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Implementation Year:	A.Y. 2026-2027
Purpose of Course	- As per NEP (National Education Policy-2020), it is mandatory for students to select a 2 credit Skill Enhancement Course out of the choices given by the college/institute. - It will be mandatory for the student to opt minimum one 2-credit Skill Enhancement Course out of the list of offered courses recognized by the University during semester-1 to semester-5. - The student can start an alternative career in the field by obtaining higher degree of knowledge in the area. - It's aimed at imparting practical skills, embedded internship, hands-on training, soft skills, life skills, such approved online courses etc. to enhance the employability of students. This may also include courses as per the needof new evolving technology.
Course Objective	Obtaining skill in particular field along with the regular curriculum of the selected program is essential. It not only enhances the skill but also provide an opportunity to develop skill in particular area where one can pursue career in future. Skill enhancement provides the opportunity and knowledge for an individual to develop and strengthen the necessary skills to gain, maintain, and advance in a chosen area. Skill enhancement programs are focused around training that combines the best practices from varieties of areas. Skill enhancement or training typically uses a combination of cognitive and behaviour problem solving approaches, both of which are used to strengthen a person's positive skill develop.
Pre-requisite	No prior knowledge in the field is essential.
Course outcome	CO1: Student selects the area of skill as per his/her interest. The choices will be given by the institute/department. CO2: The students acquire basic and fundamental level of knowledge in the fieldthat the student opted. CO3: Understand the insight of the area and possibility of to explore more in thefield. CO4: Understand effective representation of problems in terms addressing theproblems. CO5: Learn to upskill and upgrade the knowledge in the area of selected subject.
Course Content (List of courses)	College can offer any one of the course from the following list: 206-01: Web Designing 206-02: Application of AI for Students [Detailed syllabus is available herewith]

Reference Books	As per the selection of the course
Teaching Methodology	Class Work / Discussion / Self-Study / Seminars / field works / practical training / and/or Assignments
Evaluation Method	50% Internal assessment. 50% External assessment. Internal Assessment :25 Marks External Assessment :25 Marks
Teaching Methodology	Class Work/ Discussion/ Self-Study/ Seminars/ field works/ practical training/ field work and/or Assignments.
Evaluation Method	50% Internal assessment. 50% External assessment. Maximum Marks: 50 (The course is Audit course. Evaluation and Assessment will be carried out at University level. On successful completion of the course, the student will be granted 2 credits.)

Course code: BVOC207
Value Addition Course-II (VAC-02)
Course Title: Environment - I

[Subject code-2611001202070002]

Program Name	**Bachelor of Vocational (IT)**
Semester	2nd
Course Code	BVOC207
Course Title	Environment – 1
NCrF Credit Level	4.5
Course Type	VAC
Course Subtype	Value Added Course
Subject Type	Intra-disciplinary
Level of Course	100-199 (Foundation/Introductory)
Course Duration	30 hours of Practical/Applied knowledge
Credit	Theory : 2 hours
Purpose of Course	The purpose of this course is to develop awareness and understanding among students about environmental issues, natural resources, ecological balance, and sustainable development. The course aims to make students socially responsible citizens by understanding the relationship between humans and the environment, the impact of human activities on natural resources, and the need for conservation and environmental protection for future generations.
Course Objective	After completion of this course, students will be able to: 1. Understand the basic concepts of environment and environmental studies. 2. Explain the relationship between humans and the environment. 3. Identify environmental problems and their causes and effects. 4. Understand natural resources and their conservation methods. 5. Develop environmental awareness and responsibility towards society. 6. Analyze environmental issues related to water, forest, land, and food resources. 7. Develop critical thinking regarding environmental sustainability and resource management.
Pre-requisite	There are no specific prerequisites for this course. However, students should have: • Basic understanding of science and environment from school level. • Awareness about natural resources and environmental issues. • Interest in environmental conservation and sustainable development.
Course Outcomes	CO1: Program Outcome of learning environment studies aims to enlighten the students to realize our prime social responsibility to conserve our environment in the face of increasing human population and anthropogenic activities which is the major cause of depletion of environmental resources and ecological balance. CO2: An Environmental Studies major will be able to apply lessons from various courses through field experiences. These experiences will allow students to develop a better sense of not only individual organisms, but of the systems in which these organisms live. Students will also see how natural systems and human-designed systems work together, as well as in conflict with each other. CO3: An Environmental Studies major will be able to do independent research on human interactions with the environment. CO4: Developing values and attitudes towards comprehending intricate environmental economic-social issues and actively taking part in resolving

	present environmental issues and averting those that arise in the future.
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	<table><tr><th>CO / PSO</th><th>PSO1</th><th>PSO2</th><th>PSO3</th><th>PSO4</th><th>PSO5</th><th>PSO6</th><th>PSO7</th></tr><tr><td>CO1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CO2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CO3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CO4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>
Course Content	**UNIT: 1- Introduction to Environment and Environmental Studies** 1.1. Definition and Components of Environment 1.2. Relationship between the different components of Environment 1.3. Man and Environment relationship 1.4. Impact of technology on Environment 1.5. Environmental Degradation 1.6. Multidisciplinary nature of the Environment studies 1.7. Its scope and importance in the present day Education System **UNIT: 2-Natural Resources** 2.1. Renewable and Non-renewable resources, exploitation and conservation, Role of individual in conservation of natural resources. 2.2. Water resources: Water sources Surface and Ground water sources, 63 Indian and Global Scenario. 2.3. Land as a resource, social issues 2.4. Forest resources: Definition and Classification of Forests Ecological and Economic importance and benefits of forest, Indian scenario, Deforestation: causes and effects remedial measures. 2.5. Food resources: Sources of food, Global and Indian food demand scenario, Limits of food production, Environmental effect of Agriculture.
Reference Books	1. Agarwal, K.C.: 2001 Environmental Biology. Nidi publication Ltd., Bikaner. (TB) 2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt.Ltd. Ahmedabad -380013. India. 3. Brunner R.C., 1989, Hazardous West incineration, McGraw Hill Inc.480p. (R) 4. Clark R.S.Marine Pollution, Clanderson Press Oxford (TB) 5. Cunningham, W.P.Cooper, T.H.Grohani, E. & Hepworth, M.T. 2001, Environmental Encyclopedia, Jaico Pub. House, Mumbai, 1196p. (R)
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	50% Internal assessment. : - Attendance, Class and home Assignment - Test (Theory / MCQ) 50% External assessment : (Theory / MCQ)

Course Code: BVOC206-01

[Subject code-2611001202060002]

Course Title: Web Designing

Course Code	BVOC206-01
Course Title	Web Designing
Credits	2
Course Category	Skill Enhancement Course (SEC)
Level of Course	100-199 (Foundation/Introductory)
Course Duration	30 hours of Practical/Applied knowledge
Teaching per Week	4 Hours Practical
Implementation Year:	A.Y. 2026-2027
Purpose of Course	- To introduce the fundamentals of Internet, and the principles of web design. - To construct basic websites using HTML and Cascading Style Sheets. - To build dynamic web pages with validation using Java Script objects and by applying different event handling mechanisms.
Course Objective	To make students aware of web terminology and website development tools. The students aware about the real functions of website development.
Pre-requisite	Basic knowledge of windows based applications. Some very basic acquaintance with computers and the WWW is assumed.
Course Outcomes	CO1: Students get knowledge of HTML CO2: To learn how to make attractive webpage using CSS. CO3: Students will able to learn how to develop dynamic and attractive web page using JavaScript. CO4: Students will able to understand about responsive webpage with the help of Bootstrap.
Mapping between Course Outcomes(CO) with Program Specific Outcomes(PSO)	

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1							
CO2							
CO3							
CO4							

Course Content

UNIT-1: Fundamentals of HTML

1.1 Introduction to HTML

1.2 Structure of HTML page

1.2.1 Elements of HTML

1.2.2 HTML documents

1.3 HTML Tags

1.3.1 Types of tags: paired and unpaired

1.3.2 Heading and paragraph tag

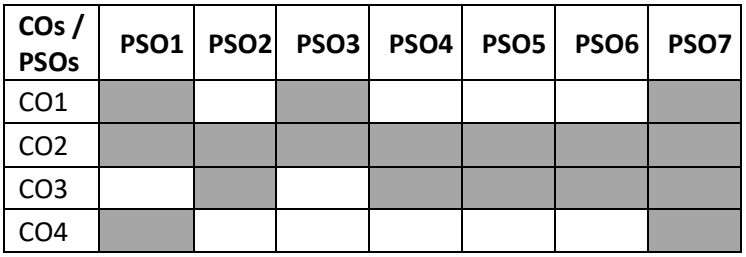
1.3.3 Working with text, list, frame and table

1.3.4 Working with Forms and Controls

1.3.5 Working with Hyperlinks, images and Multimedia

	UNIT-2: Introduction to Cascading Style Sheets 2.1. Concept of CSS 2.1.2 Creating Style Sheet 2.1.3 Benefits of CSS 2.1.4 CSS Properties, CSS Styling (Background, Text Format, Controlling Fonts) 2.1.5 Working with block elements and objects 2.1.6 Working with Lists and Tables, CSS Id and Class, CSS Color **UNIT-3: JavaScript** 3.1 Overview of Javascript 3.2 Basic data types 3.3 Javascript operators and Events 3.4 Javascript conditions and loop control structures 3.5 standard functions 3.6 arrays and objects, event driven programming in Javascript 3.7 Event handling with HTML **UNIT-4: Introduction to Bootstrap** 4.1 Fundamentals of Bootstrap 4.2 Bootstrap Grid System 4.3 Bootstrap form and Form Components
Reference Books	1. HTML Unleased, Darnell Rick - Techmedia 2. HTML & CSS: The complete Reference – Thomas Powel- McGraw Hill Education. 3. HTML, CSS, and JavaScript All in One Covering HTML5, CSS3, and ES6, Sams Teach Yourself By Julie C. Meloni, Jennifer Kyrnin · 2018. 4. HTML & Web Design, K. Jamsa, Konrad King, TMH, 2002. 5. Robbins, J. (2018). Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics. United States: O'Reilly Media. 6. Java script programming for absolute beginner, Harris – PHI 7. Learning Bootstrap 4 – Matt Lambert – Packt Publishing 8. Bootstrap Responsive web development – Jake Spurlock – O'Reilly 9. Beginning CSS: Cascading Style Sheets for Web Design-Ian Pouncey, Richard York, Wiley India.
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	50% Internal assessment: - Attendance, Class and home Assignment - Test (Practical / MCQ) 50% External assessment: - Practical/MCQ

Course Code: BVOC206-02
Course Title: Application of AI for Students
[Subject code-2611001202060003]

Course Code	BVOC206-02
Course Title	Application of AI for Students
Credits	2
Course Category	Skill Enhancement Course (SEC)
Level of Course	100-199 (Foundation/Introductory)
Course Duration	30 hours of Practical/Applied knowledge
Purpose of Course	This course introduces students to the practical uses of generative AI tools. It helps students improve academic productivity, enhance business-related tasks, and develop skills for future career growth using tools like ChatGPT, Copilot, Gemini, and DeepSeek. It focuses on ethical AI use. It equips students with AI-powered solutions for tasks such as report writing, problem-solving, presentations, research, communication, and career development.
Course Objective	(1) Provide Practical knowledge and practice of ChatGPT, Copilot, Gemini, and DeepSeek (2) Learn about report writing, problem-solving, presentations, research, communication
Pre-requisite	Basic knowledge of a blend of digital literacy, critical thinking, and basic technical foundations
Course Outcome	This course ensures students gain hands-on experience with AI tools for their academic and personal success, making learning more efficient and engaging. After successful completion of the course, students will be able to: **CO1:** Understand the fundamentals capabilities and differences between AI tools like Gemini, and DeepSeek. **CO2: D**emonstrate the ability to use AI ethically and effectively for assignment, drafting and research. **CO3:** Apply techniques to enhance report writing including structure and data presentation. **CO4:** Understand the practical limitations and accuracy of generative AI in an academic context.
Mapping Between COs and PSOs	
Course content	**Unit 1: Iintroduction to Generative AI & Its Role in Learning** 1.1 What is Generative AI? Basics & Real-Life Examples 1.2 AI in Business and Education: How It's Changing Learning & Work. 1.3 Overview of AI Tools: Gamma, GPT, Copilot, Gemini, and DeepSeek. 1.4 Ethical & Responsible Use of AI for Students. **Unit 2: Exploring AI Tools for Academic & Productivity Tasks** 2.1. GPT (ChatGPT, OpenAI): Writing essays, summarizing articles, and

	brainstorming ideas. 2.2. Copilot (Microsoft AI): Enhancing productivity in Word, Excel, and PowerPoint. 2.3. Gemini (Google AI): Research assistance, quick explanations, and data insights. 2.4. DeepSeek: AI for searching and analyzing academic and business trends. **Unit 3: Hands-On AI Applications for Student Life & Academics** 3.1. Assignment & Report Writing: Using AI to generate ideas, outlines, and improves writing. 3.2. Presentation Creation: AI tools for designing slides and structuring content. 3.3. Note-Taking & Study Help: AI for summarizing lectures and creating study guides. 3.4. Email & Communication: AI for writing professional emails and messages. 3.5. Event & Project Planning: AI for organizing group projects, schedules, and to-do lists. **Unit 4: AI for Career Growth & Future-Ready Skills** 4.1. Resume & Cover Letter Writing: Using AI to create professional resumes. 4.2. Interview Preparation: AI-generated mock interview questions and feedback. 4.3. Networking & Personal Branding: AI for writing LinkedIn posts and improving online presence. 4.4. Time Management & Productivity: AI tools for scheduling and tracking progress 4.5. Final Hands-On Activity: Use AI to complete a real-life academic or career-related task.
Reference Books	1. Introduction to Generative AI by Google Cloud Skills Boost. 2. Generative AI for Beginners by Microsoft Open Source. 3. Video: The Best Real World Examples of Generative AI. 4. Article: Generative AI Examples | Google Cloud. 5. Article: 20 Examples of Generative AI Applications Across Industries. 6. Article: Best 5 AI Tools: DeepSeek, OpenAI, Gemini, Grok and Copilot.
Teaching Methodology	Class Work, Discussion, Lab work, Self-Study, Seminars and/or Assignments
Evaluation Method	50% Internal assessment: - Attendance, Class and home Assignment - Test (Theory / MCQ) 50% External assessment. : : - Practical / MCQ