

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI



THREE /FOUR YEAR DEGREE OF BACHELOR OF SCIENCE

Bachelor of Science

SUBJECT: Computer Application (Vocational)

FACULTY: SCIENCE AND TECHNOLOGY

(Courses effective from Academic Year 2026-2027)

Under Uniform NEP 2020

SCHEME

Semester I and II

Semester III and IV

Semester V and VI

Sant Gadge Baba Amravati University, Amravati

FACULTY: Science and Technology

Teaching and Learning Scheme: for the Degree of Bachelor of Science with the Major: Computer Application (Vocational)

(Three Years- Six Semesters Bachelor's Degree Programme)

FIRST YEAR: SEMESTER – I

Mode of Teaching	Vertical No.	The Vertical	Type of Course	Course Code	Course Name	Credits	Workload (Hrs./Week)	Vertical Workload (Hrs./Week)
Classroom Teaching/ Lab Work (Practical)/ Outdoor / Field	a.	Major/Minor: Computer Application (Vocational)	Theory1	110201	Fundamentals of Computer	2	2	6
			Lab/Practical-1	110202	Laboratory on Office Automation Tools	2	4	
	b.	Major/Minor:	-	-	-	4	6	6
	c.	Generic/ Open Elective	Theory1	110271	Information Communication Technology	2	2	4
			Theory2	110272	Business Data Processing	2	2	
	d.	VSC	-	-	-	-	-	4
		SEC	Lab/Practical-3	110281	Laboratory on Information Communication Technology Tools	2	4	
	e.	AEC - English	Theory	-	-	1	1	6
		AEC –MIL	Theory	-	-	1	1	
		IKS-Generic	Theory	-	-	2	2	
		VEC	Theory	-	-	2	2	
	f.	CC	Outdoor	-	-	2	4	4
		TOTAL				22	30	30

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FIRST YEAR: SEMESTER – II

Mode of Teaching	Ver. No	The Vertical	Type of Course	Course Code	Course Name	Credits	Workload (Hrs./Week)	Vertical Workload (Hrs./Week)
Classroom Teaching/ Lab Work (Practical)/ Outdoor / Field	a.	Major: Computer Application (Vocational)	Theory2	110203	Programming with C	2	2	6
			Lab/Practical-4	110204	Laboratory on Programming with C	2	4	
	b.	Minor: Computer Application (Vocational)	-	-	-	4	6	6
	c.	Generic/ Open Elective	Theory3	110273	E Business	2	2	4
			Theory4	110274	Website Design Principles	2	2	
	d.	VSC	Lab/Practical-6	110282	Laboratory on E-Commerce	2	4	8
		SEC	Lab/Practical-7	110283	Laboratory on Web Publishing	2	4	
	e.	AEC - English	Theory	-	-	1	1	4
		AEC –MIL	Theory	-	-	1	1	
		VEC	Theory	-	-	2	2	
	f.	CC	Outdoor	-	-	2	4	4
		TOTAL				22	32	32

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SECONOD YEAR: SEMESTER – III

Mode of Teaching	Ver. No	The Vertical	Type of Course	Course Code	Course Name	Credits	Workload (Hrs./Week)	Vertical Workload (Hrs./Week)
Classroom Teaching/ Lab Work (Practical)/ Outdoor / Field	a.	Major: Computer Application (Vocational)	Theory3	110205	Data Structure (DS)	2	2	10
			Theory4	110206	Relational Database Management System (RDBMS)	2	2	
			Lab/Practical-8	110207	Laboratory on DS and RDBMS	2	4	
			IKS – Major Specific	110208	IKS in Computational Sciences	2	2	
	b.	Minor: Computer Application (Vocational)	Theory3	110261	Data Structure and RDBMS	2	2	6
			Lab/Practical-9	110262	Laboratory on Data Structure and RDBMS	2	4	
	c.	Generic/ Open Elective	Theory5	110275	E Content Development	2	2	2
	d.	VSC	Lab/Practical-10	110284	Laboratory on MySQL	2	4	4
	e.	AEC - English	Theory	-	-	1	1	2
		AEC –MIL	Theory	-	-	1	1	
	f.	FP/CES	Project	110291	Field Project / Community Engagement Services in Computer Science/Application: Phase-I	2	4	8
		CC	Outdoor	-	-	2	4	
		TOTAL				22	32	32

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SECOND YEAR: SEMESTER – IV

Mode of Teaching	Vertical No	The Vertical	Type of Course	Course Code	Course Name	Credits	Workload (Hrs./Week)	Vertical Workload (Hrs./Week)
Classroom Teaching/ Lab Work (Practical)/ Outdoor / Field	a.	Major: Computer Application (Vocational)	Theory5	110209	OOP with C++	2	2	10
			Theory6	110210	Computer Networks	2	2	
			Theory	110211	Python Programming	2	2	
			Lab/Practical-11	110212	Laboratory on OOP with C++ and Python Programming	2	4	
	b.	Minor: Computer Application (Vocational)	Theory4	110263	C++ and Python Programming	2	2	6
			Lab/Practical-12	110264	Laboratory on C++ and Python Programming	2	4	
	c.	Generic/ Open Elective	Theory6	110276	Web Technologies	2	2	2
	d.	VSC	Lab/Practical-13	110285	Database using Access Laboratory	2	4	4
	e.	AEC - English	Theory	-	-	1	1	2
		AEC –MIL	Theory	-	-	1	1	
	f.	FP/CES	Project	110292	Field Project / Community Engagement Services in Computer Science/Application: Phase-II	2	4	8
		CC	Outdoor	-	-	2	4	
		TOTAL				22	32	32

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THIRD YEAR: SEMESTER – V

Mode of Teaching	Vertical. No	The Vertical	Type of Course	Course Code	Course Name	Credits	Workload (Hrs/Week)	Vertical Workload (Hrs/Week)
Classroom Teaching/ Lab Work (Practical)/ Outdoor / Field	a.	Major: Computer Application (Vocational)	Theory7	110213	Digital Communication Technologies	2	2	16
			Theory8	110214	Scripting Language	2	2	
			Theory9	110215	User Interface Design	2	2	
			Lab/Practical-15	110216	Laboratory on Scripting Language	2	4	
		Major: Computer Application (Vocational) (Elective)	Theory1	110217	M-Commerce	2	2	
			Theory1	110218	Cryptography			
			Lab/Practical-17	110219	Laboratory on M-Commerce	2	4	
			Lab/Practical-17	110220	Laboratory on Cryptography			
	b.	Minor: Computer Application (Vocational)	Theory5	110265	Digital Image Processing	2	2	6
			Lab/Practical-18	110266	Laboratory on Digital Image Processing	2	4	
	c.	Generic/ Open Elective	-	-	-	-	-	-
	d.	VSC	Lab/Practical-19	110286	Laboratory on PHP Programming	2	4	8
		SEC	Lab/Practical	110287	Laboratory on User Interface Design	2	4	
	e.	VEC	-	-	-	-	-	0
	f.	FP/CES	Project	110293	Project in Computer Application (Vocational)	2	4	4
		CC	-	-	-	-	-	-
		TOTAL				22	34	34
			*Theory		Foundation of Artificial Intelligence	2	2	2

** Implementation of the Course of “Foundation of Artificial Intelligence” for the U.G. Programmes Under all the faculties. As per Extra-Ordinary Notification No. 241/2025 of SGBAU, dated 24/12/2025. Students will earn grade from written examination marks conducted by the concerning college.*

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THIRD YEAR: SEMESTER – VI

Mode of Teaching	Vertical. No	The Vertical	Type of Course	Course Code	Course Name	Credits	Workload (Hrs/Week)	Vertical Workload (Hrs/Week)	
Classroom Teaching/ Lab Work (Practical)/ Outdoor / Field	a.	Major: Computer Application (Vocational)	Theory10	110221	Programming with LISP	2	2	16	
			Theory11	110222	Cyber Law and Ethics	2	2		
			Theory	110223		2	2		
			Lab/Practical-20	110224	Laboratory on Programming with LISP	2	4		
		Major: Computer Application (Vocational) (Elective)	Theory2	110225	Artificial Intelligence	2	2		
			Theory2	110226	Computer Animation				
			Lab/Practical-22	110227	Laboratory on Artificial Intelligence	2	4		
			Lab/Practical-22	110228	Laboratory on Computer Animation				
	b.	Minor: Computer Application (Vocational)	Theory6	110267	Advance Python Programming	2	2	6	
			Lab/Practical-23	110268	Laboratory on Advance Python Programming	2	4		
	c.	Generic/ Open Elective	-	-	-	-	-	-	
	d.	VSC	Lab/Practical-24	110288	Laboratory on R Programming	2	4	4	
	e.	VEC		-	-	-	-	-	
	f.	Internship / Apprenticeship	OJT	110294	Internship / Apprenticeship in Computer Application (Vocational)	4	8	8	
			FP/CES	Project	-	-	-		-
			-		-	-	-		-
		TOTAL				22	34	34	

Notes:

- a. # Here mention the title of Degree. For example - Degree of Bachelor of Science with the Major: Computer Application (Vocational) Discipline / Subject Computer Application (Vocational) as Degree of Bachelor of Science (Computer Application (Vocational))
- b. The strength of the batch of the Practical for UG Classes shall be 16 with an addition of 10% with the permission of Hon'ble Vice Chancellor. However, for Music Discipline the batch size shall be of 7 students. The number of the students required to constitute a batch or calculate the workload shall be in accordance with the relevant Government Resolution in force at the time, applicable to specific time, region, course type, mode of instruction, and other pertinent factors.
- c. 1 Credit shall mean 1 Hour Teaching per Week per Semester (Total 15 Hrs/ Semester), the duration of 1 Teaching Period will be 60 Minutes. For Practical 1 Credit shall mean 2 Hour Teaching per Week per Semester (Total 30 Hrs/ Semester).
- d. For Examination and Evaluation of Theory Courses, 40 % Marks shall be assigned to Internal Examination and 60% Marks shall be assigned to end-semester external university examination.
- e. **Co-curricular Courses:** Health and wellness, Yoga Education, Sports and Fitness, Cultural Activities, NSS/NCC, Fine/Applied/Visual/Performing Arts During Semester I, II, III, IV, V and VI. These courses may be taught by Physical Education Director or may be assigned to Language Teacher by the Principal of HEI based on the expertise of the concerned.
- f. Value Education Courses to be selected from the Basket of Courses provided by the University. These courses may be assigned to the Language Teacher by the Principal of HEI based on the expertise of the concerned.
- g. **Generic / Open Elective Courses (GE/OE):** Courses to be selected from the Basket of Courses provided by the University
- h. **Abbreviations:** Department Specific Core: DSC, Department Specific Elective: DSE, FSC: Faculty Specific Core, FSE: Faculty Specific Elective, Indian Knowledge System: IKS, Inter Faculty Specific Core: IFSC, Inter Faculty Specific Elective: IFSE, Theory : Th, Practical/Practicum: Pr, Environment Studies: ES, Pre-requisite Course mandatory if applicable: Prq, Laboratory: Lab (Practical), Generic/ Open Electives: OE; Vocational Skill and Skill Enhancement Courses: VSEC; Vocational Skill Courses: VSC; Skill Enhancement Courses: SEC; Ability Enhancement Courses: AEC; Value Education Courses: VEC; OJT: On Job Training: Internship/ Apprenticeship; Field projects: FP; Community Engagement and Service: CES; Co-curricular Courses: CC; RM: Research Methodology; Research Project: RP; MIL: Modern Indian Language

Curriculum Design:

Each theory paper of Major: Computer Application (Vocational) shall be of 2 Credits comprising of 4 Units with Teaching Hours as mentioned in the table. The pattern of theory papers shall be as per following template –

Level	Semester	Course Code	Course Name	Credits	Teaching Hours	Exam Duration	Max Marks
4.5	I	101200	XXXXX	2	30	2 Hrs	30

The Curriculum of any Course shall be designed as per following template:

Course Objectives:				
Course Outcomes:	As per Blooms Taxonomy (4 to 6)			
Unit System	Contents	Workload Allotted	Weightage of Marks Allotted	Incorporation of Pedagogies

Unit I	Detailed pointwise contents with at least four points	8 Hrs	8 Marks	BoS shall recommend suitable pedagogical strategies, both classical and contemporary innovations, for integration into the Teaching, Learning, and Evaluation (T, L, & E) Processes. These strategies should be tailored to enhance the delivery and comprehension of the course content within each Unit, ensuring that they align with the educational objectives and learning outcomes.
Unit II	Detailed pointwise contents with at least four points	7 Hrs	7 Marks	
Unit III	Detailed pointwise contents with at least four points	8 Hrs	8 Marks	
Unit IV	Detailed pointwise contents with at least four points	7 Hrs	7 Marks	
References:	Study Materials in the form of - Reference Books, Text Books, Research Articles, Digital Resources like Weblinks, E- Contents, Educational Software, Databases, etc.			
Model Questions:	Short Type (At least 8), Long Type (At least 4) and MCQs for Internal Assessment (At least 8) wherever applicable as the need of curriculum.			