



Panipat Institute of Engineering & Technology

An Autonomous Institution, Approved by A.I.C.T & Affiliated to Kurukshetra University, Kurukshetra
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Scheme of Studies and Examinations, and the Syllabi for

Under Graduate Degree Programme

Bachelor of Computer Applications

(in phased manner)

as per NEP-2020 guidelines

**With Multiple Entry-Exit and Internship
w.e.f. Academic Session 2024-25**

DEPARTMENT OF COMPUTER APPLICATIONS - UG

Scheme of Studies and Examinations (w.e.f. Session 2024 - 2025)											
Bachelor of Computer Applications Semester – III											
Course Code	Course Title	Period(s)			Hours/ Week	Credit (s)	Continuous Internal Examination	Semester End Examination	Total Marks	Duration of Exam (Hours)	
							(CIE)	(SEE)	(CIE+SEE)		
		L	T	P			Max	Max	Max		
Core Course (CC)											
BCA-201A	Software Engineering	3	0	0	3	3	40	60	100	3	
BCA-207A	Data Structures	3	0	0	3	3	40	60	100	3	
BCA-203A	Database Management System	3	0	0	3	3	40	60	100	3	
Skill Enhancement Course (SEC)											
BCA-205A	Programming with Java	3	0	0	3	3	40	60	100	3	
Ability Enhancement Course (AEC)											
BBA-217A	Personality Development	2	0	0	2	2	40	60	100	3	
Practicum Course (PC)											
BCA-271A	Data Structures Lab	0	0	4	4	2	50	50	100	3	
BCA-273A	Database Management System Lab	0	0	4	4	2	50	50	100	3	
BCA-275A	Programming with Java Lab	0	0	4	4	2	50	50	100	3	
Total		14	0	12	26	20	350	450	800		

Scheme of Studies and Examinations (w.e.f. Session 2024 - 2025)											
Bachelor of Computer Applications Semester – IV											
Course Code	Course Title	Period(s)			Hours/ Week	Credit (s)	Continuous Internal Examination	Semester End Examination	Total Marks	Duration of Exam (Hours)	
							(CIE)	(SEE)	(CIE+SEE)		
		L	T	P			Max	Max	Max		
Core Course (CC)											
ASH-MAT-215A	Probability and Statistics	3	0	0	3	3	40	60	100	3	
BCA-122A	Programming with Python	3	0	0	3	3	40	60	100	3	
BCA-215A	Full Stack Development-1 (MERN)	3	0	0	3	3	40	60	100	3	
Value Added Course (VAC)											
BCA-202A	Quantitative Aptitude	2	0	0	2	2	40	60	100	3	
Skill Enhancement Course (SEC)											
BCA-204A	Animation	2	0	0	2	2	40	60	100	3	
Discipline specific Elective Course (DSE)											
BCA-252A	Elective-I	3	0	0	3	3	40	60	100	3	
Practicum Course (PC)											
BCA-272A	Programming with Python Lab	0	0	4	4	2	50	50	100	3	
BCA-274A	Full Stack Development-1 (MERN) Lab	0	0	4	4	2	50	50	100	3	
BCA-276A	Animation Lab	0	0	4	4	2	50	50	100	3	
Total		16	0	12	28	22	390	510	900		
Grand Total (Exit with 2 years Diploma)		64	0	40	104	88	1600	2000	3600		

Note 2: The Industrial Internship shall be of 4 credits duration of 45-60 days after the 4th semester. If a student takes exit after 4th semester with **Under Graduate Diploma in Computer Applications**, marks of Industrial Internship (either done after 2nd or 4th semester) shall be counted in 4th semester itself.

Scheme of Studies and Examinations (w.e.f. Session 2024 - 2025)											
Bachelor of Computer Applications Semester – V											
Course Code	Course Title	Period(s)			Hours/ Week	Credit (s)	Continuous Internal Examination	Semester End Examination	Total Marks	Duration of Exam (Hours)	
							(CIE)	(SEE)	(CIE+SEE)		
		L	T	P			Max	Max	Max		
Core Course (CC)											
BCA-212A	Data Communication and Computer Networks	3	0	0	3	3	40	60	100	3	
BCA-301A	Data Analysis using Excel	3	0	0	3	3	40	60	100	3	
BCA-218A	Full Stack Development-2 (MEAN)	3	0	0	3	3	40	60	100	3	
Discipline specific Elective Course (DSE)											
BCA-351A	Elective-II	3	0	0	3	3	40	60	100	3	
Skill Enhancement Course (SEC)											
BCA-371A	Seminar	0	0	2	2	1	100		100	3	
Practicum Course (PC)											
BCA-373A	Data Analysis using Excel Lab	0	0	4	4	2	50	50	100	3	
BCA-375A	Full Stack Development-2 (MEAN) Lab	0	0	4	4	2	50	50	100	3	
Industrial Internship (INTR)											
BCA-377A	Industrial Internship	0	0	0	0	4	100		100	3	
Total		12	0	10	22	21	460	340	800		
Note 3: If a student pursues 3 years UG Programme without taking Exit option, the Industrial Internship (either done after 2nd or 4th semester) will be taken into account in 5th semester.											
Scheme of Studies and Examinations (w.e.f. Session 2024 - 2025)											
Bachelor of Computer Applications Semester – VI											
Course Code	Course Title	Period(s)			Hours/ Week	Credit (s)	Continuous Internal Examination	Semester End Examination	Total Marks	Duration of Exam (Hours)	
							(CIE)	(SEE)	(CIE+SEE)		
		L	T	P			Max	Max	Max		
Core Course (CC)											
BCA-224A	Data Mining and Warehousing	3	0	0	3	3	40	60	100	3	
BCA-302A	Machine Learning	3	0	0	3	3	40	60	100	3	
Discipline specific Elective Course (DSE)											
BCA-352A	Elective-III	3	0	0	3	3	40	60	100	3	
Skill Enhancement Course (SEC)											
BBA-304A	Entrepreneurship and Startups	2	0	0	2	2	40	60	100	3	
Practicum Course (PC)											
BCA-372A	Data Mining and Warehousing Lab	0	0	4	4	2	50	50	100	3	
BCA-374A	Machine Learning Lab	0	0	4	4	2	50	50	100	3	
BCA-376A	Minor Project	0	0	8	8	4	50	50	100	3	
Total		11	0	16	27	19	310	390	700		
Grand Total (Exit with 3 years Degree)		87	0	66	153	124	2270	2730	5000		

Scheme of Studies and Examinations (w.e.f. Session 2024 - 2025)											
Bachelor of Computer Applications Semester – VII (Honours)											
Course Code	Course Title	Period(s)			Hours/ Week	Credit (s)	Continuous Internal Examination	Semester End Examination	Total Marks	Duration of Exam (Hours)	
							(CIE)	(SEE)	(CIE+SEE)		
		L	T	P			Max	Max	Max		
Honour Course (HC)											
BCA-451A	Design and Analysis of Algorithm	3	0	0	3	3	40	60	100	3	
BCA-453A	Optimization Techniques	3	0	0	3	3	40	60	100	3	
Value Added Course (VAC)											
BT-ME-112A	Design Thinking and Innovation	2	0	0	2	2	40	60	100	3	
Practicum Course (PC)											
BCA-471A	Design and Analysis of Algorithm Lab	0	0	4	4	2	50	50	100	3	
BCA-473A	Major Project-1	0	0	20	20	10	50	50	100	3	
Total		8	0	24	32	20	220	280	500		
Scheme of Studies and Examinations (w.e.f. Session 2024 - 2025)											
Bachelor of Computer Applications Semester – VIII (Honours)											
Course Code	Course Title	Period(s)			Hours/ Week	Credit (s)	Continuous Internal Examination	Semester End Examination	Total Marks	Duration of Exam (Hours)	
							(CIE)	(SEE)	(CIE+SEE)		
		L	T	P			Max	Max	Max		
Honour Course (HC)											
BCA-315A	Cryptography and Network Security	3	0	0	3	3	40	60	100	3	
BCA-452A	Computer Graphics	3	0	0	3	3	40	60	100	3	
Practicum Course (PC)											
BCA-472A	Computer Graphics Lab	0	0	4	4	2	50	50	100	3	
BCA-474A	Major Project-2	0	0	20	20	10	50	50	100	3	
Total		6	0	24	30	18	180	220	400		
Grand Total (4 years Honours Degree)		101	0	114	215	162	2670	3230	5900		

Scheme of Studies and Examinations (w.e.f. Session 2024 - 2025)											
Bachelor of Computer Applications Semester – VII (Honours with Research)											
Course Code	Course Title	Period(s)			Hours/ Week	Credit (s)	Continuous Internal Examination	Semester End Examination	Total Marks	Duration of Exam (Hours)	
							(CIE)	(SEE)	(CIE+SEE)		
		L	T	P			Max	Max	Max		
Honour Course (HC)											
BCA-455A	Research Methodology	3	0	0	3	3	40	60	100	3	
BCA-457A	Image Processing	3	0	0	3	3	40	60	100	3	
Value Added Course (VAC)											
BT-ME-112A	Design Thinking and Innovation	2	0	0	2	2	40	60	100	3	
Practicum Course (PC)											
BCA-475A	Image Processing Lab	0	0	4	4	2	50	50	100	3	
BCA-473A	Major Project-1	0	0	20	20	10	50	50	100	3	
Total		8	0	24	32	20	220	280	500		
Scheme of Studies and Examinations (w.e.f. Session 2024 - 2025)											
Bachelor of Computer Applications Semester – VIII (Honours with Research)											
Course Code	Course Title	Period(s)			Hours/ Week	Credit (s)	Continuous Internal Examination	Semester End Examination	Total Marks	Duration of Exam (Hours)	
							(CIE)	(SEE)	(CIE+SEE)		
		L	T	P			Max	Max	Max		
Practicum Course (PC)											
BCA-476A	Dissertation	0	0	36	36	18	100	100	200	3	
Total		0	0	36	36	18	100	100	200		
Grand Total (4 years Honours with Research Degree)		95	0	126	221	162	2590	3110	5700		

Abbreviations Used:

Abbreviation	Full Form	Description
CC	Core Course	Compulsory core course for the programme, CC will be a theory course of 3 credits
PC	Practicum Course	Compulsory practical course (software lab) of 2 credits
INTR	Industrial Internship	<ul style="list-style-type: none"> A student can do Industrial Internship of 45-60 days duration after the 2nd or 4th semester. It will be of 4 credits. If a student pursues 3 year UG Programme without taking Exit option, this internship (either done after 2nd or 4th semester) will be taken into account in 5th semester. If a student takes Exit after 2 years in UG Programme, this internship (either done after 2nd or 4th semester) will be taken into account in 4th semester. If a student takes Exit after 1 year in UG Programme, the mandatory internship done after 2nd semester will be taken into account in 2nd semester.
SEC	Skill Enhancement Course	These courses aim at imparting knowledge, practical skills, hands-on training and competencies, soft skills, etc. to enhance the employability of students.
AEC	Ability Enhancement Courses	These courses aim at enabling the students to achieve competency in the English language with special emphasis on communication skills.

VAC	Value-Added Course	This course aims to instil in students (i) Universal Human Values, (ii) Environmental Studies (iii) Quantitative Aptitude.
MDC	Multi-Disciplinary Course	<p>These courses are based on introductory knowledge in a subject which is different from the main discipline of study to gain knowledge across the disciplines. Students are not allowed to choose or repeat courses already undergone at the Senior Secondary Level (Class XII) or disciplines of study under this category.</p> <p>Provided further that if a Multidisciplinary Course (MDC) across the discipline cannot be offered by a Department/ Institute, due to its constraints and available resources, then</p> <p>i) A subject from the same discipline can be offered as a MDC course if that subject also belongs to the list of subjects of some other discipline.</p> <p>ii) MDC can be opted out of Massive Open Online Courses (MOOCs) from NPTEL, SWAYAM. It shall be of minimum 2 credits.</p>
DSE	Discipline Specific Elective Course	A discipline-specific elective course is a course aimed at imparting options for varied knowledge and skills in the specialized fields of a discipline/subject.
HC	Honour Course	A honour course in the 4 th year of the Honours or Honours with Research Degree Programme.

List of Discipline Specific Elective Courses

Elective No.	Semester	Course Code	Elective Course Name
Elective-I	IV	BCA-252A(i)	High Performance Networks
		BCA-252A(ii)	Compiler Design
Elective-II	V	BCA-351A(i)	Software Project Management
		BCA-351A(ii)	Theory of Computation
Elective-III	VI	BCA-352A(i)	Linux Operating System
		BCA-352A(ii)	Fundamentals of Cloud Computing

Note 4: Relative weightage of Continuous Internal Evaluation (CIE) and Semester End Examination (SEE), criteria of passing marks, evaluation procedure, and other guidelines are as per the Ordinance of Under Graduate Degree Programmes: Bachelor of Computer Applications, Bachelor of Computer Applications (Cloud Technology and Information Security), Bachelor of Computer Applications (Data Science).