CURRICULUM
BACHELOR OF COMPUTER APPLICATIONS
CHOICE BASED CREDIT SYSTEM

STUDENTS LEARNING OUTCOMES

The curriculum and syllabi for Bachelor of Computer Applications (BCA) program (2017-18) conform to Outcome Based Education (OBE) for a flexible and structured Choice Based Credit system (CBCS). In general, **ELEVEN STUDENT OUTCOMES** (a-k) have been identified and the curriculum and syllabi have been chosen in such a way that each of the modules meets one or more of these outcomes. Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire as they progress through the program. Further, each module in the program spells out clear instructional objectives which are mapped to the student outcomes.

The Student Outcomes are:

(a)   Ability to apply knowledge of Mathematics and science in solving computational problems.

(b)   Ability to understand the Computing concepts and their applications using the acquired broad based knowledge.

(c)   Ability to design, set up and conduct practical.

(d)   Ability to use the techniques, skills, and modern Software tools for software development.

(e)   Ability to learn fundamentals of Algorithms, various data structures and to use them as per need during development of programs.

(f)   Ability to identify and analyze software problems in multiple aspect including coding, testing and implementation in industrial applications.

(g) Ability to design, develop and verify software systems to meet desired needs within realistic constraints ensuring quality, reliability, security in addition to satisfying economical, ethical, social and environmental constraints.

(h) Ability to apply Enterprise level application software for design of diverse software products.

(i) An ability to communicate effectively in diverse groups and exhibit leadership qualities.

(j) An understanding of professional and ethical responsibility.

(k) To develop an understanding on global environment and its protection.

BACHELOR OF COMPUTER APPLICATIONS

SUMMARY OF PROGRAM CURRICULUM

Category			Total Number of Credits (BCA)	Min Required Credits (BCA)	Percentage of Total credits
G	General	G	12	8	8%
E	BCA	Program Core (PC)	88	88	
		Program Elective (PE)	20	20	
		Generic Elective (GE)	8	4	
		Project (PD)	12	12	
Total Engineering			128	124	80%
M	Mangement	M	7	7	4%
P	Professional Enrichment	Ability Enhancement (AE)	8	7	
		Skill Enhancemet (SE)	2	2	
		Creativity & Innovation (CI)	1	0	
		Co-Curricular Activity (CA)	1	0	
Total Professional Enrichment			12	9	8%
Overall Total			159	148	100%

Note:

Students are to earn at least 148 credits out of 159 credits to become eligible for the award of BCA degree.

PROGRAM SCHEME

SEMESTER – I

MODULE CODE	CATEGORY	SUB-CATEGORY	MODULE	L	T	P	C
COAP1101	BCA	PC	COMPUTER FUNDAMENTAL AND PROGRAMMING	3	1	0	3.5
COAP1102	BCA	PC	PROGRAMMING WITH C	4	0	0	4
COAP1103	BCA	PC	PROGRAMMING WITH C LAB	0	0	4	2
COAP1104	BCA	PC	PC SOFTWARE	4	0	0	4
COAP1105	BCA	PC	PC SOFTWARE LAB	0	0	4	2
MATH0112	G		MATHEMATICS	4	0	0	4
ECEN0103	G		INTRODUCTION TO DIGITAL ELECTRONICS	4	0	0	4
MGMT0101	M		MANAGEMENT & PROFESSIONAL LEADERSHIP	3	0	0	3
			TOTAL CREDITS	**22**	**1**	**8**	**26.5**

L = Lecture

T = Tutorial

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C = Credit Point

SEMESTER – II

MODULE CODE	CATEGORY	SUB-CATEGORY	MODULE	L	T	P	C
COAP1106	BCA		INTRODUCTION TO WEB TECHNOLOGIES	4	0	0	4
COAP1107	BCA		WEB TECHNOLOGIES LAB	0	0	4	2
COAP1108	BCA		OBJECT ORIENTED LANGUAGE USING C++	4	0	0	4
COAP1109	BCA		C++ LAB	0	0	4	2
COAP1110	BCA		DATABASE MANAGEMENT SYSTEM	4	0	0	4
COAP1111	BCA		DATABASE MANAGEMENT SYSTEM LAB	0	0	4	2
COAP1112	BCA		COMPUTER ARCHITECTURE	4	0	0	4
	BCA		ELECTIVE-I*	3	1	0	3.5
VALU0115	P		PROFESSIONAL COMMUNICATION-I	0	0	2	1
			TOTAL CREDITS	**19**	**1**	**14**	**26.5**

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ELECTIVES

MODULE CODE	ELECTIVE-I*
COAP1213	MATHEMATICAL FOUNDATION OF COMPUTER
COAP1214	SYSTEM PROGRAMMING
COAP1215	SYSTEM ANALYSIS AND DESIGN

PROGRAM SCHEME

SEMESTER - III

MODULE CODE	CATEGORY	SUB-CATEGORY	MODULE	L	T	P	C
COAP2101	BCA	PC	DATA STRUCTURE USING C++	4	0	0	4
COAP2102	BCA	PC	DATA STRUCTURE USING C++ LAB	0	0	4	2
COAP2103	BCA	PC	OPERATING SYSTEM	3	1	0	3.5
COAP2104	BCA	PC	JAVA	4	0	0	4
COAP2105	BCA	PC	JAVA LAB	0	0	4	2
	BCA	PE	ELECTIVE-II*	3	1	0	3.5
COAP2109	BCA	PD	INDUSTRIAL TRAINING I (TRAINING TO BE UNDERGONE AFTER II SEMESTER)	0	0	1	1
COAP2110	BCA	PD	SPECIALIZED MINOR PROJECT (GROUP)	0	0	4	2
	G		FOREIGN LANGUAGE PART-I#	2	0	0	2
VALU0119	P	AE	APTITUDE I	2	0	0	2
	P	AE	YOGA/NCC/NSS*	0	0	2	1
TOTAL CREDITS				18	2	15	27

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ELECTIVES

MODULE CODE	ELECTIVE-II**
COAP2206	OBJECT ORIENTED ANALYSIS AND DESIGN
COAP2207	MULTIMEDIA TECHNOLOGIES
COAP2208	MOBILE COMPUTING

FOREIGN LANGUAGE

One foreign language out of the following

MODULE CODE	MODULE NAME
LANF0107	FRENCH
LANG0108	GERMAN
LANS0109	SPANISH

MODULE CODE	MODULE*
VALU0118	YOGA
VALU0121	NCC
VALU0122	NSS

SEMESTER - IV

MODULE CODE	CATEGORY	SUB-CATEGORY	MODULE	L	T	P	C
COAP2111	BCA	PC	SOFTWARE ENGINEERING	3	1	0	3.5
COAP2112	BCA	PC	VB.NET	4	0	0	4
COAP2113	BCA	PC	VB.NET LAB	0	0	4	2
COAP2114	BCA	PC	UNIX AND SHELL PROGRAMMING	4	0	0	4
COAP2115	BCA	PC	UNIX AND SHELL PROGRAMMING LAB	0	0	4	2
	BCA	PE	ELECTIVE-III***	3	1	0	3.5
COAP2119	BCA	PD	SPECIALIZED MINOR PROJECT (INDIVIDUAL)	0	0	4	2
	BCA	GE	ELECTIVE - A	4	0	0	4
	G		FOREIGN LANGUAGE PART-II#	2	0	0	2
VALU0123	P	SE	PROFESSIONAL COMMUNICATION-II	0	0	2	1
ENGL0109	P	AE	ACADEMIC WRITING	0	0	2	1
TOTAL CREDITS				**20**	**2**	**16**	**29**

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ELECTIVES

MODULE CODE	ELECTIVE-III**
COAP2216	DATA COMMUNICATION AND NETWORKING
COAP2217	ADVANCED SYSTEM ADMINISTRATION
COAP2218	DATAWAREHOUSE AND MINING

MODULE CODE	GENERIC ELECTIVES-A℗
SAPM0321	SAP (ABAP)
SAPS0322	SAP (MM)
SAPF0323	SAP (SD)
	ONE/TWO MOOCS MODULES(Consisting 4 credits in total)

Additional fee, if any, shall be borne by the student.

FOREIGN LANGUAGE

One foreign language out of the following

MODULE CODE	MODULE NAME
LANF0110	FRENCH
LANG0111	GERMAN
LANS0112	SPANISH

SEMESTER V

MODULE CODE	CATEGORY	SUB-CATEGORY	MODULE	L	T	P	C
COAP3101	BCA	PC	ARTIFICAL INTELLIGENCE	4	0	0	4
COAP3102	BCA	PC	PROLOG LAB	0	0	4	2
COAP3103	BCA	PC	SOFTWARE TESTING	3	1	0	3.5
	BCA	PE	ELECTIVE-IV*	4	0	0	4
	BCA	PE	ELECTIVE-IV LAB**	0	0	4	2
	BCA	PE	ELECTIVE-V***	3	1	0	3.5
COAP3113	BCA	PD	SPECIALIZED MAJOR PROJECT (GROUP) ##	0	0	4	2
COAP3114			INDUSTRIAL TRAINING II Training to be undergone after IV semester)	0	0	2	1
	BCA	GE	ELECTIVE-B ****	4	0	0	4
	P	CI	CREATIVITY AND INNOVATION/ ACADEMIC WRITING#	0	0	0	1
CLUB0101	P	CA	CO-CURRICULAR ACTIVITY	0	0	0	1
VALU0136	P	AE	APTITUDE II	2	0	0	2
TOTAL CREDIT				**20**	**2**	**14**	**30**

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ELECTIVES

MODULE CODE	ELECTIVES - IV*
COAP3204	COMUTER GRAPHICS
COAP3205	WINDOWS PROGRAMMING
COAP3206	PROGRAMMING WITH PYTHON
MODULE CODE	**ELECTIVE - IV****
COAP3207	COMUTER GRAPHICS LAB
COAP3208	WINDOWS PROGRAMMING LAB
COAP3209	PROGRAMMING WITH PYTHON LAB
MODULE CODE	**ELECTIVE - V*****
COAP3210	MANAGEMENT INFORMATION SYSTEM
COAP3211	E-COMMERCE AND IT MANAGEMENT
COAP3212	SOFT COMPUTING
MODULE CODE	**MODULE#**
COAP3215	CREATIVITY AND INNOVATION
ENGL0110	ACADEMIC WRITING

**** To be chosen from Generic Electives offered by departments other than the parent Department.

Only advisory support shall be provided by the faculty.

SEMESTER VI

MODULE CODE	CATEGORY	SUB-CATEGORY	MODULE	L	T	P	C
COAP3116	BCA	PC	CLOUD COMPUTING	4	0	0	4
COAP3117	BCA	PC	.NET TECHNOLOGIES	4	0	0	4
COAP3118	BCA	PC	.NET LAB	0	0	4	2
COAP3119	BCA	PD	SPECIALIZED MAJOR PROJECT (INDIVIDUAL)##	0	0	8	4
ENVS0101	P	AE	ENVIRONMENTAL SCIENCES	2	0	0	2
MGMT0103	M		ENTREPRENEURSHIP	4	0	0	4
TOTAL CREDIT				**14**	**0**	**12**	**20**

L = Lecture

T = Tutorial

P = Practical

C = Credit Point