



# VIVEKANANDHA

COLLEGE OF ARTS AND SCIENCES FOR WOMEN  
(Autonomous)

[AN ISO 9001 : 2015 CERTIFIED INSTITUTIONS]

Affiliated to Periyar University, Approved by AICTE &  
Re-Accredited with 'A+' Grade by NAAC,  
Recognized under section 2(f) & 12(B) of UGC Act, 1956)  
ELAYAMPALAYAM, TIRUCHENGODE (Tk.), NAMAKKAL (Dt.)



## PG & RESEARCH DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

# BCA

**(Bachelor of Computer Applications)**

**FOR CANDIDATES ADMITTED FROM 2023 – 2024  
ONWARDS UNDER AUTONOMOUS – CBCS & OBE PATTERN**

**Date: 05-06-2023**

**University Nominee**

**Subject Expert**

**Board Chairman**

**VIVEKANANDHA EDUCATIONAL INSTITUTIONS**

Elayampalayam, Tiruchengode (Tk), Namakkal (Dt),

**VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN  
(AUTONOMOUS)****BCA (BACHALOR COMPUTER APPLICATIONS)  
(Candidates admitted from 2023-2024 onwards)****REGULATIONS****I. SCOPE OF THE PROGRAMME**

The IT boom and the rapid growth in science and technology have opened up new vistas of job opportunities. The college offers Bachelor of Computer Applications which seeks to equip the learners to meet the spiraling demand of the IT industry. It provides special training in computer application of software's. The syllabus has been designed at a level equal to that of professional courses. Focus is also on developing soft skills of the students.

**II. SALIENT FEATURES**

- ❖ Qualified and Experienced team of faculty members with varied experience in areas of Computer Architecture, Artificial Intelligence, Mobile and Computer Networks, Graphics and Image Processing and Database Management System
- ❖ Motivating of students enhanced with immense expertise, massive technical exposure & structured creative initiatives.
- ❖ Industrial visits to various renowned companies are arranged to give an exposure to the students
- ❖ Students are taught by using Audio Visual aids like OHP's & LCD Projectors and modern E-learning
- ❖ Course is specially designed for a higher level Career Placement
- ❖ Project work is included in the syllabus to enhance conceptual, analytical & deductive skills

**III. OBJECTIVES OF THE PROGRAMME**

- ❖ To produce a highly qualified professionals impart of both theoretical and practical knowledge in computer systems and its application.
- ❖ To produce fully skilled and trained manpower capable of solving the software & hardware problems, and discovering software solutions related to business organizations.
- ❖ To provide an in-depth knowledge of specific sub-disciplines chosen by the students as areas of special interest in the form of elective courses.
- ❖ The BCA Program is aimed at providing a platform to the students to enhance their skills in various fields of Computer Science & Information Technology like Hardware, Software development, Networking, Database Management & IT enabled services and to facilitate students to interact with IT professionals, Industry Partners & Academicians from IT and related areas.
- ❖ The courses is designed to develop computer professionals versatile is use of computers in almost all field of computer application. The main emphasis of the course is an applied computer use in various fields.

**IV. ELIGIBILITY FOR ADMISSION**

A candidate who has passed in Higher Secondary Examination with Mathematics or Business Mathematics or Computer Science or Computer Application or Statistics (Academic stream or Vocational stream) as one of the subject under Higher Secondary Board of Examination, Tamil Nadu as per norms set by the Government of Tamil Nadu or an Examination accepted as equivalent thereto by the syndicate, subject to such conditions as may be prescribed there to are permitted to appear and qualify for the Bachelor of Computer Application degree examination after a course of study of three academic years.

**V. DURATION OF THE PROGRAMME**

- ❖ The course shall extend over a period of three academic years consisting of six semesters. Each academic year will be divided into two semesters. The First semester will consist of the period from July to November and the Second semester from December to March.
- ❖ The subjects of the study shall be in accordance with the syllabus prescribed from time to time by the Board of Studies of Vivekanandha College of Arts and Sciences for Women with the approval of Periyar University, Salem.
- ❖ Each subject will have four to six hours of lecture per week apart from practical training at the end of each semester.

**VI. CONTINUOUS INTERNAL ASSESSMENT (CIA)**

The performance of the students will be assessed continuously and the Internal

**ASSESSMENT MARKS FOR THEORY PAPERS WILL BE AS UNDER:**

1	CIA Test I & II (2.5 from each Test)	-	05
2	Model Exam	-	10
3	Assignment	-	05
4	Attendance	-	05
		Total	25

**ASSESSMENT MARKS FOR PRACTICAL PAPERS WILL BE AS UNDER:**

1	Model Exam	-	20
2	Observation Note	-	10
3	Attendance	-	10
		Total	40

**PASSING MINIMUM - EXTERNAL**

<b>THEORY</b>	In the End Semester Examinations, the passing minimum shall be 40% out of 75 Marks. (30 Marks)
<b>PRACTICAL / MINI PROJECT</b>	In the End Semester Examinations, the passing minimum shall be 40% out of 60 Marks. (24 Marks)

## **VII. ELIGIBILITY FOR EXAMINATION**

A candidate will be permitted to appear for the University Examination only on learning 75% of attendance and only when her conduct has been satisfactory. It shall be open to grant exemption to a candidate for valid reasons subject to conditions prescribed.

### **DISTRIBUTION OF MARKS FOR ATTENDANCE**

<b>ATTENDANCE PERCENTAGE</b>	<b>MARKS</b>	
	<b>THEORY</b>	<b>PRACTICAL</b>
75-80	1	2
81-85	2	4
86-90	3	6
91-95	4	8
96-100	5	10

## **VIII. CLASSIFICATION OF SUCCESSFUL CANDIDATES**

Successful candidates passing the Examination of Core Courses (Main & Allied Subjects) & Securing Marks.

- a) 75 % and above shall be declared to have passed the examination in First Class with Distinction provided they pass all the examinations prescribed for the course at first appearance itself.
- b) 60% and above but below 75 % shall be declared to have passed the Examinations in First Class.
- c) 50% & above but below 60% shall be declared to have passed the examinations in Second Class.
- d) All the remaining successful candidates shall be declared to have passed the examinations in Third Class.
- e) Candidates who pass all the examinations prescribed for the course at the First appearance itself and within a period of Three Consecutive Academic years from the year of admission only will be eligible for University Rank.

## **IX. ELIGIBILITY FOR AWARD OF THE DEGREE**

A candidate shall be eligible for the award of the Degree only if she has undergone the above Degree for a period of not less than Three Academic years comprising of six semesters and passed the Examinations prescribed and fulfilled such conditions has have been prescribed therefore.

## **X. PROCEDURE IN THE EVENT OF FAILURE**

If a candidate fails in a particular subject, she may reappear for the university examination in the concerned subject in subsequent semesters and shall pass the examination.

## **XI. COMMENCEMENT OF THESE REGULATIONS**

These regulations shall take effect from the academic year 2023-24 (i.e.,) for the

students who are to be admitted to the First year of the course during the Academic year 2023-24 and thereafter.

## **XII. TRANSITORY PROVISIONS**

Candidates who were admitted to the UG course of study before 2021-2022 shall be permitted to appear for the examinations under those regulations for the period of Three years ie., upto and inclusive of the Examinations of 2023-2024. Thereafter, they will be permitted to appear for the examinations only under the regulations then in force.

### **EVALUATION OF EXTERNAL EXAMINATIONS (EE)**

<b><u>QUESTION PAPER PATTERN – THEORY</u></b>	
<b>Time duration: 3 Hours</b>	
<b>Max. Marks: 75</b>	
<b>PART- A:</b> <b>(10 x 1= 10)</b>	Answer all the Questions Two Questions from each Unit
<b>PART- B:</b> <b>(5 x 7 = 35)</b>	Answer all the questions One Question from each Unit (Either or Type)
<b>PART- C:</b> <b>(3 x 10 = 30)</b>	Answer any <b>THREE</b> of the questions One Question from each Unit (3 Out of 5)
<b>IN THE END SEMESTER EXAMINATIONS, THE PASSING MINIMUM SHALL BE 40% OUT OF 75 MARKS. (30 MARKS)</b>	

<b><u>QUESTION PAPER PATTERN – PRACTICAL</u></b>	
<b>Time duration: 3 Hours</b>	
<b>Max. Marks: 60</b>	
1. One compulsory question from the given list of objectives	<b>30 Marks</b>
2. One either/or type question from the given list of objectives	<b>30 Marks</b>
<b>IN THE END SEMESTER EXAMINATIONS, THE PASSING MINIMUM SHALL BE 40% OUT OF 60 MARKS. (24 MARKS)</b>	

**BCA (COMPUTER APPLICATIONS) CURRICULUM FOR ACADEMIC YEAR 2023 – 2024****COURSE PATTERN AND SCHEME OF EXAMINATIONS UNDER  
AUTONOMOUS, OBE PATTERN****FOR THE CANDIDATES ADMITTED FROM THE YEAR 2023 – 2024****SEMESTER: I & II**

SEM	PART	COURSECODE	COURSE TITLE	Hrs	CREDIT	MARKS		
						CIA	EE	TOT
I	I	23U1LT01/ 23U1LH01	Language Tamil-I/ Hindi-I	6	3	25	75	100
	II	23U1LE01	English-I	4	3	25	75	100
	III	23U1CAC01	Core Course I – Object Oriented Programming Concepts Using C++	5	3	25	75	100
	III	23U1CACP01	Core Course II – Practical : C++ Programming	4	3	40	60	100
	III	23U1CADE01 23U1CADE02 23U1CADE03	Elective – Discipline Specific Elective- I [Any One] a) Multimedia Systems b) Biometrics c) E-Commerce	4	3	25	75	100
	III	23U1IMAGE02	Allied – Discipline Non-Specific Elective- I [Any One] a) Allied Mathematics-I b) <b>Statistical Methods and their Applications-I</b> c) Financial Accounting	3	3	25	75	100
	IV	23U1VE01	Health, Human Values and Yoga	2	2	25	75	100
	IV	23U1ENAC01	Ability Enhancement Compulsory Course (AECC) Soft Skill – 1: Soft Skills For Effective Communication	2	2	25	75	100
	<b>Total</b>				<b>30</b>	<b>22</b>	<b>215</b>	<b>585</b>
	I	23U2LT02 / 23U2LH02	Language Tamil-II/Hindi-II	6	3	25	75	100
	II	23U2LE02	English-II	4	3	25	75	100
	III	23U2CAC02	Core Course III – Python Programming	5	3	25	75	100
	III	23U2CACP02	Core Course IV – Practical : Python Programming	4	3	40	60	100

III	23U2CADE04 23U2CADE05 23U2CADE06	Elective – Discipline Specific Elective – II [Any One] a) Cyber Forensics b) Information Security c) Human Computer Interaction	4	3	25	75	100
III	23U2MAGE09	Allied – Discipline Non-Specific Elective- I [Any One] a) Allied Mathematics-II <b>b) Statistical Methods and their Applications-II</b> c) Cost and Management Accounting	3	3	25	75	100
IV	23U2ES01	Environmental Studies	2	2	25	75	100
IV	23U2CSAC02	Ability Enhancement Compulsory Course (AECC) Soft Skill – 2: Office Automation	2	2	25	75	100
<b>Total</b>			<b>30</b>	<b>22</b>	<b>215</b>	<b>585</b>	<b>800</b>

**SEMESTER: III & IV**

SEM	Part	Course Code	COURSE TITLE	Hrs	CREDIT	MARKS		
						CIA	EE	TOT
III	III	23U3LT03	Language Tamil/ Hindi	6	3	25	75	100
	III	23U3LE03	English	4	3	25	75	100
	III	23U3CAC03	Core Course V – Data Structures and Algorithms	5	3	25	75	100
	III	23U3CACP03	Core Course VI – Practical : Data Structures and Algorithms	4	3	40	60	100
	III	23U3CADE07 23U3CADE08 23U3CADE09	Elective- Discipline Specific Elective – III [Any One] a) Fuzzy Logic b) ERP c) Artificial Intelligence	4	3	25	75	100
	III		Allied – Discipline Non-Specific Elective- I [Any One] a) Allied Mathematics-I b) Statistical Methods and its Application-I c) Financial Accounting	3	3	25	75	100
	IV		Skill Enhancement Course SEC – 3 (NME) [ Any One] a) b)	2	2	25	75	100
	IV		Ability Enhancement Compulsory Course (AECC) Soft Skill – 3	2	2	25	75	100
	<b>Total</b>				<b>30</b>	<b>22</b>	<b>215</b>	<b>585</b>
IV	III	23U4LT04	Language Tamil/Hindi	6	3	25	75	100
	III	23U4LE04	English	4	3	25	75	100
	III	23U4CAC04	Core Course VII – .Net Programming	5	3	25	75	100
	III	23U4CACP04	Core Course VIII – Practical: . Net Programming	4	3	40	60	100
	III	23U4CADE10 23U4CADE11 23U4CADE12	Elective- Discipline Specific Elective – IV [Any One] a)Software Testing b) Image Processing c) Big data Analytics	4	3	25	75	100
	III		Allied – Discipline Non-Specific Elective- I [Any One] a) Allied Mathematics-II	3	3	25	75	100



		b) Statistical Methods and its Application-II c) Cost and Management Accounting					
IV		Skill Enhancement Course SEC – 4 (NME) [ Any One] a) b)	2	2	25	75	100
IV		Ability Enhancement Compulsory Course (AECC) Soft Skill – 4	2	2	25	75	100
<b>Total</b>			<b>30</b>	<b>22</b>	<b>215</b>	<b>585</b>	<b>800</b>

**SEMESTER: V & VI**

SEM	Part	COURSE CODE	COURSE TITLE	Hrs	CREDIT	MARKS		
						CIA	EE	TOT
V	III	23U5CAC05	Core Course IX – Operating System	5	4	25	75	100
	III	23U5CAC06	Core Course X – Java Programming	5	4	25	75	100
	III	23U5CAC07	Core Course XI – Database Management System	5	4	25	75	100
	III	23U5CACP05	Core Course XII – Practical : Java Programming	5	4	40	60	100
	III	23U5CADE13 23U5CADE14 23U5CADE15 23U5CADE16	Elective- Discipline Specific Elective – V [Any One] a) Artificial Neural Network b) Pattern Recognition c) Introduction to Data Science D) Operation Research	4	3	25	75	100
	III	23U5CADE17 23U5CADE18 23U5CADE19	Elective- Discipline Specific Elective – VI [Any One] a)Cloud computing b)Agile Project Management c)Simulation and Modeling	4	3	25	75	100
	IV	23U5VE01	Value Education	2	2	25	75	100
Total				<b>30</b>	<b>24</b>	<b>190</b>	<b>510</b>	<b>700</b>
VI	III	23U6CAC08	Core Course XII – R Programming	5	4	25	75	100
	III	23U6CAC09	Core Course XIV – Open Source Software Technologies / Computer Networks / Mini Project	5	4	25	75	100
	III	23U6CACP06	Core Course XV- Practical : R Programming	5	4	25	75	100
	III	23U6CACP07	Core Course XVI – Practical: Open Source Software Technologies / Internet of Things / Big Data analytics	5	4	40	60	100
	III	23U6CADE20 23U6CADE21 23U6CADE22	Elective- Discipline Specific Elective – VII [Any One] a)Data Mining and Warehousing b)Network Security c)Robotics	4	3	40	60	100
	III		Elective- Discipline Specific Elective – VIII [Any One]	4	3	40	60	100

	23U6CADE23 23U6CADE24 23U6CADE25	a)Mobile Adhoc Network b)Computational Intelligence c)Grid Computing					
IV		Extension Activity		1	25	75	100
V		Professional Competency Skill [Competitive Examinations]	2	1	-	-	-
<b>Total</b>			<b>30</b>	<b>24</b>	<b>190</b>	<b>510</b>	<b>700</b>
<b>Grand Total</b>			<b>180</b>	<b>136</b>	<b>1240</b>	<b>3360</b>	<b>4600</b>

**DEPARTMENT OF COMPUTER APPLICATIONS  
(BCA)**

**VISION OF THE DEPARTMENT**

To provide high academic goals to the students and make them the world leaders both in educational and research through effective teaching.

**MISSION OF THE DEPARTMENT**

- ❖ To create, share and apply knowledge in Computer Science including inter disciplinary areas that extends the scope of Computer Science and benefit humanity.
- ❖ To educate students to be successful, ethical and effective problem solvers.
- ❖ To prepare the students to contribute positively to the economic well being of our region and nation.

**PROGRAMME OUTCOMES**

**K1 : REMEMBER**

**K3 : APPLY**

**K5 : EVALUATE**

**K2 : UNDERSTAND**

**K4 : ANALYZE**

**K6 : CREATE**

**PROGRAMME OUTCOMES**

<b><u>PROGRAMME OUTCOMES</u></b>		
The graduate will		
POs	Descriptions	Knowledge level
PO 01	Computer Applications graduates to work effectively both as an individual and a team leader on multi disciplinary projects.	K1
PO 02	Computer Applications Graduates follow ethical principles and norm in developing applications.	K1
PO 03	Inculcates the ability to analyze, identify, formulate and develop computer applications using modern computing tools and techniques.	K2
PO 04	Computer Applications Graduates apply the knowledge of mathematical fundamentals in the field of Computer Application developments.	K2
PO 05	Improves communication skills so that they can effectively present technical information in oral and written reports	K3
PO 06	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practices.	K3
PO 07	Apply ethical principles and commit to professional ethics and responsibilities.	K3

## **PROGRAMME SPECIFIC OUTCOMES**

### **BCA (COMPUTER APPLICATIONS)**

**AFTER COMPLETION OF THE PROGRAMME THE GRADUATES WILL BE ABLE TO**

<b><u>PROGRAM SPECIFIC OUTCOME (PSO)</u></b>		
The graduate will		
<b>PSOs</b>	<b>DESCRIPTIONS</b>	<b>Knowledge Level</b>
PSO 01	Students have a clear understanding of the concepts of key areas in Computer Applications.	K1
PSO 02	Students are capable to analyze and apply latest technologies to solve problems in the areas of Computer Applications.	K3
PSO 03	It makes them to analyze and synthesis computing systems through quantitative and qualitative techniques.	K4

### **PROGRAM EDUCATIONAL OBJECTIVES (PEOS)**

The graduate will

<b>PEOs</b>	<b>DESCRIPTIONS</b>	<b>Knowledge level</b>
PEO 01	Befall an entrepreneur who can afford resolutions & extend software harvest for activity needs.	K3
PEO 02	Engross in life-long learning to acclimatize the technical encroachments in the budding vicinities of Computer Applications.	K4
PEO 03	To provide students with an academic situation that fosters Excellence, intelligibility, and headship and Promote restiveness of life-long learning.	K5
PEO 04	Evolve as globally skilled Computer professionals possessing control dexterity for developing novel solutions in multidisciplinary domains.	K5