Periyar Maniammai Institute of Science and Technology (PMIST)

PERIYAR
MANIAMMAI
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University)
Established Under Sec. 3 of UGC Act, 1956 • NAAC Accredited
think • innovate • transform

BCA Regulations 2020

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1. University Vision and Mission

Vision

To be a University of global dynamism with excellence in knowledge and innovation ensuring social responsibility for creating an egalitarian society.

Mission

UM1: Offering well balanced programmes with scholarly faculty and state-of-art facilities to impart high level of knowledge.

UM2: Providing student - centered education and foster their growth in critical thinking, creativity, entrepreneurship, problem solving and collaborative work.

UM3: Involving progressive and meaningful research with concern for sustainable development.

UM4: Enabling the students to acquire the skills for global competencies.

UM5: Inculcating Universal values, Self respect, Gender equality, Dignity and Ethics.

2. Department Vision and Mission

The BCA Curriculum is based on Outcome Based Education and it was implemented in the Regulations 2015-16. Outcome Based Education (OBE) is an education theory and methodology focuses the outcome or goal that every student should achieve it. Every student could have informed at the beginning about the goal to be accomplished, which is the outcome of each course. The teaching and learning methods, assessment & evaluation in OBE helps the students to achieve the specified goal.

Vision:

To be a leading, contemporary, innovative Computer Science and Applications department in inculcating professional competencies in the field of Computing and related interdisciplinary technologies to achieve academic excellence and to facilitate research activities as a timely response to dynamic needs and challenges of industry and society**.**

Mission:

DM1: Imparting quality education in the field of Computing Sciences and Applications and generate successful computing professional

DM2: Encouraging students to collaborate with industry environment and analyze the real world problems culminating in efficient solutions.

DM3: Transforming students into computing professionals and entrepreneurs by imparting quality training and hands on experience with latest tools and technologies.

DM4: Promoting activities in creating applications in emerging areas of computing technologies and applications in order to serve the needs of research, industry, society and scientific community.

DM5: Inculcating value based and ethical commitment for bringing out successful professionals.

Mapping of University Vision and Department Mission

	DM1	DM2	DM3	DM4	DM5	**Total**
UM1	3	1	1	1	1	**7**
UM2	1	2	3	2	0	**8**
UM3	0	1	2	3	2	**8**
UM4	1	1	3	3	0	**8**
UM5	1	1	0	1	3	**6**

0-No relation 3- Highly relation 2- Medium relation 1– Low relation

3. Programme Educational Objectives (PEO)

PEO1	The graduate will apply fundamental concepts of mathematics and computing technologies in the emerging application areas.
PEO2	The graduate will be able to understand the requirement of computing problem and implement an effective solution.
PEO3	The graduate will be able to practice professional ethics, management and team communication in the industrial and societal environment.
PEO4	The graduate will equip themselves to pursue higher studies, entrepreneurship, and apply new ideas and technologies in the evolving field

Mapping of Mission (MS) with Program Educational Objectives (PEOs)

	DM1	**DM2**	**DM3**	**DM4**	**DM5**
PEO1	3	2	2	1	0
PEO2	2	3	2	2	1
PEO3	2	2	3	1	3
PEO4	2	1	3	2	1
Total	**9**	**8**	**10**	**6**	**5**

0-No relation 3- Highly relation 2- Medium relation 1– Low relation

.

4. Graduates Attributes

1. Disciplinary Knowledge
2. Problem analysis
3. Design/Development of solutions
4. Modern tool usage
5. Environment and Sustainability
6. Ethics and Social Responsibility
7. Effective Communication
8. Individual and Team Work
9. Life-long learning

5. Programme Outcome (PO) and Programme Specific Outcomes (PSO)

PO1	To apply fundamental knowledge of mathematics and Principles of Computing techniques to solve the problems in computer science and application areas.
PO2	To analyze a computing requirement and apply programming principles for providing effective solutions.
PO3	To design an innovative interface method to bring the complete requirement and visualize the result for decision making.
PO4	To investigate and apply modern tools and technologies in the construction of software system.
PO5	To practice team communication, effective management and Interpersonal skill for the successful computing professional and entrepreneur.
PO6	To apply contextual knowledge of professional, ethical, legal, and security to assess societal, health, legal and cultural issues.
PO7	To extend enthusiasm for self-improvement through continuous professional development and life-long learning.

Programme Specific Outcome (PSO)

PSO1	Maintaining the system, applications, Software and network components in a computing environment
PSO2	Developing dynamic website and web enabled applications.

Mapping of Program Outcomes (POs) with Graduate Attributes (GAs)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	**Total**
GA1	3	1	0	0	0	0	0	2	1	**7**
GA2	0	3	1	0	0	0	0	3	2	**9**
GA3	0	0	3	0	0	0	0	2	2	**7**
GA4	1	1	0	3	0	0	0	2	2	**9**
GA5	0	0	1	0	0	0	0	1	1	**3**
GA6	0	2	0	0	0	2	0	0	0	**4**
GA7	0	1	0	0	2	0	0	2	2	**7**
GA8	0	1	1	0	3	0	0	2	2	**9**
GA9	1	0	0	1	0	0	3	2	2	**9**

0-No relation 3- Highly relation 2- Medium relation 1– Low relation

Mapping of Program Educational Objectives (PEOs) with Program Outcomes (POs)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PSO1**	**PSO2**	Total
PEO 1	3	2	1	1	0	0	1	2	2	12
PEO 2	1	2	1	1	0	0	1	2	2	10
PEO 3	0	0	0	0	1	3	1	1	2	08
PEO 4	0	0	1	1	2	0	2	2	2	10
Total	4	4	3	3	3	3	5	7	8	

0-No relation 3- Highly relation 2- Medium relation 1– Low relation

6. ADMISSION AND ELIGIBILITY

i. For 1st year:

a) A pass in the +2 level examination in the 10+2 pattern of examination with Mathematics or Commerce with Business Mathematics/Computer science or Computer Science or Statistics (Academic stream or Vocational stream) as one of the subject under Higher Secondary Board of Examination, Tamilnadu as per norms set by the Government of Tamilnadu or an Examination equivalent to any recognized central / state board of secondary school examination such as Central Board of Secondary Education (CBSE), New Delhi and Council for Indian School Certificate Examination, New Delhi.

b) Intermediate or two-year Pre – University Examination conducted by a recognized Board / University or

c) Final Examination of the two year course of the Joint Services wing of the National Defense Academy or

d) Any Public School / Board or University Examination in India recognized as equivalent to 10 +2 system or

e) H.S.C. Vocational Examination with compulsory Mathematics as one of the subject or

f) A pass grade in the Senior Secondary School Examinations conducted by the National Open School with a minimum of five subjects or

g) 3 or 4 year Diploma recognized by AICTE or a State Board of Technical Education or

h) Association of Indian Universities (AIU) equivalence certificate for international aspirants or

i) Any other equivalent qualification

ii. Transfer from other University

A candidate can join from any other Universities in the beginning of any semester subject to the recommendations of Equivalence Committee and approval of Competent Authority of the University. There should not be any standing arrears.

7. DURATION OF THE COURSE

The duration of B. C. A. Course will be three years, divided into six semesters. The duration of each semester will be 90 teaching days. The maximum number of years to complete the course is 5 years.

8. DEFINITIONS

Programme refers to B. C. A., Course refers to a Subject in the programme.

9. PRE-REQUISITE

Where a prerequisite is specified for a course, the student should have taken the pre-requisite course.

10. MEDIUM OF INSTRUCTION

Medium of instruction is English.

11. CREDIT SYSTEM

1 Credit = 1 Lecture hour/2 tutorial hour/2 lab hour

12. PROGRAMME STRUCTURE

B. C. A. programme should have minimum of 120 credits and maximum of 140 credits. The programme structure has 124 credits which consisting of Ability Enhancement Compulsory Course (6 credits), Department Specific Course (64 Credits), Discipline specific Elective (31 Credits), Skill Enhancement Course (8 Credits), Generic Elective (9 Credits), In Plant Training (2 Credits), Languages(3 Credits) and NSS/NCC/SPORTS/RRC/YRC(1 Credit) and Minor Courses/Value Added courses. Participation in any one of the NSS/NCC/NSO/YRC of the University during their study is mandatory.

Minor programmes

The Department offers at least three minor courses in our curriculum (offers III, IV and V) one credit each for improving the employability skills of the students.

The need for the course and possible collaborations with Centre of Excellence/ Industry has to be analyzed by the Department/School before proposing the courses.

The collaboration with Centre of excellence/ Industry will be finalized in consultation with Director (CUII).

The credits earned through these courses will not be taken for CGPA or total credit required for completing a programme. However, a student has to pass all the courses for award of degree

Local Visit(LV)/Industrial Visit(IV)

One Local Visit(LV) and one Industrial Visit(IV) will have to be given during the programme.

13. CHOICE BASED CREDIT SYSTEM

Choice based credit system is incorporated in the regulation. The system includes core subjects, Ability Enhancement Compulsory Courses, Skill Enhancement courses, Department Specific Elective, Discipline Specific Courses, University Mandatory courses and Generic electives (Open electives). By the generic elective concept the student can move horizontally between different branches to some extent. Registering for fewer subjects than prescribed in the curriculum is not allowed.

14. EXAMINATION AND ASSESSMENT

a. Theory

S.No.	Task	Marks	Weightage	Weightage Formative	Weightage Summative
1	CA 1(Class Test- 1)	50	15	50	
2	CA 2(Class Test- 2)	50	15		
3	CA3	20	20		
4	CA 4- End Semester	100	50		50
Total		**220**	**100**	**50**	**50**

b. Theory cum Lab

S.No.			Task	Marks	Weightage in %	Weightage Formative	Weightage Summative
			Internal Assessment				
1	**Formative**	**Theory Part**	CA 1 (Class Test1)	15	11.25	37.5	
2			CA 2 (Class Test2)	15	11.25		
3			CA3 (Minimum 5 and maximum of 8 Assessment tools given by the course teacher)	20	15		
4		**Lab Part**	CIA -1 (Based on observation Note and rubrics designed by lab teacher)	15	3.75	12.5	
5			CIA-2 (Mid Exam)	15	3.75		
6			CIA -3 Product/Simulation /Design/Programme /Process	20	5		
			External Assessment				
7	**Summative**	**Theory part**	CA 4- End Semester Pattern (MCQ – 10% + Descriptive - 90%)	50	37.5		37.5
8		**Lab Part**	CA4- End semester exam	50	12.5		12.5
			Total	200	100(A) A = B + C	50 (B)	50(C)

c. Skill Enhancement Course

		Weightage	Weightage Formative	Weightage Summative
1.	CA –T 1 (Formative)	15%	60	40
2.	CA - T 2 (Formative)	15%		
3.	CA- L 2(Based on observation Note and rubrics designed by lab teacher)	15%		
4.	CA – L 1(Lab Mid Exam) - (Formative)	15%		
5.	EA -T 3 (Summative)	20%		
6.	EA – L 3 End Semester Exam	20%		
	Total		**60**	**40**

d. Project

Review 0	Review I	Review II	Review III	Total
15th day	After 40th day	After 60th day	After 90 day	
0	30 %	30 %	40 %	100 %

Attendance Requirements

End Semester Examinations

The minimum attendance required for appearing in the formative assessment CA1 and CA2 is 65%.

Maximum of five marks is allotted for attendance as one of the component in CA3 Percentage of Attendance.

Percentage of Attendance	76-81	82-87	88-93	94-99	100
Marks	1	2	3	4	5

The minimum percentage of attendance required to appear for the end semester examinations is 75% (course wise).

If the percentage of attendance is between 65% and below 75% for the individual courses due to medical reasons; then the student is eligible to apply for condonation with a prescribed fee of Rs. 300/ per course and also to produce a medical certificate from a registered medical practitioner not below the rank of a Civil Assistant Surgeon.

If the percentage of attendance is less than 75% and above 65% (overall attendance), she /he has to appear for the exam as supplementary after gaining the required attendance.

If the percentage of attendance is less than 65% (all courses put together) then the student will be categorized under “Redo candidate”.

For calculating the percentage of attendance; following norms are framed:

- For CA1 – From the reopening date to the day before CA1 examination
- For CA2 – From staring date of CA1 – the day before the CA2 examination

- For End semester – From starting date to last working day.

If a student falls under Redo category, while rejoining he/she has to again pay the prescribed semester fees along with re-registration fees (Rs.500/-).

Special Exams: Participation on behalf of University in curriculum / Sports Event or related work or any other activity as recommended by the HOD/Authorities. This is applicable for all exams.

The following letter grade will appear in the mark sheet for every course for the attendance gained in that course.

Performance	**Letter Grade**	**% of Attendance**
Outstanding	**O**	>=95%
Medium	**M**	>=85% and <95%
Satisfactory	**S**	>=75% and <85%

15. MINIMUM MARKS FOR PASSING AND GRADE VERSUS MARKS

There is no passing minimum for FA. However, a student must secure:

1. Minimum 35% in SA (includes Theory cum Lab) and 40% in total (overall) for all UG Arts,Science and Humanities and Education programmes

2. Students are permitted to appear for the supplementary examinations both during odd and even semester.

Formative assessment : provision for improvement

All components pertaining to formative assessment will be offered. A student can take all or a few assessments. The assessment will take place from 4th week of the semester by paying Rs.100 as exam fee along with the consent of respective HoD. The reassessment will be conducted at the Department level, wherein HoD will act as the Chairperson. This improvement provision is not applicable for the current semester courses.

All assessment of course will be done on absolute marks basis. However for the purpose of the reporting the performance of a candidate, letter grades, each carrying certain points, will be awarded as per the range of total marks (out of 100) obtained by the candidate as detailed below

Grade Letter	**Grade Point**	**Performance**	**Actual Marks**
O	10	Outstanding	A≥91
A+	9	Excellent	81≤A<91
A	8	Very Good	71≤A<81
B+	7	Good	**61≤A<71**
B	6	Above Average	**55≤A<61**
C+	5	Average	50≤A<55
C	4	Pass	40≤A<50
U	0	Reappear/Absent	A<40
W	0	Withdrawal	

16. CALCULATION OF GRADE POINTS

University uses Grade Point Average (GPA), an internationally recognized calculation which is used to find the average result of all grades achieved.

The GPA for each semester is calculated by taking the sum of the products of grade points with the corresponding credits earned by the student divided by sum of credits in that semester. The formula for calculating GPA is given in equation (1).

$$GPA = \frac{\sum_{i} C_{ni} G_{ni}}{\sum_{i} C_{ni}} \quad (1)$$

Cumulative Grade Point Average (CGPA) is the sum of the products of credits with grade points of all semesters divided by the sum of all credits of all semesters. The formula for calculating CGPA is given in equation (2).

$$CGPA = \frac{\sum_{n} \sum_{i} C_{ni} G_{ni}}{\sum_{n} \sum_{i} C_{ni}} \quad (2)$$

where C denotes subject G denotes grade point n denotes semester number and i denotes subject number.

17. SUPPLEMENTARY EXAMINATIONS

The students who have not secured minimum marks to pass the subject have to reappear for the supplementary exams in the subsequent semester. Fast track exams are conducted for the final year students in a month's time from publication of result for 6th semester. This is applicable if a student has no standing arrear till 5th semester.

18. RULES FOR WITHDRAWAL FROM PROGRAMME

A student can withdraw from a programme temporarily or permanently due to whatsoever reasons. In that case she/he can rejoin the course if she/he has temporarily withdrawn from a course. However the maximum number of years to complete the course is (n+2) or 5(+1 year for exceptional cases). In addition, a student can withdraw maximum of three courses in a semester and this withdrawal shall be considered for only one semester of the programme.

19. RULES FOR CHANGING BRANCHES

A student can change a branch of study with the due permission from Dean of the respected School and Dean (Academic) before completing 15 working days of the 1st semester of the program.

20. ELIGIBILITY FOR THE DEGREE AND CLASSIFICATION OF CLASSES

A student is eligible for award of degree in B.C.A. programme if she/he earns total number of credits prescribed by the course curriculum within permitted duration of the course.

CGPA	7.5 and above and passed in first attempt Maximum number of courses which can be withdrawn is three and withdrawal considered for only one semester of the programme.	First Class with Distinction
CGPA	6.0 (in any number of attempt) and above in *n* + 1 consecutive years where *n* is the number of years for a programme	First Class
CGPA	6<A≤5.0	Second Class
CGPA	Less than 5.0	Third Class