PERIYAR UNIVERSITY

(NAAC 'A++' Grade with CGPA 3.61 (Cycle - 3)

State University - NIRF Rank 56 - State Public University Rank 25

SALEM - 636 011

CENTRE FOR DISTANCE AND ONLINE EDUCATION (CDOE)

B.Sc. Computer Science

[SEMESTER PATTERN]

(2024-25 Onwards)

PROGRAMME PROJECT REPORT (PPR)

(Effective from the academic year 2024 – 2025)

Programme Project Report (PPR)

I. Programme's Mission and Objectives

- To impart quality computer education to the students and to groom them to be technologist, professionals and dedicated citizens.
- To enable the students to understand the basic knowledge underpinning these discipline.
- To provide educational facilities for training the students for career in computer field.
- To develop entrepreneurial skills of the students so as to enable them to utilize the centrally available resources.
- To develop students with high level of performance and competence as required by current and future industries.
- To impart basic Computer Science knowledge to the students of interdisciplinary studies.
- To develop firm ground in computer technological skills

II. Relevance of the program with HEI'S mission and vision

In parallel with technological advances in today's world of education activities can be conducted without the constraints of time and space. Oneof the most important of these activities is distance education. The B.Sc. Computer Science programme through Distance Mode of Periyar University is offered by the Centre for Distance and Online Education (CDOE). The Centre for Distance and Online Education of the University has a team of well qualified and experienced teachers. They are available for academic counseling, guidance and help. Thus the introduction of B.Sc. Computer Science Programme in the Centre for Distance and Online Education will contribute substantially in fulfilling the mission of Periyar University.

III. Nature of prospective target group of learners

This programme is meant to systematize and give a method and structure to learner experiences. Specifically, this programme aims at enhancing the professional competencies and computer skills of the students having of low level of disposable income, rural dwellers, women, unskilled men and minorities.

IV. Appropriateness of Programme to be Conducted in Open and Distance Learning Mode to Acquire Specific Skills and Competence

The University has identified the following program outcomes and program specific outcomes as acquisition of specific skills and competence for B.Sc. Computer Science Program.

Programme Outcome, Programme Specific Outcome and Course Outcome

Computer Science is the study of quantity, structure, space and change, focusing on problem solving, application development with wider scope of application in science, engineering, technology, social sciences etc. The Students completing this programme will be able to present Software application clearly and precisely, make abstract ideas precise by formulating them in the Computer languages. Completion of this programme will also enable the learners to join teaching profession, enhance their employability for government jobs, jobs in software industry, banking, insurance and investment sectors, data analyst jobs and jobs in various other public and private enterprises.

1. Programme Outcomes (PO) of B.Sc. Degree programme in computer science

- Scientific aptitude will be developed in Students
- Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in the Computer Science & humanities stream.
- Students will become employable; Students will be eligible for career opportunities in education field, Industry, or will be able to opt for entrepreneurship.
- Students will possess basic subject knowledge required for higher studies, professional and applied courses.
- Students will be aware of and able to develop solution oriented approach towards various Social and Environmental issues.
- Ability to acquire in-depth knowledge of several branches of Computer Science and aligned areas. This Programme helps learners in building a solid foundation for higher studies in Computer Science and applications.
- The skills and knowledge gained leads to proficiency in analytical reasoning, which can be utilized in modelling and solving real life problems.
- Utilize computer programming skills to solve theoretical and applied problems by critical understanding, analysis and synthesis.

- To recognize patterns and to identify essential and relevant aspects of problems.
- Ability to share ideas and insights while seeking and benefitting from knowledge and insight of others.
- Mouldthestudentsintoresponsiblecitizensinarapidlychanginginterdependentsociety.

The above expectations generally can be pooled in to 6 broad categories and can be modified according to institutional requirements:

PO1: Knowledge

PO2: Problem Analysis

PO3: Design /Developmentof Solutions

PO4: Conduct investigations of complex problems

PO5: Modern tool usage

PO6: Applying to society

2. Programme Specific Outcomes of B.Sc. Degree Programme in Computer Science

PSO1: Think in a critical and logical based manner

PSO2: Familiarize the students with suitable software tools of computer science and Industrial applications to handle issues and solve problems in mathematics or Statistics and real-time application related sciences.

PSO3: Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.

PSO4: Understand, formulate, develop programming model with logical approaches to address issues arising in social science, business and other contexts.

PSO5: Acquire good knowledge and understanding to solve specific theoretical and applied problems in advanced areas of Computer science and Industrial statistics.

PSO6: Provide students /learners sufficient knowledge and skills enabling them to undertake further studies in Computer Science or Applications or Information

Technology and its allied areas on multiple disciplines linked with Computer Science.

PSO7: Equip with Computer science technical ability, problem solving skills, creative talent and power of communication necessary for various forms of employment.

PSO8: Develop a range of generic skills helpful in employment, internships &social activities.

PSO9: Get adequate exposure to global and local concerns that provides platform for further exploration into multi-dimensional aspects of computing sciences.

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs) can be carried out accordingly, assigning the appropriate level in the grids: (put tick mark in each row)

PO/PSO	**PSO1**	**PSO2**	**PSO3**		**PSO4**	**PSO5**	**PSO6**
PO1	✓						
PO2		✓					
PO3			✓				
PO4				✓	✓		
PO5						✓	
PO6							✓

V. Instructional design

Curriculum Design

The program is divided into six semesters and minimum credit requirement is 120 to get B.Sc. Computer Science degree through ODL mode from Periyar University. Minimum time period for acquiring B.Sc. Computer Science degree will be three years and maximum time (extended) period is six years.

First Year						
Semester-I						
Part	**Paper Code**	**List of Courses**	**Credit**	**Continuous Internal Assessment Marks**	**Term End Exam Marks**	**Marks**
				Max. Marks	**Max. Marks**	
Part-I	24DUFTA01	Language–Tamil	3	25	75	100
Part-II	24DUFEN01	English	3	25	75	100
Part-III	24DUCS01	CC1- Python Programming	5	25	75	100
	24DUCSP01	CC2-Practical:Python Programming	3	25	75	100
	24DUCSGE09	Elective Course - EC1(Generic / Specific) –Choose from Annexure I – Numerical Methods I	5	25	75	100
Part-IV	24DUCSFC01	Foundation Course FC - Problem Solving Techniques	4	25	75	100
Total			**23**	**200**	**450**	**600**
Semester-II						
Part	**Paper Code**	**List of Courses**	**Credit**	**Continuous Internal Assessment Marks**	**Term End Exam Marks**	**Marks**
				Max. Marks	**Max. Mark**	
Part-I	24DUFTA02	Language-Tamil	3	25	75	100
Part-II	24DUFEN02	English	3	25	75	100
Part-III	24DUCS02	CC3-Data Structure and Algorithms	5	25	75	100
	24DUCSP02	CC4-Practical: Data Structure and Algorithms Lab	3	25	75	100
	24DUCSGE10	Elective Course - EC2 (Generic/Specific) –Choose from Annexure I - Numerical Methods - II	5	25	75	100
Part-IV	24DUCSSE01	Skill Enhancement Course–SEC1 Choose from Annexure II – Fundamentals of Information Technology	4	25	75	100
Total			**23**	**150**	**450**	**600**
Second Year						
Semester-III						
Part	**Paper code**	**List of Courses**	**Credit**	**Continuous Internal Assessment Marks**	**Term End Exam Marks**	**Marks**

				Max. Marks	Max. Mark	
Part-I	24DUFTA03	Language -Tamil	3	25	75	100
Part-II	24DUFEN03	English	3	25	75	100
Part-III	24DUCS03	CC5 - Microprocessor and microcontroller	5	25	75	100
	24DUCSP03	CC6 - Practical: Microprocessor and Microcontroller Lab	3	25	75	100
	24DUCSGE11	Elective Course - EC3 (Generic / Statistical Methods and Its Application - I	5	25	75	100
Part - IV	24DUCSSE06	Skill Enhancement Course-SEC 2 Understanding Internet	3	25	75	100
		Environmental Studies	-	25	75	100
Total			**22**	**175**	**525**	**700**

Semester-IV

Part		List of Courses	Credit	Continuous Internal Assessment Marks	Term End Exam Marks	Marks
				Max. Marks	Max. Mark	
Part-I	24DUFTA04	- Language-Tamil	3	25	75	100
Part-II	24DUFEN04	- English	3	25	75	100
Part-III	24DUCS04	CC7-JavaProgramming	4	25	75	100
	24DUCSP04	CC8-Practical:JavaProgrammingLab	3	25	75	100
	24DUCSGE12	Elective Course-EC3(Generic/statistical Methods and Its Application - II	6	25	75	100
Part-IV	24DUCSSE02	Skill Enhancement Course–SEC 3 Introduction to HTML	4	25	75	100
Total			**25**	**150**	**450**	**600**

Third Year

Semester-V

Part	Paper Code	List of Courses	Credit	Continuous Internal Assessment Marks	Term End Exam Marks	Marks
				Max. Marks	Max. Mark	
Part- III	24DUCS05	CC9-Software Engineering	4	25	75	100
	24DUCS06	CC10-Database Management System	4	25	75	100
	24DUCSP05	CC11-Practical:Database Management System Lab	4	25	75	100
	24DUCSDE01	Elective Course - EC5 (Discipline Specific) Choose from Annexure I	4	25	75	100

	24DUCSDE02	Elective Course – EC6 (Discipline Specific) Choose from Annexure I	4	25	75	100
		CC12-Project with Viva voce	4	25	75	100
Part-IV		Value Education	2	25	75	100
Total			**26**	**175**		**700**

Semester-VI

Part	**Paper code**	**List of Courses**	**Credit**	**Continuous Internal Assessment Marks**	**Term End Exam Marks**	**Marks**
				Max. Marks	**Max. Mark**	
Part-III	24DUCS07	CC13 - Computer Networks	4	25	75	100
	24DUCS08	CC14 - .NET Programming	4	25	75	100
	24DUCSP06	CC15-Practical:NET Programming Lab	4	25	75	100
	24DUCSDE03	Elective Course –EC7 (Discipline Specific) Choose from Annexure I	3	25	75	100
	24DUCSDE04	Elective Course –EC8 (Discipline Specific) Choose from Annexure I	3	25	75	100
Part-IV	24DUCSSE07	Skill Enhancement Course – SEC 4 Office Automation	3	25	75	100
Total			**21**	**150**	**30**	**600**

Faculty and Support Staff:

The University has appointed the necessary faculty and support staff specifically for ODL mode, in compliance with UGC requirements. The course materials developed by the CDOE faculty meet the standards set by the 2020 regulations.

Staff Category	**Required**
Assistant Professor	2
Supportive Staff	1
Total	**3**

Delivery Mechanism:

CDOE ODL employs a modern ICT (Information & Communication Technology) enabled approach for instruction, distinct from conventional or regular programs. This methodology is more learner-oriented, with the learner actively participating in the teaching-learning process. The academic delivery system of CDOE ODL includes:

Print Material:

The printed material of the programme supplied to the students will be unit wise for every course.

Counselling Sessions:

There will be 6 counseling/ contact classes in face to face mode of two hours each for a course of 4 credits. The counseling sessions / Personal Contact Programme (PCP) classes will be held on the campus of the University on Saturdays and Sundays.

Medium of Instruction:

The medium of course instruction and examination will be in English.

VI. Procedure for admission, curriculum transaction and evaluation for B.Sc. Computer science program

Admission Procedure:

Admission to the B.Sc. Computer Science programme will be based on evaluating candidates' eligibility. Admission is not guaranteed, and Periyar University CDOE reserves the right to cancel any admission at any time if any irregularities are discovered in the admission process or eligibility criteria.

Duration of the Programme:

The maximum duration for B.Sc. Computer Science is 3 (Course duration)+5. If a student does not complete the program within eight years, they must apply for special examination until they complete their programme.

Eligibility:

A candidate who has passed 10, +2 is eligible to apply for B.Sc. Computer Science.

Fee Structure:

Name of the Programme	Degree	Duration	Year	Fee (in Rs.)
Bachelor of Science in Computer Science	UG	3 (Course duration)+5	1	11,670
			2	10,670
			3	10,870

Credit System:

Periyar University, CDOE plans to implement the 'Credit System' for most of its programs. Each credit corresponds to 30 hours of study, encompassing all learning activities. Therefore, an 8-credit course requires 240 hours, a 6-credit course requires 180 hours, a 4-credit course requires 120 hours, and a 2-credit course requires 60 hours of study. This system helps students gauge the academic effort needed to complete a course. To finish an academic program, students must successfully complete both the assignments and the term-end examinations for each course in the program.

Evaluation:

The evaluation system of the programme is based on two components:

Continuous Evaluation through assignments (25%weightage):

This component holds a 25% weightage. Each course will have at least one graded assignment and test. Students must submit these assignments to the Coordinator of the CDOE/Learner Support Centre to which they are assigned or attached. For the Assignment students may be permitted to write with the help of books/materials for each Course, which will be evaluated by the Evaluators appointed by the University.

Theory Examination (75% weightage):

Theory Examination will be conducted by the University in the identified Examination Centres. These exams are conducted twice a year. Students may choose to take any of the exams offered by the University during the year. To be eligible for the Term-End Examination, students must have registered for the course and submitted the assignment. Students must submit an Examination form online (www.periyaruniversity.ac.in) or offline before the due dates specified in

the schedule of operations. If a student misses any term-end examination for a course, they can appear for it in any subsequent term-end examinations. This option is available until the student secures the minimum pass grade in the courses, but only up to a maximum of six semesters from the date of course registration. After this period, the student can extend for another ten semesters by paying the fee again. The Candidates shall be declared to have passed the examination if he/she secures not less than 40 marks in total (CIA mark + Theory Exam mark) with minimum of 30 marks in the Theory Exam conducted by the University.

QUESTION PAPER PATTERN

For Core, Allied & Elective - I

Duration: **Three Hours** **Maximum Marks:75**

Part A: (10 X 2 = 20 marks) Answer ALL Questions
Part B: (3 X 5 = 15 marks) Answer any THREE Questions (THREE out of FIVE questions)
Part C: (5 X 8 = 40 marks) Answer ALL Questions (One Question from Each Unit with internal choice)

Practical marks Distribution:

Maximum Marks : 100 Marks External [EA] : 75 Marks

Internal [CIA] : 25 Marks

Practical - External Marks Distribution (Total Marks: 75)

For each practical question the marks should be awarded as follows (External)

i) Algorithm / Flowchart - 20%

ii) Writing the program in the main answer book - 30%

iii) Test and debug the program - 30%

iv) Display the correct output - 20%

Question Paper Pattern

Student should attend two questions (either or pattern)

Internal Marks Distribution (Total Marks: 25)

Record : 10 Marks

Internal Practical examinations : 15 Marks

Scheme of evaluation for practicum

The student has to secure 50% in each and every category of practicum examinations.

Classification of Result

Marks	Grade Point	CGPA	Letter Grade	Description
96 and above 91-95	10 9.5	9.51 and above 9.01-9.50	S+ S	First Class – Exemplary
86-90 81-85 76-80	9.0 8.5 8.0	8.51-9.00 8.01-8.50 7.51-8.00	D++ D+ D	First Class Distinction
71-75 66-70	7.5 7.0	7.01-7.50 6.51-7.00	A++ A+	First Class

Passing Minimum 50% P: Pass, ESE: End Semester Examination, CIA: Continuous Internal Assessment

$$GPA = \frac{\Sigma (CDT \times GPT)}{\Sigma CDT}$$

Where: CDT – No. of credits of core, optional and elective courses

GPT= Grade Point (obtained by dividing the percentage of marks scored by 10)

VII. Requirement of Laboratory and Library Resources:

The well sophisticated Computer laboratory facilities of Periyar University provide the all technology resources like 120 Systems with HPC Server connection along with software. All the systems are well connected with LAN and WIFI facilities. The University provides 1 GBPS internet connecting to the learners for academic as well as research purpose.

The Central Library is one of the important central facilities of Periyar University. It has Text book, reference books, conference proceedings, back volumes, standards, and non-book material such as CD-ROMs and audios. The central library procured several e- books in different areas.

All routine functions of the library are automated with the help of an integrated library software package, developed and distributed by UGC INFLIBNET. The database the entire collection has been created and available through online Public Access Catalogue (OPAC) to the users via campus network.

The Centre for Distance and Online Education (CDOE) at Periyar University has begun establishing a dedicated library for the ODL program and is in the process of acquiring printed books and e-books for this purpose.

VII. Cost Estimate of the Programme and the Provisions:

The University has already incurred initial expenses for infrastructure, manpower, SLM preparation, and other necessities. The University plans to allocate expenses from the total fee collection, based on admission of students as follows:

- ✓ SLM Printing and Delivery – 20%
- ✓ Salary and Administrative Expenses – 60%
- ✓ Software Development & Maintenance – 10%
- ✓ Future Developments – 10%

IX. Quality assurance mechanism

The CIQA will oversee and ensure the quality of the ODL programs. The CIQA of Periyar University's Centre for Online and Distance Education includes the Vice-Chancellor as the Chairperson, three senior teachers from Higher Educational Institutions, Heads of three departments or schools offering recognized programs in Open and Distance Learning and Online modes, two External Experts in Open and Distance Learning and/or online education, Officials from the Administration and Finance departments, and the Director of the Centre for Internal Quality Assurance as the Member Secretary.

The objective of the CIQA is to develop and implement a comprehensive and dynamic internal quality assurance system. This system will ensure that the higher education programs offered in the Open and Distance Learning (ODL) and Online modes by the Higher Educational Institution are of acceptable quality and are continuously improved.