

**UNIVERSITY OF KERALA**  
**School of Distance Education**  
**Master of Science (Computer Science)**  
**Programme Project Report**

**(a) Programme's Mission and Objectives:**

**Mission**

In keeping with the overall mission of the School of Distance Education, University of Kerala, to ensure accessibility of quality higher education to all, the programme M.Sc Computer Science aims at imparting knowledge in Software Development, and skills in using Computer Science in the post graduate level.

**Objectives**

- To develop an interest in the candidates towards a career in academic and research, and to enable them with sufficient knowledge to become a competent academician.
- To equip the students with adequate exposure and skills to empower them to catch a deserving position in the software industry.
- To develop an interest in promoting the use of Computer Science for the positive development of our society and the environment.
- To enable the students to contest for regional/national/international level competitive examinations.

**(b) Relevance of the program with HEI's Mission and Goals:**

Offered in the distance mode, M.Sc Computer Science will be closely aligned with the vision and mission of the University of Kerala, in vowing to ensure knowledge based, student focussed, quality and cost conscious but socially responsible education.

M. Sc Computer Science in the distance mode will be a feeder programme for the Ph.D programmes offered by the university, and it follows the same syllabus and curriculum of the programme offered in the regular mode through the affiliated colleges of the University of Kerala.

**(c) Nature of prospective target group of learners**

M. Sc Computer Science programme has wide demand, and only a small percentage of the students are being accommodated in the regular mode through colleges and university departments. This will join the attempt to democratising higher education to large segments of the population, providing an innovative system of university level education that is flexible and open in terms of methods, pace of learning, eligibility for enrolment and age of entry. The consideration is given to the low level of disposable income, rural dwellers, women, minorities etc.

Understanding the needs of the learners we have structured our learning material and induction programmes to lead the learners through the threshold of higher education, and lead them through the course of the programme and the final evaluation.

**(d) Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence:**

The M.Sc Computer Science programme will see to ensure the following skills and competences in the learners.

1. IT Skills: The ability to conceive, design and write correct working computer programs in several different programming styles using a variety of compilers and development environments.
2. Software design : The ability to apply a software engineering process and take a project through the stages of the software cycle using design notations and software engineering tools selectively.
3. Analytical and Research: The ability to research, acquire, use and critically evaluate complex data.
4. Problem solving: The ability to solve problems by using mathematical and I.T. knowledge.
5. Creativity: Able to show creativity and innovation in solving unfamiliar problems.
6. Team Work: Combine with others to achieve tasks/goals.
7. Communication: The ability to communicate ideas and results clearly, concisely and effectively both orally, (by giving presentations), and in writing, for instance in the production of technical reports.

**Instructional Design:**

<b>SEM</b>	<b>Course Code</b>	<b>Course Title</b>	<b>CA (Marks)</b>	<b>ESA (Marks)</b>	<b>Total</b>
I	CS11	Computer Architecture	25	75	100
	CS12	Data Structures and Algorithms	25	75	100
	CS13	Mathematical Foundations of Computer Science	25	75	100
	CS14	Programming Paradigms	25	75	100
	CS15	Computer Networks	25	75	100
	CS16	Data Structures and Algorithms Lab	25	75	100
	CS17	JAVA Programming Lab	25	75	100

II	CS 21	Modern Operating Systems	25	75	100
	CS 22	Advances in Database Management	25	75	100
	CS 23	Object Oriented Analysis and Design	25	75	100
	CS 24	Graphics and Multimedia Systems	25	75	100
	CS 25	Optimization Techniques	25	75	100
	CS 26	Minor Project and seminar	50	50	100
	CS 27	Database and Web Programming Lab	25	75	100
III	CS31	Data Mining and Ware Housing	25	75	100
	CS32	Distributed Systems and Cloud Computing	25	75	100
	CS33	Information Security	25	75	100
	CS34	Compiler Design	25	75	100
	CS35	Elective I	25	75	100
	CS36	Network Administration Lab	25	75	100
	CS37	Distributed Computing Lab	25	75	100
IV	CS41	Research and Technical Writing	25	75	100
	CS42	Elective II	25	75	100
	CS43	Major Project	100	100	200
	CS44	Comprehensive Viva Voce		100	100
		Total			2600
Elective I					
Digital Image Processing					

**(f) Duration of the programme**

4 Semesters, two years.

**(g) Faculty and support staff requirement**

There is three full time faculty members available and one of them coordinates the M.Sc

Computer Science Programme. There is sufficient staff support from the SDE for processing administrative work. The service of qualified guest teachers and experts from panels approved by the Vice Chancellor are used in the preparation of SLM, for taking contact classes and conducting internal evaluation.

**(h) Instructional delivery mechanisms**

In addition to providing Self Learning Material, students are offered 240 contact hours each semester, conducted over 40 days during the weekend. Classes are taken using audio visual aids, and students are encouraged to use web resources. A repertoire of audio/video lectures are being prepared, which will be made available to the learners on an experimental basis from this academic year onwards.

**(i) Procedure for admissions, curriculum transaction and evaluation :**

Application for admissions are received online. Eligibility for admission to Candidates for admission to M Sc Programme in Computer Science should have passed

(i) A Degree course with minimum 3 years duration after 10+2 with not less than 50% marks or 2 CGPA[S] out of 4 in Computer Science/Computer Application/Electronics as main or an equivalent Degree recognized by the University of Kerala for the purpose.

(ii) Any science degree with minimum 3 years duration after 10+2 with not less than 50% marks or 2 CGPA[S] out of 4 with Computer science/Computer application as one of the main/subsidiary/core subject. Candidate shall meet all other requirements in the prospectus published by University time to time.

**(j)Academic Calendar**

ADMISSION		
Admission Notification	First week of June	
Closing date of Admission	Last week of September	
Schedule of distribution of study materials		
Course	Date	By Post
III, IV Semester	Last week of June	Last week of July
I & II Semester	Last week of October	Last week of November
Schedule of contact classes		
Course	Schedule	
III & IV Semester	First week of July	
I & II Semester	First week of November	
Schedule of examinations		
Course	Schedule	
III and IV Semester	First week of April	
I and II Semester	Second and Third week of April	

### **(k) Fee structure**

The fee for the course is Rs.13,770/- (Rupees Thirteen thousand seven hundred and seventy only). Tuition fee is waived for students belonging to eligible categories.

**(l) Financial Assistance:** Concession for tuition fee will be given to SC/ST and OEC students. The students belonging to SC/ST and OEC category will be admitted to the programme without remitting the tuition fee. The fee for the students thus admitted will be later claimed from SC/ST department as per the rules laid down by the government of Kerala and will be remitted to Kerala University Fund (KUF).

**(m) Curriculum Transaction:** Curriculum is transacted in the Distance Mode with the help of Self Learning Material and Personal Contact Classes. The use of web-based tools is not in place yet, but steps are being initiated.

**(n) Evaluation:** Assessment is continuous and end semester.

Continuous Assessment requires the submission of one assignment and one Test Paper for each course carrying 10 marks each and 5 marks is given for attendance.

End Semester Examinations are conducted by the Controller of Examinations, University of Kerala. The written exams carry 75 marks per paper.

### **(o) Requirement of the laboratory support and Library Resources:**

A well equipped lab is provided for conducting IT courses. It has continuous internet connectivity. Printed lab manuals are provided to students. Faculty and programmers will guide the students to carry out their lab work. They can access online resources from the lab.

1. **System Specification:** The computer lab at SDE has 50 Computers and Network

Technology well equipped with High end i3 Processors. The recent version of Ubuntu (16.10) Operating System provides hands on experience for students. The lab hosts a campus net line which helps the students to update themselves with the recent trends in the industry, with online UPS and special furniture for Computer users. The Lab is provided with an LCD projector with all necessary peripherals to enhance the quality of teaching and learning. The lab has also a Canon 6230 dn network printer.

Desktop Computer (Acer Veriton M200-H81) RAM-4GB DDR 3 RAM Hard Disk-1 TB  
Preloaded with Ubuntu Linux 16.10

2. **Power- UPS**

The back up from two 5 KVA online UPS (30 Minutes back up) supports the machines in the lab and network technology. Single phase AC input (170-250V) and Single phase AC output (230V) and 30 Minutes back up time. The main network switch is placed in the ground floor.

3. **Networking**

The lab hosts the Campus net line (100 mbps Unmanaged Networking facilities for each and every 50 Computers). The Security is ensured by Computer Centre of University of Kerala.

The SDE has a separate Library with more than 28,000 books. Library automation is done using LibSoft software which facilitates all in- house operations of the library. The library

currently subscribes to more than 15 journals of various subject fields. An amount of Rs. 525/- has to be remitted by the students to obtain membership in the Library, of which Rs. 420/- will be refunded on completion of the course. The non members can make use of the library resources and the reference services by producing their student's ID proof. They can use the library for reference purpose and they can avail photocopy facilities.

**(o) Cost estimate of the programme and the provisions:(Base 2019-20)**

Sl.No	Expenditure	Total for the SDE during 19-20 (25987 students) (Rs. in lakh)	Cost estimate for M. Sc Computer Science programme (150 students)
01	Pay and Allowance	435.00	360000
02	Contact classes and evaluation	80.00	46050
03	Course materials	100.00	57600
04	Advertisement charges	25.00	14400
05	Postage and telephone	7.4	4200
06	Books and Periodicals	3.5	1300
07	Miscellaneous	9.95	5700
	<b>Total</b>	<b>660.85</b>	<b>489250</b>
	<b>Provisions (6%)</b>		<b>29355</b>
	<b>Total</b>		<b>518605</b> Cost per student/ year=Rs.3457

**(p) Quality assurance mechanism and expected programme outcomes**

The University Board of Studies for PG Computer Science approves and reviews the syllabus, course content, and the Self Learning Material of M. Sc Computer Science offered in the distance mode also. The overall ensuring of quality will be closely monitored by the Centre for Internal Quality.

**(q) Expected Programme Outcomes:** After completing the course students will

- 1) Learn and gain an integrated set of IT skills.
- 2) Learn the theoretical and practical knowledge required to design large and complex Computer applications.
- 3) Embrace future developments in the field and retain professional relevance.
- 4) Build a strong foundation of computer system and Information Technology.
- 5) Gain dexterity in advanced programming languages and build sophisticated software for wide area of applications.
- 6) Work with high end applications in Internet Technologies.
- 7) Acquire the managerial ability required to analyse, design, develop and maintain software development

**Note:** The programme structure is based on the present syllabus existing in the regular mode in the University of Kerala. The UG and PG syllabi in the regular mode in the University is currently being revised and is about to be finalized. SDE will adopt the revised syllabus as such when they are finalized for the 2020-21 admission. The SLMs will also be updated accordingly.

  
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Prasad

**REGISTRAR  
IN-CHARGE**

