UNIVERSITY OF KERALA
School of Distance Education

Bachelor 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 B.Sc. Computer Science aims at imparting thorough grounding to the students in the theoretical and practical aspects of the computer science discipline and to groom them to good computer professionals in the undergraduate level.

Objectives
i. To provide students with the knowledge in the fields of information technology and management it develops students with a requisite professional skills and problem solving abilities for pursuing a career in software industry.
ii. To be a foundation graduate programme this will act as a feeder course for higher studies in the area of Computer Science/Applications.
iii. To prepare students with the necessary skills to enter in technological fields such as system programming, technical support etc.

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

Offered in the distance mode, B.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.

B.Sc. Computer Science in the distance mode will be a feeder programme for the M.Sc Computer Science/MCA 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

B.Sc. Computer Science programme has wide demand, and only a small percentage of the students are being accommodated in the regular mode through colleges. The objective of School of Distance Education is to provide education facilities to all qualified and willing persons who are unable to join regular colleges due to various reasons. 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.

Understanding the needs of the learners we have structured our learning material and induction programmes to lead the fresh 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:

B.Sc. Computer Science programme will ensure the following skills and competences in the learners.

1. Programming -The ability to design and write computer programs by using different programming languages and in different platforms.

2. Network Management -Able to setup and manage networks.

3. Web design -Able to design and create web pages and creation of websites.

4. 4.Database Management-Able to create and manage databases.
5. Analytical and Logical skills-Ability to identify a problem and coming up with a most suitable technological solution to address it.

6. Problem solving skills-Ability to solve complex problems in a systematic and logical way.

(e) Instructional Design:

Instructional Design:

SCHEME AND DISTRIBUTION OF MARKS

Semester 1

Course code	Credits	Course Name	CE	ESE	Total
EN1111.4	2	Speaking and listening skills	20	80	100
MM1131.10	3	Mathematics I	20	80	100
CS1121	2	Introduction to IT	20	80	100
CS1131	3	Digital Electronics	20	80	100
CS1141	4	Introduction to Programming	20	80	100
CS1142	3	Programming Lab – I	20	80	100
CS1132	3	Digital Electronics Lab	20	80	100
TOTAL	**20**		**140**	**560**	**700**

Semester 2

Course code	Credits	Course Name	CE	ESE	Total
EN1211.4	2	Writing and Presentation Skills	20	80	100
MM1231.10	3	Mathematics II	20	80	100
CS1221	3	Environmental Studies	20	80	100
CS1241	3	Data Structures	20	80	100
CS1242	3	Object Oriented Programming	20	80	100
CS1243	3	Programming Lab – II	20	80	100
CS1244	3	Data Structures Lab	20	80	100
TOTAL	**20**		**140**	**560**	**700**

Semester 3

Course code	Credits	Course Name	CE	ESE	Total
CS1341	2	Computer Organization & Architecture	20	80	100
CS1342	3	Software Engineering	20	80	100
CS1343	3	Operating Systems	20	80	100
CS1344	3	Internet Programming	20	80	100
CS1345	3	Microprocessors & Peripherals	20	80	100
CS1346	3	Programming Lab – III	20	80	100
CS1347	3	Internet Programming– Lab	20	80	100
TOTAL	20		140	560	700

Semester 4

Course code	Credits	Course Name	CE	ESE	Total
CS1441	3	Design And Analysis of Algorithms	20	80	100
CS1442	3	Database Management Systems	20	80	100
CS1443	3	Computer Networks	20	80	100
CS1444	3	Programming in Java	20	80	100
CS1445	2	Minor Project	-	100	100
CS1446	3	Programming Lab – IV	20	80	100
CS1447	3	Databases Lab	20	80	100
TOTAL	20		120	580	700

Semester 5

Course code	Credits	Course Name	CE	ESE	Total
CS1541	3	Free and Open Source Softwares (Foss)	20	80	100
CS1542	3	System Software	20	80	100
CS1543	3	Computer Graphics	20	80	100
CS1551.1 CS1551.2 CS1551.3	2	**Open Course** Internet Technology Linux Environment Business Informatics	20	80	100
CS1561.1 CS1561.2 CS1561.3	3	**Elective** Multimedia Systems Bioinformatics Trends in Computing	20	80	100
CS1544	3	Computer Graphics Lab	20	80	100
CS1545	3	Free and Open Source Software (Foss) Lab	20	80	100
TOTAL	20		140	560	700

Semester 6

Course code	Credits	Course Name	CE	ESE	Total
CS1641	4	Introduction to Information Security	20	80	100
CS1642	4	Artificial Intelligence	20	80	100
CS1643	4	E-Commerce & E-Governance	20	80	100
CS1661.1 CS1661.2 CS1661.3	4	**Electives** Mobile Computing Embedded Systems Data Mining & Data Warehousing	20	80	100
CS1644	4	Major Project & Viva	-	100	100
TOTAL	**20**		**80**	**420**	**500**
GRAND TOTAL	**120**				**4000**

Duration of the programme

6 Semesters, three years.

Faculty and support staff requirement

There are three full time faculty members available and one of them coordinates the B.Sc. Computer Science Programme. There is sufficient staff support from the SDE office 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.

Instructional delivery mechanisms

In addition to providing Self Learning Material, students are offered 60 contact hours each semester(for theory), conducted over 10 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.

(f) Procedure for admissions, curriculum transaction and evaluation

Applications for admissions are received online. Eligibility criteria for admission to B.Sc. Computer Science is a pass in Higher Secondary Examination or any other examination recognized as equivalent thereto by the University of Kerala with Mathematics as one of the optional subjects.

(g)**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, V and VI 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, V and VI Semester	First week of July	
I & II Semester	First week of November	
Schedule of examinations		
Course	Schedule	
V and VI Semester	First week of April	
III and IV Semester	Second and Third week of April	
I and II Semester	Fourth week of April	

Fee structure: Rs.17075/- for entire programme.

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 done by the government of Kerala and will be remitted to Kerala University Fund(KUF).

Programme Delivery

The programme is being delivered with the help of SLM and Personal Contact Programmes. The SLM is being dispatched to the students during each semester by hand or by post.The use of web-based tools is not in place yet, but steps are being initiated. Evaluation is continuous and end semester. Continuous Evaluation requires the submission of one assignment and one Test Paper for each course carrying 10 marks each.

End Semester Examinations are conducted by the Controller of Examinations, University of Kerala. The written exams carry 80 marks per paper. There is one mini project in the 4th semester and a major project in the 6th semester, each carries 100 marks.

(g) Requirement of the laboratory support and Library Resources:

Laboratory hours are mandatory for B.Sc. Computer Science programme. Students can avail the computers in the Central Computer Lab of the School of Distance Education which has continuous internet connectivity.

The SDE has a separate Library with more than 23,000 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. 500/- has to be remitted by the students to obtain membership in the Library, of which Rs. 400/- 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.

(h) 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 BSc CS programme (200 students)
01	Pay and Allowance	435.00	634782
02	Contact classes and evaluation	80.00	61569
03	Course materials	100.00	76962
04	Advertisement charges	25.00	19240
05	Postage and telephone	7.4	5695
06	Books and Periodicals	3.5	2694
07	Miscellaneous	9.95	7657
	Total	660.85	808599
	Provisions (6%)		48516
	Total		857115 Cost per student/ year=Rs.4285

(i) Quality assurance mechanism and expected programme outcomes :
Quality Assurance Mechanism

The SDE, University of Kerala has devised the following mechanism for monitoring the effectiveness of the B.Sc. Computer Science programme to enhance its standards of curriculum and instructional design.

(a) Established a Centre for Internal Quality Assurance (CIQA) at the University level to develop and put in place a comprehensive and dynamic internal quality assurance system to enhance the quality of the programmes offered through distance mode as per the norms and guidelines of the University Grants Commission (Open and Distance Learning) Regulations, 2017.

(b) The CIQA is periodically conducting institutional quality audits, to promote quality assurance and enhance as well as spread best- in-class practices of quality assurance. The CIQA conducts the quality audit by addressing the following seven broad areas, namely:

  i. Governance, leadership and management

  ii. Articulation of higher educational institutions objectives

  iii. Programme development and approval processes

  iv. Infrastructure resources

  v. Learning environment and learner support

  vi. Assessment & evaluation of learning outcomes

  vii. Teaching quality and staff development

(c) The SDE has an approved panel of experts for preparing SLM. The SLM prepared is being edited by the course coordinator. The CIQA also oversees the development and preparation of SLMs. Then submit the SLMs to the Board of Studies concerned for the approval. The SLMs are developed with the approach of self explanatory, self-contained, self-directed, self- motivating and self-evaluating.

(d) The SDE of the University has three full time faculty members exclusively for coordinating the programme and also has a panel of qualified guest teachers for counselling students and engaging in personal contact programmes.

Expected Programme Outcomes:

Towards the end of the programme, students will be able to:

- Apply fundamental principles and methods of Computer Science to a wide range of applications.
- Design, correctly implement and document solutions to significant computational problems.
- Analyze and compare alternative solutions to computing problems.
- Design and implement software systems that meet specified design and performance requirements.
- Work effectively in teams to design and implement solutions to computational problems.
- Communicate effectively, both orally and in writing.
- Think critically and creatively, both independently and with others.
- Recognize the social and ethical responsibilities of a professional working in the discipline.
- Adapt to new developments in the field of computer science.

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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REGISTRAR
IN-CHARGE