COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

INTERNAL QUALITY ASSURANCE CELL

ANNUAL QUALITY ASSURANCE REPORT

2016-17

Submitted to

**NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL
[NAAC]
BANGALORE**

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COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
INTERNAL QUALITY ASSURANCE CELL

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ANNUAL QUALITY ASSURANCE REPORT (AQAR)

2016-17

All NAAC accredited institutions will submit an annual self-reviewed progress report to NAAC, through its IQAC. The report is to detail the tangible results achieved in key areas, specifically identified by the institutional IQAC at the beginning of the academic year. The AQAR will detail the results of the perspective plan worked out by the IQAC. *(Note: The AQAR period would be the Academic Year. For example, July 1, 2012 to June 30, 2013)*

Part – A

1. DETAILS OF THE INSTITUTION

1.1 Name of the Institution

> Cochin University of Science and Technology

1.2 Address Line 1

> Cochin University P.O

Address Line 2

> Kochi

City/Town

> Ernakulam

State

> Kerala

Pin Code

> 682022

> registrar@cusat.ac.in

Contact Nos.

> 0484-2575396

Name of the Head of the Institution: Dr. J. Letha

Tel. No. with STD Code: 0484-2577619

Mobile: 0944761133

Name of the IQAC Co-ordinator: Dr.K.Girish Kumar

Mobile: 09847363660

IQAC e-mail address: iqaccusat@gmail.com

1.3 NAAC Track ID KLUNGN10039

1.4 NAAC Executive Committee No. & Date: EC(SC)/17/A&A/98.2 dated16/09/2016

1.5 Website address: www.cusat.ac.in

Web-link of the AQAR: http://cusat.ac.in/iqac

1.6 Accreditation Details

Sl. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1st Cycle	Three Star	-	2001	2006
2	2nd Cycle	A	3.09	2016	2021

1.7 Date of Establishment of IQAC : 10/04/2007

1.8 AQAR for the year

2016-17

1.9 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC ((*for example AQAR 2010-11submitted to NAAC on 12-10-2011*)

This is the first AQAR subsequent to the latest assessment and accreditation by NAAC on September 2016

1.10 Institutional Status

University:	State ✔	Central	Deemed	Private	
Affiliated College	Yes	No ✔			
Constituent College	Yes	No ✔			
Autonomous college of UGC	Yes	No ✔			
Regulatory Agency approved Institution	Yes ✔	No			
Type of Institution	Urban ✔	Rural	Tribal		
Co-education	Men ✔	Women ✔			
Financial Status	Grant-in-aid ✔	UGC 2(f) ✔	UGC 12B ✔	Grant-in-aid + Self Financing	Totally Self-financing

1.11 Type of Faculty/Programme

Arts	
Science	✔
Commerce	
Law	✔
PEI (Phys Edu)	
TEI (Edu)	
Engineering	✔
Health Science	
Management	✔
Others (Specify)	✔
Environmental Studies	✔
Humanities	✔
Marine Sciences	✔
Social Sciences	✔
Technology	✔

1.12 Name of the Affiliating University *(for the Colleges)*

Not Applicable

1.13 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc

Autonomy by State/Central Govt./University

University with Potential for Excellence **UGC-CPE**

DST Star Scheme **UGC-CE**

UGC-Special Assistance Programme ✓ **DST-FIST** ✓

UGC-Innovative PG programmes ✓ **Any other** (*Specify*) | DST-PURSE |

UGC-COP Programmes

2. IQAC Composition and Activities

2.1 No. of Teachers | 13 |

2.2 No. of Administrative/Technical staff | 3 |

2.3 No. of students | 0 |

2.4 No. of Management representatives | 3 |

2.5 No. of Alumni | 2 |

2. 6 No. of any other stakeholder and | 1 |

community representatives

2.7 No. of Employers/ Industrialists   2

2.8 No. of other External Experts   3

2.9 Total No. of members   23

2.10 No. of IQAC meetings held   :   3

2.11 No. of meetings with various stakeholders: No.   6   Faculty   2

   Non-Teaching Staff   2   **Students**   1   **Alumni**   -

      Others   1

2.12 Has IQAC received any funding from UGC during the year? Yes [ ]   No [✓]

   If yes, mention the amount   -

2.13 Seminars and Conferences (only quality related)

   (i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total Nos. 1   International 0   National 0   State 1   Institution Level 0

   (ii) Themes

   Extend the research outcomes of the university beyond the confines of academia and make it accessible to the larger community.

2.14 Significant Activities and contributions made by IQAC

1.	University was accredited with A grade by the NAAC peer team which was visited the university during August 2016. Significant efforts of IQAC were involved since the preparation of SSR to the conduct of peer team visit.
2.	Syllabus of more than 95% of the academic programmes has been revised as a result of the constant monitoring and involvement of IQAC
3.	As a result of the strong intervention of IQAC, more than 90 new faculty members are appointed during these years in the university.
4.	SWOT analysis was done and the result had been published.
5.	An orientation programme to enhance the research activities has been conducted for the newly appointed faculty members
6.	IQAC *had organized an open house programme, SHASTHRAYAN,* for the people's representatives of the Ernakulam District as well as for public on 20th and 21st January, 2017 to showcase the research activities going on in the University. About 350 representatives from different panchayats of the district participated. In addition, the university doors were opened to school/ college students and public during the days. In this open house, the existing research facilities of social relevance under different faculties such as Engineering, Science, Marine Science, Social Science etc. were highlighted. This was the first of its kind conducted in the State and won appreciation from all corners of the society. ***Shri. Prakash Javadekar, Union Minister** for Human Resources Development congratulated the University for this Innovative Project 'Sasthrayan'.*
7.	Gender Audit was done and the result had been published
8.	All departments are directed to collect and analyse the student feedback. Development of a web portal for the collection and analysis of student feedback is underway.
9.	Students' enrolment statistics had been prepared and analysed.
10.	A book on academic & research activities as well as on major research outcomes of the university departments and auxiliary units was published.
11.	Participated in the various ranking processes such as NIRF India Ranking, THE World Ranking, QS BRICS Ranking, Global Institutional Profiles Project - Clarivate Analytics, Chancellor's Award
12.	Prepared report and participated in the All India Survey on Higher Education
13.	Prepare report on performance of the University every quarter and submit to the Hon'ble Chancellor

2.15 Plan of Action by IQAC/Outcome

Plan of Action	Achievements
1. To get accredited by NAAC	NAAC accredited the University with A grade in September 2017.
2. Revise the syllabi of all programmes of which revision is due	Revise the syllabi of more than 95% of courses
3. Promote research activities of the newly appointed faculty members	IQAC had effective role in promoting project proposal submissions. During 2016-17, 71 proposals for research projects had been submitted to various funding agencies.
4. Prepare Vision Plan of university	A comprehensive vision plan of the university has been prepared and the SWOT analysis helped the university in preparing its vision plan effectively.
5. Conduct a programme Sasthrayan to showcase research works and its output to general public	Conducted Sasthrayan on 20th and 21st January, 2017 and Shri. Prakash Javadekar, Union Minister for Human Resources Development congratulated the University for this Innovative Project 'Sasthrayan'.

 ** Attach the Academic Calendar of the year as Annexure. **Attached***

2.15 Whether the AQAR was placed in statutory body   Yes ✔   No ☐

Management ☐   Syndicate ☐   Any other body ✔

Part – B

Criterion – I
Curricular Aspects

1.1 Details about Academic Programmes

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	26	-	-	-
PG	52	-	1	33
UG	14	-	8	14
PG Diploma	4	-	-	2
Integrated Masters	1	-	-	-
Diploma	9	-	-	-
Certificate	5	-	-	-
Others M.Phil	9	-	-	
Integrated PhD	2	-	-	2
Total	122	-	9	51
Interdisciplinary	10	-	3	-
Innovative	3	-	1	-

1.2   (i) Flexibility of the Curriculum: CBCS/Core/Elective option / Open options - CBCS

1.   (ii) Pattern of programmes:

Pattern	Number of programmes
Semester	78
Trimester	-
Annual	14

1.3 Feedback from stakeholders* Alumni [√] Parents [ ] Employers [ ] Students [√]
(On all aspects)

Mode of feedback : Online [ ] *Manual* [√] *Co-operating schools (for PEI)* [ ]

1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

The syllabi of all academic programmes run by the University are revised in once in four years. The syllabi of 11 academic programmes were revised during 2016-17.

1.5 Any new Department/Centre introduced during the year. If yes, give details.

Two new centres of excellence had been established in 2016-17 by integrating the resources available with the major research groups within the science departments. Rupees fifty lakhs has been allotted and is being utilized for the infrastructural development of these centres.

Table 2.6.1.2: Details of development of centres of excellences

Sl. No.	Name of the Centre	Amount allotted in Rs. (in lakhs)	Purpose
1.	Centre of Excellence in Advanced Materials	50.00	For establishment and procurement of infrastructure for the Centre.
2.	Centre of Excellence in Marine Biology, Microbiology & Biochemistry	50.00	For establishment and procurement of infrastructure for the Centre.

Criterion – II
Teaching, Learning and Evaluations

2.1 Total No. of permanent faculty

Total	Asst. Professors	Associate Professors	Professors	Others
254	88	84	82	-

2.2 No. of permanent faculty with Ph.D.   204

2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year

Asst. Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V
205	161	37	104	12	53	-	-	254	318

2.4 No. of Guest and Visiting faculty and Temporary faculty

111   30   134

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended Seminars/ Workshops	217	125	63
Presented papers	132	85	18
Resource Persons	56	35	14

2.6 Innovative processes adopted by the institution in Teaching and Learning:

- The teachers employ all the latest available teaching methods in order to make the curriculum interesting and their teaching effective. University, being a research oriented university, mainly adopts discussion method and lecture method as the main pedagogy to teach foundations and fundamentals. However, sufficiently advanced topics are given as assignments to encourage students to do literature survey and come up with book and article reviews.

- *Interdisciplinary approach to studies* adopted by our departments is an innovative approach to learning things from various aspects.

- *Multipronged approach to teaching and learning* using several facilities such as the use of Internet, Multimedia, Online talks, journal club, discussions, case studies etc. very well advantage the teaching and learning processes.

- The focus of learning *has become more students centred* now. The Schools/ Departments *conduct weekly seminar either based on recent developments in the relevant area* or on recent articles or reports. Students are made to critically review the article/reports/case laws as well as to comment on it which enhances their presentation skill and critical thinking. *For promoting collaborative learning*, group discussions/group presentations are also initiated.

- *Strong practical orientation* is achieved through practical classes, laboratory work, field studies and projects in-department or in industry or in advanced institutions.

- Students are *encouraged to take up a project idea* and implement it so as to develop their understanding through project based learning. *The linkages with the scientific institutes* offer opportunities for the science students to get internship in those institutes. These internships, in turn, *help them to get on-hand training and experience on various sophisticated equipment and research type experiments*.

- CUSAT being a science and technology, major thrust is given to ensuring industry interactions. *Resource persons from industry are engaged to enrich the courses* for relevant modules in several programmes.

- Students are encouraged to pursue new developments in their subject of interest. The University provides ample opportunities for learners to acquire latest knowledge *by interacting with eminent scholars, scientist and engineers in their field and also to visit their laboratories*.

- Ample facilities have been provided in the campus for the students to enhance their professional skills. This includes *Ship –in – Campus which is a unique* very *high tech lab facility, well equipped laboratories, 24x7 computer and internet facilities, scientifically well equipped Research Vessel etc*.

- The linkages with the national/international research institutes and other educational institutions provide *students exchange programme*. This will be of great help to them in furthering their store of knowledge and expertise in their respective fields. Academic development will be enhanced because of this.

2.7 Total No. of actual teaching days during this academic year   158

2.8   Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions)

- Total internal assessment is now made applicable to all PG programs.
- Make up examination in all PG courses has been introduced.

2.9   No. of faculty members involved in curriculum restructuring / revision/ syllabus development as member of Board of Study/Faculty/Curriculum Development workshop:

226

2.10 Average percentage of attendance of students :
88

2.11 Course/Programme wise distribution of pass percentage:

Title of the Programme	Total no. of students appeared	Distinction %	I %	II %	Pass %
M.Tech-Electronics	22	95.45%	4.54%	-	100%
M.Tech – Polymer Technology	9	66.66%	33.33%	-	100%
M.Tech (CASAD)	19	31.57%	68.42%	-	100%
M.Tech-Opto Electronics & Laser Technology-ISP	10	90%	10%	-	100.00%
M.Tech –CIS	17	82.35%	17.64%	-	100.00%
M.Tech (Software Engg)	18	50%	50%	-	100.00%
M.Tech -Ocean Technology	5	80%	20%	-	100.00%
M.Tech-Marine Biotechnology (NCAAH)	6	66.66%	33.33%	-	100.00%
MCA–DCA	54	50%	50%	-	59.25%
MCA–CUCEK	57	35.29%	67.70%	-	59.64%
5 Yr integrated M.Sc Photonics	17	71.42%	28.57%	-	82.35%
M.Sc Electronics Science	18	41.66%	58.33%	-	66.66%
M.Sc-Oceanography	9	44.44%	55.55%	-	100%
M.Sc –Statistics	21	50%	85.71%	14.28%	66.66%
MA Hindi	28	21.42%	78.57%	-	100%
M.Sc -Applied Chemistry	22	86.36%	13.63%	-	100.00%
M.Phil Marine Chemistry	8	100%	-	-	100%
M.sc Mathematics	24	41.17%	58.82%	-	70.83%
M.Sc HydroChemistry	11	100%	-	-	100.00%
PG Diploma in Communication Eng	11	20%	60%	20%	90.90%
M.sc Marine Geology	8	75%	25%	-	100.00%
M.Sc Marine Geophysics	12	18.18%	81.82%	-	91.66%
M.Sc-Physics	27	56%	44%	-	92.59%
M.sc Instrumentation	8	42.85%	57.14%	-	87.50%
M.sc Biotechnology	13	100%	-	-	76.92%
M.Phil Life Science	6	100%	-	-	100.00%
MA Applied Economics	15	60%	40%	-	100%
MBA-SMS	60	25%	75%	-	66.67%
MBA(PT)	17	8.33%	91.66%	-	70.58%
MBA(TT)	33	4.54%	95.45%	-	66.67%
MBA(IB)	37	7.40%	81.48%	11.11%	72.97%

German(Certificate/diploma/integrated diploma)	9	-	57.14%	42.85%	77.77%
Italian(Certificate/diploma/integrated diploma)	4	-	75.00%	-	75.00%
French(Certificate/diploma/integrated diploma)	25	52.00%	40.00%	8.00%	100.00%
M.Sc – Marine Biology	18	83.33%	16.67	-	100.00%
M.Sc – Meteorology	9	42.85%	57.14%	-	77.78%
M.Sc – Environmental technology	11	81.81%	18.18%	-	100.00%
M.Tech Specialization in wireless Technology	18	55.56%	33.33%	11.11%	100.00%
M.Tech Mechanical Engg. With specialization in Thermal Engg	17	41.17%	58.82%	-	100.00%
5 Year BBA,LLB(Hons)	46	12.90%	80.64%	6.45%	67.39%
M.Tec -Industrial Catalysis	9	85.71%	14.28%	-	77.78%
M.TECH CIVIL (GEOTECHNICAL) ENGINEERING	18	94.44%	5.56%	-	100%
M.TECH Software Systems	18	83.33%	16.66%	-	100%
LL.M	29	-	27.58%	72.41%	100.00%
5 year B.Com LL.B.(Hons.)	38	-	85.71%	14.28%	73.68%
M.Phil Hindi	10	60.00%	40.00%		100.00%
M.Phil Applied Chemistry	9	100.00%	-	-	100.00%
M.Sc Industrial Fisheries	19	44.44%	55.56%		94.73%
M.F.Sc course in Seafood Safety and Trade	19	50.00%	50.00%	-	84.21%
M.Tech Atmospheric Sciences	1	100.00%	-	-	100.00%
Integrated Diploma in French/German/Japanese/Russian	5	-	100.00%		80.00%
P.G Diploma in Translation and Functional Hindi	25	-	84.00%	16.00%	100.00%
LLM One Year (IPR)	14	-	100.00%	-	78.57%
B.Tech Marine Engineering (Residential Programme)	71	66.67%	33.33%	-	38.02%
B.Tech Instrumentation Technology	36	52.63%	42.10%	-	52.77%
B.Tech in Polymer Science & Engineering	23	31.57%	68.42%	-	82.60%
B.Tech Naval Arch. & Ship Building	44	46.87%	53.12%		72.72%
B.Tech SCHOOL OF ENGINEERING	770	21.83%	98.92%	1.07%	48.18%
B.Tech CUCEK	395	18.22%	80.20%	1.56%	48.60%

2.12   How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

- IQAC is ensuring all classrooms of the university are equipped with modern technologies to facilitate smart class.
- Ascertained the facilities in the departments including laboratory facilities which help the teaching learning processes and provided the essential requirements under RUSA funding.
- IQAC was instrumental in the appointment of faculty members.
- The revision of syllabi is strictly monitored and more than 95% of the courses has been revised.
- Steps have been taken to introduce academic audit in the university

2.13 Initiatives undertaken towards faculty development

Faculty / Staff Development Programmes	*Number of faculty benefitted*
Refresher courses	20
UGC – Faculty Improvement Programme	5
HRD programmes	15
Orientation programmes	8
Faculty exchange programme	2
Staff training conducted by the university	6
Staff training conducted by other institutions	32
Summer / Winter schools, Workshops, etc.	5
Others	82

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	549	119	-	185
Technical Staff	195	164	1	62

Criterion – III
Research, Consultancy and Extension

3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

- Initiatives had been taken to encourage research activities of newly appointed faculty members. Seventy one new project proposals have been submitted to various funding agencies during this year.
- IQAC was involved in enhancing research and laboratory facilities with the funding of RUSA.
- The research output of each department has been analysed.
- Introduces academic audit in the university

3.2 Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number	28	82	34	33
Outlay in Rs. Lakhs	1825.26	3808.01	1068.89	719.9

3.3 Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	0	5	1	-
Outlay in Rs. Lakhs	0	9.5	2.97	-

3.4 Details on research publications

	International	National	Others
Peer Review Journals	411	33	-
Non-Peer Review Journals	125	78	-
e-Journals	12	18	-
Conference proceedings	328	225	-

3.5 Details on Impact factor of publications:

Range | 0.073 - 8.893 | Averag | 2.0354 | h-index | 67 | Nos. in SCOPUS | 369

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant Sanctioned (in Rs.)	Received Amount (in Rs.)
Major projects	3-7	DST, KSCSTE, UGC, MNRE, DRDO, DBT, MoES, NRB, DAE-BRNS, ISRO, ICSSR, INSA, CSIR, DECC, IFCPAR, Kerala State Govt.	81,00,27,614	22,49,95,553
Minor Projects	1-2	UGC, KSCSTE, NASI	10,32,600	2,17,243
Interdisciplinary Projects	2-7	DAE-BRNS, DBT-IYBA, DECC, DST-SERB, ICSSR, KSCSTE, ISRO, MoES, SAC, UGC-BSR	37,27,61,642	4,30,30,326
Industry sponsored	3-5	Cochin Shipyard	25,00,000	21,25,000
Projects sponsored by the University/ College	1	IUCIPRS	2,00,000	2,00,00
Students research projects *(other than compulsory by the University)*	-			
Any other(Specify)	-	-		
Total			**1,18,65,21,856**	**27,03,88,122**

3.7 No. of books published   i) With ISBN No. | 39 | Chapters in Edited Books | 13 |

ii) Without ISBN No. | - |

3.8 No. of University Departments receiving funds from

UGC-SAP | 8 | CAS | 1 | DST-FIST | 4 |

DPE | | DBT Scheme/funds | 3 |

3.9 For colleges

| Autonomy | ☐ | CPE | ☐ | DBT Star Scheme | ☐ |
| INSPIRE | ☐ | CE | ☐ | Any Other (specify) | ☐ |

3.10 Revenue generated through consultancy in Rs. 84.07 lakhs

3.11 No. of conferences organized by the Institution

Level	International	National	State	University	College
Number	11	35	1	-	-
Sponsoring agencies	UGC, TEQIP, Satyendra Nath Bose National Centre for basic Sciences, KSCSTE and DRDO	TEQIP, USIEF, UGC, KSCSTE, CDSL,UGC,DST etc	University		

3.12 No. of faculty served as experts, chairpersons or resource persons 155

3.13 No. of collaborations International 1 National 1 Any other

3.14 No. of linkages created during this year 21

3.15 Total budget for research for current year in lakhs : Rs.7115.74 lakhs

From Funding agency Rs.3977.66 lakhs

From Management of University/College Rs. 3137.38 lakhs

3.16 No. of patents received this year

Type of Patent		Number
National	Applied	2
	Granted	2
International	Applied	-
	Granted	-
Commercialised	Applied	-
	Granted	-

3.17 No. of research awards/ recognitions received by faculty and research fellows of the institute in the year

Total	International	National	State	University	Dist	College
34	6	23	5	-	-	-

3.18 No. of faculty from the Institution who are Ph. D. Guides

195

and students registered under them

1289

3.19 No. of Ph.D. awarded by faculty from the Institution

129

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF 325   SRF 228   Project Fellows 37   Any other 12

3.21 No. of students Participated in NSS events:

University level 362   State level 550

National level 4   International level -

3.22 No. of students participated in NCC events:

University level -   State level -

National level -   International level -

3.23 No. of Awards won in NSS:

University level 2   State level -

National level -   International level -

3.24 No. of Awards won in NCC:

University level | - | State level | -

National level | - | International level | -

3.25 No. of Extension activities organized

University forum | 183 | College forum | -

NCC | - | NSS | 23 |

Any other :

133 Schools visited and 10874 School Students participated in the **One Day Attachment Programme (ODAP)** of Centre for Science in Society (C-SiS) of the University during 2016-17. This is a programme which aims at acquainting children with various science principles and experimental set up, through interactive study materials. A well planned programme for batches of students from one or two schools which reserve the facilities of C-SiS for a day. The following programmes also conducted at CSiS

1) **STDP: Science Talent & Total Capacity Development Programme:-** A month long Summer vacation programme for school children conducted during the month of April and May.
   a) No of Students who attended : 379 (April and May).
   b) No of Programmes   : 2
2) **Sastra Sameeksha:** A one day Science orientation programme for School children from across kerala held during 15th – 19th May, 2017.
   a) No of Students attended: 184
3) **A "One day Training Programme in Experimental Optics' for High School Teachers** in Schools and Colleges held on 12th November, 2016.
   a) No of teachers who Participated : 20

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

1. Conducted Science and Total Capacity Talent Development Programme (STDP) (Mid-summer Programme) by Centre for Science in Society (C-SiS) an intensive programme meant for school children with special aptitude for science (April & May 2017). A total of 379 Students were participated in this programme.
2. Conducted One Day Attachment Programme (ODAP) by C-SiS- a programme that aims at acquainting children with various science principles and experimental set up, through interactive study materials. A well planned programme for batches of students from one or two schools which reserve the facilities of C-SiS for a day. 133 Schools visited and 10874

School Students participated in this programme during the year.

3. A science propagation programme - "Inculcate" had been conducted for selected school children during 20-23 May 2017, sponsored by the Kerala State Science and Technology Museum and Priyadarshini Planetarium.

4. Conducted Sasthrayaan- CUSAT Open House.

An Open House programme -*Sasthrayan* had been conducted in January 2017 to showcase its research output to the people representatives and the public including college and school students. During these days university departments and research centres were open for public. Further 30 exhibition stalls were arranged and working models, charts, prototypes, various products developed in the university were displayed and explained its significance and applications to the public. More than 500 people representatives as well as students were participated in the programme.

5. The Student *Programme for Excellence in Experimental Design* (SPEED) which was conducted at CUSAT during 14th to 18th February 2017, under the STARS programme of Kerala State Council for Science, Technology and Environment(KSCSTE) provides opportunity for Prathibha scholars to interact with Eminent Scientists and introducing them to reputed laboratories and academic institutions in the State.

6. Extension activities conducted by NSS :

(a) <u>CERT:</u>

Cochin University started a **'Cochin University Emergency Response team' (CERT)** to ensure safety in the campus. The **'HELP FOR HELPLESS EDUCATIONAL AND CHARITABLE SOCIETY'**provided the necessary training for a team of 10 volunteers from SOE in**'Basic Life Supports and Emergency Handling Procedures'**,on the 17th and 18th of August, 2016. The event was inaugurated by the Vice Chancellor, Dr. J Letha. Dr. Manu P.Viswam, along with NSS SOE coordinated the event. The aim of the programme was to create an emergency response team in the university,which will be able to strike in action when required. The classes comprised of sessions about various safety measures to be taken during post-accident scenarios, when a person affected with seizure and the basics of giving CPR (cardio pulmonary resuscitation).

(b) **Road Safety Photo contest:**

NSS CUSAT, in association with the **Motor Vehicle Department**of Ernakulum has been organizing "**Third Eye 2015**", since 2015, which is a Road Safety Photo Contest. On31[st]August 2016, Mr. ShefiqB, Motor Vehicle Inspector, gave an overview of the project for the new volunteers.
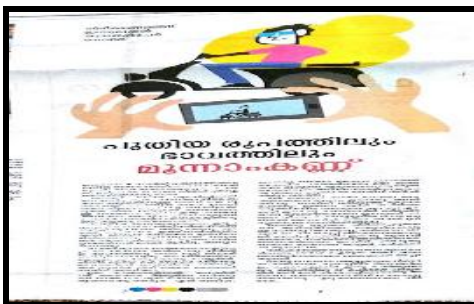
(c) **Yoga day:**

As a part of International Yoga Day, NSS CUSAT celebrated a Yoga Day on the 21[st]of June, from 9.00 am to 10 am under the guidance of Ms.Smitha, in the NSS hall, CUSAT. The class was attended by NSS volunteers as well as employees of CUSAT. The theme for this year's Yoga Day was, "**Yoga for Health**". As the theme suggests, the Yoga class organized by us was fruitful in achieving equilibrium between one's mind and body. We also believe, hope & pledge to spread the message of practicing yoga regularly to maintain a good health.

(d) **Onachanda:**

On 8th September 2016, NSSvolunteeres set up a small stall of vegetables, in coordination with **VFPCK, Ernakulum**. The Onachanda was very beneficial to the employees of CUSAT.

(e) A VISIT TO AN OLD AGE HOME:

On 24-9-2016, 50 NSS volunteers visited the**Abhaya old age home** near North Kalamassery. The members wholeheartedly welcomed us with their innocent smiles. Our volunteers shared breakfast with them and interacted with them. Different group activities were conducted and all were participated in the programmes.

(f) PROTECT YOUR MOM:

The **Protect Your Mom** Campaign (**PYM**) 2016, organized by CUSAT was held in the department of theElectronics and Communication department on the 29thof September. Dr. J.Letha delivered the Presidential address. The inaugural lampwas lit by the famous **cine artist Ms. Rima Kallingal**.
Later the students conducted a **Pink Walkathon** and many donated their hair to make a cancer patient smile.

(g) CANCURE:

On October 22nd, a **cancer awareness and detection program** was conducted in the CUSAT campus byNSS CUSAT in coordination with **CANCURE Foundation**, **Ernakulum general Hospital and IMA,** Kochi. The program had various segments including a seminar on breast cancer and a cancer detection camp inthe Department of Mathematics. The head of the department of mathematics lead the programme.
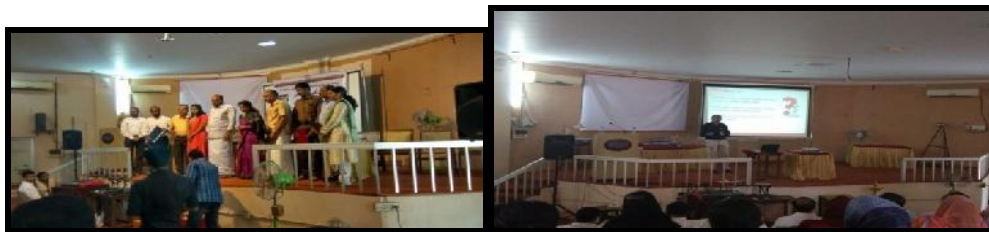
(h) Blood Donation Campaign:

On 22-11-2016, as a part of corporate responsibility initiative, NSS SOE in coordination with **HDFC bank** conducted a blood donation campwith **Amritha Institute of Medical Sciences**, Ernakulum.where 45 students donated blood. A participation certificate was issued to all donors.The students who donated their blood were appreciated by the HDFC officials and the principal of SOE.

(i) ONE RUPEE COLLECTION:

One rupee collection was inaugurated by our beloved Principal **DrM.R.RPanicker.**This one rupee collection would be of great use to raise funds in emergency situations .For instance, if an accident happens and we need a financial backup immediately, we can blindly rely on this collection rather than struggling to arrange funds then. We took this initiative in order to tackle such situations. This helped our unit to give a notable amount to Karun, who met with an accident this year. NSS SOE unit will continue to raise funds through this programme for the rest of its period.

(j) Electrical Safety documentary:

KSEB made a documentary on electrical safety with on screen & off screen support from NSS SOE on the 7th of January 2017.

(k) Road Safety Week:

NSS SOE organized various programmes related to Road Safety week from 9th to 17thof January.Volunteeresprovided awareness to students in SOE about **Road Safety** and **Traffic rules**. On 11ththeyorganizeda rally, and a few discussions, debates etc.

(l) PADHAYATHRA:

The **SuchithwabodhanayajanamVinjanayathra** was organized byNSS SOE in coordination with **MithradhamRajagiri** on January 14, 2017. The students marched with the clean city campaign team from CUSAT main gate to poly technique,kalamassery. Father Mejo CMI welcomed the team and Dr. DhanniaT.,Programme Officer, delivered the felicitation.

(m) Homeo-Medical camp:

On the 14thof March, a Homeo-medical camp was organized in connection with the outburst of chickenpox in SOE. NSS volunteers distributed the pre cautionary medicines to all members of the CUSAT family without it affecting their regular class workswith the help of the **Govt. Homeodispencery,Vishnupuram,Cheranalloor**.

(n) PALLIATIVE CARE:

The Palliative Care Unit in the Ernakulum **General Hospital** gave training to NSS volunteers from 18th to 25thof March, 2017. 8 students participated from the SOE Unit.

(o) BACK-A-THON:

A back-a-thon, as the name suggests, is like a walk-a-thon, only backwards. On behalf of **World Water Day**, upholding the motto- "**walk a mile for pure water**", a backathon was organized on 22ndMarch 2017. NSS volunteers made placards and charts, which were placed on various parts of the college. . Volunteers holding placards and calling out slogans walked backwards up to CUSAT amenity junction. Later, they took an oath that they will protect water sources and will never waste a drop of water.

(p) **NYLP Award:**

National Youth Leadership Programme (**NYLP**) Award On 29.03. 2017
Best NSS Unit for NYLP Award College of Engineering, Munnar

(q) **ANTI DRUG CAMPAIGN- STREET PLAY:**

NSS SOE organizedan Anti-drug campaign in co-ordination with the **Excise department, Ernakulum Unit** from March 28thto 31st. In connection with this we organized a 3 days awareness camp through Street Plays and a one day seminar on the 31st of March.30 students participated in the programme.

The Vice chancellor flagged off the event on the 28thof March at 10 am. On the first day, street plays were organized in & around CUSAT campus and at SCMS college, Premier Jn.. On the 2nd day, street plays on themes against the use of drugs and narcotic substances were organized at Rajagiri Engineering College Kakkanadand Model Engineering College Judgemukku.

The Street play was organized and performed by NSS volunteers CUSAT and we strongly believe that we were able to send a strong message to all the communities we visited in connection with the campaign on these 3 days.

As the part of the Anti drug Campaign, a one day seminar was conducted on the 31st of March, for the NSS volunteers from Ernakulum district. It was inaugurated by **Mr.Narayanan, S I of Excise department**.The classes were handled by **Dr.Radhakrishnan** from Thrissur Medical college and **Mr.Job V T** from the Excise Department.

Through this seminar we could educate NSS volunteers from Ernakulum district about the nuances of the use of drugs and narcotic substances. The seminars were quite informative and capable to leave a strong message in the minds of the students, not onlyabout the use of drugs but also in sharing of information with other students in the coming days

(r) ZERO TOLERANCE TO CORRUPTION:

Corrupted employees are a curse of the nation.An**Anti-Corruption Campaign** was conducted by the **Vigilance and Anti-corruption Bureau of Ernakulum district** unit(R&T) in association with NSS SOE on 1st April. The program also introduced a new app for reporting corruption anonymously**.**

(s) SAFE TO EAT:

In association with the Vegetable and Fruit Promotion council of Kerala, NSS CUSAT started to supply **organic vegetables**to CUSAT employees.The program is conducted on all Thursdays and is coordinated by the NSS volunteers of CUSAT.

(t) <u>VittiyaSaksharataAbhiyan(VISAKA):</u>

The NSS unit of SOE did various activities so as to promote a digital economy under the campaign VITTIYA SAKSHARATA ABHIYAN (VISAKA). The NSS volunteers were first informed about the campaign and orientation sessions were organized in classes. Students were asked to encourage and motivate all payers and payees to use a digitally enabled cashless economic system for transfer of funds.

Volunteers worked in households in Kottuvalli, to bring them in to **digital mode**. They tried to convince people to use digital modes of payment. The use of debit/credit cards as well as apps like paytm was highly encouraged. NSS volunteers also visited shops (in **Thrippunithura, Kottuvalli and near SOE, CUSAT**) and interacted with the owners. Shopkeepers were made aware of the use of swiping machines as well as how those with ATM cards can conveniently use them for transactions.

As part of VISAKA, a digital awareness documentary on the topic, **" Be SmartGo Digital**", directed **by P.S.Rajeev,** was shot.

There are no pre-defining tasks: it is left up to the volunteers to provide service in any way that is feasible. NSS volunteers live with the members of the community and learn from them. Since experience teaches better than any other teacher, this help them realize the hardships in our society and inspire them to help the needy. Social service is the best of all services. There is a huge difference between being human and human being. Let us all hope that one day every human being will be humane and work for the betterment of each other and the society.

(u). HarithaKeralam:

On the 8[th]of December,NSS SOE unit took part in the HarithaKeralam mission organized by the Kerala Government. The NSS volunteers cleaned the courtyard infront of their classrooms and planted trees to make the campus green and ecofriendly.

(v) AGRICULTURE FARMING:

As part the special camp programme the NSS students ploughed and prepared the land for planting the seed under the guidance of Mr Prasad. The plant material for the grow bags were made and the Grow bags were filed with planting materials.The ploughed field was mixed with cow dung as the main fertilizer and plant different types seed in the bags

(w) World Environment day:

The World Environment Day was celebrated on the 5th of June, 2016 in the campus. **Cine actor Mr. Raffiqe,**whoacted in Kammattippadam inaugurated the function by planting a sapling of "Lakshmitharu", an anticancer plant. NSS programme officer Dr.DhanniaT., Ex- PO of NSS, Mr. Unni A.M., Equal opportunity cell Director Dr. SasiGopalan, director of IRA CUSAT,Dr.Saju,HOD of the Mechanical department, Dr. Biju N. and more than 20 students also participated in the programme along with the volunteers of NSS SOE. The volunteers distributed saplings of different plants to the children. The television channel, Kochu TV shot the programme and telecasted it to create awareness among children about the importance of The World Environment Day.

On the 12[th]of August 2016, to spread awareness about the need of physical exercises, all students and teachers of SOE, along with the Principal joined hands and spirits to run a short distance inside the campus during the lunch interval.

As a part of thePrime Minister's '**Swatch BharathMission',** on 12th August 2016, volunteersof NSS SOE along with the Rotary Club of Kochi,got together and cleaned a huge partof the CUSAT campus. They conducted a rally for the awareness of proper removal of waste materials from our surroundings

(x) VANAPARVAM 2017:

On 21-01-2017, NSS volunteers of our unit participated in a biodiversity seminar named "**VANAPARVAM 2017**", conducted at **PonnakudamBhagavathy Temple**, Thevakkal, in coordination with the Centre for Environment & Development. This was a rare experience for them, where they learned aboutthe role of forests in preventing global warming and many other issues we face today.

(e) Vegetable farming:

In Association with the Youth Welfare department of CUSAT, NSS Volunteers started farming vegetables near the CUSAT restaurant on March 18th, 2017. The program was inaugurated by Ernakulum District Collector **Mr. Mohammed Y Safirulla**. Kalamasserry Municipality Chairperson Ms.Jessy Peter planted a sapling.

(f) WORLD FOREST DAY

NSS SOE unit celebratedWorld Forest Day on 21stof March, 2017. Principal **M.R.R Panicker** inaugurated the program by planting a sapling in the campus. Later, the volunteers planted 10 saplings all around the campus.

(g) Plastic Free Campus

Dry waste campaign inauguration in the PS &RT auditorium on 23-8-2017 at 11 am.

NSS SOE started a **new cleaning programme**where the volunteers collected plastic waste from different parts of the campus and handed it over to the Kudumbasree organization.

(h) Cleaning:

We were given a task to clean Fortkochi beach. We cleaned the beach along with volunteers of other social organisations. It was a good experience for all of us.

7. Extension activities conducted by Dept of Youth Welfare

a) The Department of Youth Welfare observed July 14th as Tree Care Day under the Swachh Bharat Abhiyan Scheme at various parts of CUSAT to observe a day for caring the trees in the campus. The slogan of the programme was 'no more plants; rather we care what we planted'.

b) Anti Ragging Awareness Programme

to prevent the menace of ragging from the campus conducted awareness programme for seniors from 22nd July, 2016 onwards. Sri. N Anilkumar, Principal District and Sessions Judge inaugurated the University level anti-ragging campaign at SMS Auditorium on 22.07.2016. Sri. P. Unnirajan IPS, Superintendent of Police (Ernakulam Rural) delivered key note address. At Kuttanad campus, The National Service Scheme of Cochin University College of Engineering Kuttanad in association with Kuttanadu Legal Service Committee has conducted anti-ragging awareness classes on 29.07.2016. This year, University had conducted various sessions among students and made conscious effort to aware each and every senior student of the University regarding the consequences of ragging. A written and signed affidavit was collected from every student at the time of admission mentioning that they will not engage in any ragging related activities. Various committees, i.e., University level monitoring committee, anti ragging committee and anti ragging squads at department level were also formed as per the directions of the Honorable Supreme court and UGC.

Criterion – IV
Infrastructure and Learning Resources

4.1 Details of increase in infrastructure facilities:

Facilities	Existing	Newly created	Source of Fund	Total
Campus area	182183 m^2	0	UGC, DST, State Govt	182183 m^2
Class rooms	164	4	MHRD	167
Laboratories	191	3	UGC, MODROBS, University Fund, State Govt	194
Seminar Halls	33	1	MHRD	34
No. of important equipments purchased ($\geq$ 1-0 lakh) during the current year.	409	65	DST,DBT,MoES, KSCSTE, UGC, SERB, RUSA etc.	474
Value of the equipment purchased during the year (Rs. in Lakhs)	31,25,54,989	Rs.5,56,86,294		Rs.36,82,41,283

4.2 Computerization of administration and library

Admission, Financial and Examination processes are computerised. The admission test is online now.

Computerization/ Digitalization of University Central Library:

- Automated library with Open source software KOHA
- Library Collection is available through the Web OPAC
- Union Catalogue which upholds bibliographic description, locations and holding information about all the department libraries functioning under CUSAT
- CUSAT library has IP enabled access to online journals under the UGC Infonet Digital library consortium, and INDEST consortium set up in the campus network and the library itself subscribes number of e-journals
- CUSAT library is a member of DELNET (Developing Library Network) which offers services like union catalogue of books, e-books, journals, e-journals; interlibrary loan of books; photocopies of journal articles through document delivery service, etc

- Federated searching tools-EBSCO discovery service which enables a user to search all the library resources in a single query, including books, ebooks, subscribed electronic resources are available on the library website.
- Library website provides access to all the subscribed electronic resources, including, electronic databases, e-journals, journal archives, e-books, OPAC, union catalog, etc. In addition, the library website provides access to the institutional wealth of CUSAT
- Institutional Repository project using DSpace named Dyuthi is started for digitalization of thesis and research papers of CUSAT Community.
- Bibliographic Information System for Science & Technology (BISSAT) established, namely yuj available at yuj.cusat.ac.in
- Media repository for archiving video of CUSAT events available at media.cusat.ac.in
- Traditional Digital Library is available at dyuthi.cusat.ac.in/TKDL
- Established the ETD lab and digitized around 2000+ theses and uploaded into the shodhganga project . Gives assistance for research scholars in making use of the antiplagiarism software-Urkund
- The library modernization project of Rs.8.3 crores funded by the State Government is progressing well; Rs 5.3 crores is allotted to construct a new building for the library and e-journals and databases are procured for Rs.1 crore. The remaining amount will be used to provide better service to students

4.3 Library services:

	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	263901	38800718	7219	5461570	271120	44262288
Reference Books	59032	4451060	808	479989	59840	4931049
e-Books	2161	-	274	-	2435	-
Journals	6929	144441	253	196155	7182	340596
e-Journals	29036	-	1	5956	29037	5956
Digital Database	58	-	-	-	58	-
CD & Video	2599	106559	24	-	2623	106559
Others (specify)	19912	515639	444	214151	20356	729790

4.4 Technology up gradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Depart-ments	Others
Existing	1808	51 labs	1181	36	62	309	1570	
Added	60	3 labs	25		4	20	22	
Total	1868	54 labs	1206	36	66	329	1592	

4.5 Computer, Internet access, training to teachers and students and any other programme for technology upgradation (Networking, e-Governance etc.)

CUSAT possess a state of the art, reliable and scaleable campus wide network which support the information needs of the user community. All the departments in the main campus are interlinked with a fiber optic backbone. Also the Lakeside Campus 15 Km away and the pulincunnu campus 70 km away from the main campus are connected to the main network. The campus network is seamlessly integrated to the internet through broad band connectivity available to the user community on 24x7 basis. The campus is connected to the National Knowledge Network (NKN) using one Gbps backbone connecting major institutions in India.

In collaboration with Dutch government through MHO-Co-operation project state-of-the art fibre optic backbone was designed, implemented and operated in the university during the period 1997-2004. This project played the baseline for our further endeavours in the area of ICT and related technologies.

Currently CUSAT uses integrated enterprise level applications for most of the activities of an academic organization. This include applications for Administration, Examination, Student admissions, Finance management, Accounts management, Recruitment, Management of different programs like conferences, seminars and symposiums, Digital Library and e-Learning. We have a broad vision for an ERP system for academics as an outcome of all our activities in this direction. We have identified the technology components, implemented the solutions and we take care of operations management of these systems completely in-house in a cost effective manner.

The Kerala State Government had envisaged e-governance as a prerequisite to increase the efficiency. The proposed e-governance system of State Government will process University wide transactions on a single software system with multiple functional systems that are designed to streamline almost every aspect of how the institution operates. This system can provide deep visibility to governing bodies at University, Higher Education Department and student level to analyze their performance and hence gear up for future requirements.

To develop the Software, Department of Higher Education appointed Infinite Computer Solutions as the Software Development Agency and IIITM-K as Project Monitoring and Controlling Unit. The entire project life cycle comprises of phases such as System Study, SRS documentation, System Design, Coding, Testing and implementation as well as user training. Currently the project has completed the documentation and review of the existing system study (AS-IS), TO-BE data gathering and FRS/SRS data gathering. SRS documentation is currently in progress.

4.6 Amount spent on maintenance in lakhs :

i) ICT/ Equipments

| 673.81 |

ii) Campus Infrastructure and facilities

| 411.92 |

iv) Others

329.52

Total :

1415.25

Criterion – V
Student Support and Progression

5.1 Contribution of IQAC in enhancing awareness about Student Support Services

IQAC was involved with various decision making bodies in the university and the following student support facilities have been initiated:

- Support to physically disabled students has been enhanced. Ramps have been provided at all buildings. The disabled friendly toilets are making available at all building as part of funding under RUSA scheme.
- Students residential facilities are being enhanced by
   a) Constructing a hostel for Boys at the Thrikkakara campus.
   b) Constructing phase II of the Ladies Hostel for B-Tech students at the Thrikkakara Campus (Construction of balance portion of Ground Floor and First Floor)

5.2 Efforts made by the institution for tracking the progression

IQAC collects and analyses the students enrolment and their progression and it is as follows

For post graduates programme,

- Percentage of students graduating in minimum stipulated time is more than 85%

- Percentage of students placed is more than 18%

- Percentage of selected for higher studies is more than 15%

5.3 (a) Total Number of students

UG	PG	Ph. D.	Others
4611	2059	1216	227

5.3 (b) No. of students outside the state   1207

5.3 (c) No. of international students   10

5.3 (c) Students Profile

Gender Profile (All years all courses combined)

	Number of students	Percentage
Men	5286	64.44%
Women	2918	35.56%

Students Enrolment   (All years all courses combined)

Students Enrolment Last Year (2015-16)						Students Enrolment This Year (2016-17)					
General	SC	ST	OBC	Physically Challenged	Total	General	SC	ST	OBC	Physically Challenged	Total
4290	711	54	2710	23	8016	3815	702	63	3815	13	8131

Demand ratio-   UG - 1:20   PG - 1:14

Dropout % - 1.05

5.4 Details of student support mechanism for coaching for competitive examinations (If any)

University Employment Information & Guidance Bureau conducts coaching classes for UGC-CSIR JRF/NET, Bank Probationary Officer /Management Trainee /Clerical Examinations and eminent faculties handle the sessions.

No. of students beneficiaries   125

5.5 No. of students qualified in these examinations

NET   50   SET/SLET   0   GATE   49   CAT   2

IAS/IPS etc   1   State PSC   20   UPSC   5   Others   25

5.6 Details of student counselling and career guidance

Placement Cell of the University regularly conducts career counseling programmes. University Employment Information & Guidance Bureau which is a joint venture of the University and the National Employment Service Department has been providing service to the youth in the following areas:

(1) Providing career information on educational/research/scholarship facilities etc. (including facilities in overseas countries)

(2) Special coaching classes for candidates belonging to socially backward communities for various competitive examination of the State/Country

(3) Conducting short duration orientation training for certain specialized courses/careers

(4) Conducting model interviews, group discussions and personality development courses, including Career Group Talks; (5) publishing of periodic talks for the student community.

5.7 Details of campus placement

On campus			Off Campus
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
52	1259	441	55 (as per data available)

5.8 Details of gender sensitization programmes

5.9 Students Activities

5.9.1 No. of students participated in Sports, Games and other events

State/ University level [350]   National level [55]   International level [-]

No. of students participated in cultural events

State/ University level [24]   National level [2]   International level [-]

5.9.2 No. of medals /awards won by students in Sports, Games and other events

Sports : State/ University level [25]   National level [2]   International level [-]

Cultural: State/ University level [55]   National level [4]   International level [-]

5.10 Scholarships and Financial Support

	Number of students	Amount in Rs.
Financial support from institution	190	2,57,96,327
Financial support from government	884	4,96,96,970
Number of students who received International/ National recognitions	28	8,60,521

5.11 Student organised / initiatives

Fairs   : State/ University level [15]   National level [3]   International level [3]

Exhibition: State/ University level [1]   National level [3]   International level [0]

5.12 No. of social initiatives undertaken by the students [206]

5.13 Major grievances of students (if any) redressed:

- One of the major grievances of students was regarding inadequate residential facilities even though university have six ladies' hostels and eight boys' hostels. To resolve this issue, with the support of RUSA University is enhancing students' residential facilities by
  a) Constructing a new hostel for Boys at the Thrikkakara campus.
  b) Constructing the phase II of Ladies Hostel for B-Tech students at the Thrikkakara Campus (Construction of balance portion of Ground Floor and First Floor)
- The laboratory facilities is being enhanced by
  a) setting up a *State of the Art Research Laboratory* at an estimated cost of ₹ 240 crore, with the support of State Government of Kerala utilizing funds mobilized through its Kerala Infrastructure Investment Fund Board (KIIFB).
  b) augmenting equipments with the support of DST PURSE and RUSA funding

Criterion – VI
Governance, Leadership and Management

6.1 State the Vision and Mission of the institution

The University's basic philosophy and goals find eloquent expression in its Coat of Arms emblazoning the motto *"Tejaswinavadhitamastu"* which in essence means *"may the wisdom accrued defy us both the teacher and the taught and percolate to the Universe in its totality"*, which in essence means "may learning illumine us both" (the teacher and the taught).

The University shall have the following objectives as its mission:

(i) to prosecute and promote research in applied science, technology, industry, commerce, management and social science for the advancement of knowledge and for the betterment of society;

(ii) to provide facilities and offer opportunities for graduate and post-graduate education in applied science, technology, industry, commerce, management and social science by instruction, training, research, development and extension and by such other means as the University may deem fit;

(iii) to devise and implement programmes of education in applied science, technology, industry, commerce, management and social science that are relevant to the changing needs of society, in terms of breadth of diversity and depth of specialization;

(iv) to serve as a centre for fostering co-operation and exchange of ideas between the academic and research community on the one hand and industry on the other;

(v) to organise exchange programmes with other institutions of repute in India and abroad with a view to keeping abreast of the latest developments in relevant areas of teaching and research.

6.2 Does the Institution has a management Information System

- The University is using state of art technologies for communication, administration, examination and teaching learning process enabled by campus- wide optical fibre backbone and 1 Gbps NKN connectivity.
- The e-governance project of the State Government will process University wide transactions on a single software system with multiple functional systems that are designed to streamline almost every aspect of how the institution operates.

- Administration has a structured set of bodies with roles well defined, attending to each and other needs of the University.
- Robust Finance Management System is in place, while newer steps are contemplated in e-governance and in the concept of paper-less office.
- The University had already digitized the pay roll and accounting systems.
- In addition, the Biometric Attendance System which is developed by M/s KELTRON Ltd, is being used effectively in the University.
- CUSAT is under the watchful eyes of an effective Surveillance System. The examination halls in various departments, valuation camps, administrative building and other major points inside the campus are under surveillance.
- The internet connection with high bandwidth has been provided to all the Departments/Schools in the University which act as a major factor in improving quality of teaching.

6.3 Quality improvement strategies adopted by the institution for each of the following:

6.3.1 Curriculum Development

- As in previous years, this year too meticulous follow up was initiated to restructuring of syllabi.
- Decided to start integrated MSc programmes in the disciplines Physics, Statistics, Mathematics, Applied Chemistry
- Designing of B Voc courses Data Analytics is in pipe line
- Started a new academic programme MSc Computer Science with specialisation in Soft Computing.
- Started new academic programme in MSc Instrumentation
- Initiatives are taken to start Massive Open Online Courses (MOOC)
- Steps have been taken to include add on courses in the syllabi

6.3.2 Teaching and Learning

- Steps have been taken to introduce academic audit in the university
- All classrooms of the university are equipped with modern technologies to facilitate smart class.
- Ascertained the facilities in the departments including laboratory facilities which help the teaching learning processes and provided the essential requirements under RUSA funding.
- Appointment of faculty members is ongoing continuously.
- The revision of syllabi is strictly monitored and more than 95% of the courses has been revised.

6.3.3 Examination and Evaluation

- Total internal assessment is now made applicable to all PG programs.
- Make up examination in all PG courses introduced.
- Also, the proposal to streamline the academic calendar limiting the conduct of the University Examinations to the window period of November and April/May only with a view to avoid loss of teaching hours is also under active consideration.

6.3.4 Research and Development

- A proposal to set up a *State of the Art Research Laboratory* at the CUSAT at an estimated cost of ₹ 240 crore, utilizing funds mobilized through its Kerala Infrastructure Investment Fund Board (KIIFB) had been submitted to the State Government for consideration and approval.

- The university is augmenting the research facilities using the DST PURSE funding. The Department of Science and Technology (DST) had released an amount of **₹635.75 lakhs** towards first installment of the sanctioned grant of **₹17crores** to CUSAT under 2nd phase of PURSE grant, which is an incentive award scheme with a focus of rejuvenation of research in the University sector.
- During this period, 135 research projects which are being funded by various agencies are ongoing. Total grant received for research projects during the period 2016-17 is ₹. 2326.02 lakhs.
- Presently 12 University Departments/Schools are getting financial assistance under Special Assistance Programme (SAP) from UGC and Fund for Improvement of S&T Infrastructure (FIST) programme from DST.
- CUSAT@2020 is a plan which focus on development of new research programmes, curricular reforms to encourage multidisciplinary and interdisciplinary learning, development of new pedagogical practices, patenting, incubation, content development and establishment of new Centres of Excellence by utilizing Rs.5 Crores of the state plan grant. CUSAT is the only University in Kerala to receive additional grants on the recommendation of Planning Board for Vision 2020 for Special Project Report submitted by University.
- Two new centres of excellence viz. Centre of Excellence in Advanced Materials and Centre of Excellence in Marine Biology, Microbiology & Biochemistry had been established in 2016-17 by integrating the resources available with the major research groups within the science departments. ₹50lakhs has been allotted and is being utilized for the infrastructural development of these centres.

- The RUSA Directorate has sanctioned of ₹20.00 crore for CUSAT RUSA Scheme as first installment of the grant. Of the total funding ₹8.00 crore is earmarked for augmenting research facilities in the research laboratories.

6.3.5 Library, ICT and physical infrastructure / instrumentation

- New library block is got ready for occupation. Plans are being made to put the new space to the best use.
- UGC had sanctioned ₹29 Lakhs of financial assistance from the 12th five year plan to the Department of Hindi of the University for establishment and infrastructural developments viz language lab, and for the library upgradation activities of the department and now has released an amount of Rs.12.5 Lakhs
- A proposal to set up a *Academic Complex and State of the Art Research Laboratory* at the CUSAT at an estimated cost of ₹ 240 crore, utilizing funds mobilized through its Kerala Infrastructure Investment Fund Board (KIIFB) had been submitted to the State Government for consideration and approval.
- Initiatives are taken to construct two hostels for students under the RUSA funding.

6.3.6 Human Resource Management

- The faculty members are encouraged to participate in conferences, interact with experts in the relevant fields in order to further enrich research, deliver invited talks in national and international conferences. In this connection, the University departments/schools as well as research centres regularly conducts workshops/seminars/ conferences/ lecture series by eminent academicians/scientists etc.
- Training programme for non teaching staff are regularly conducted by the Centre for Employee Empowerment and Skill Acquisition Centre.

6.3.7 Faculty and Staff recruitment.

- During 2016 and 2017, 42 appointments were made to fill the vacant faculty positions.
- Nearly 100 appointments were made to fill the vacant non teaching positions.

6.3.8   Industry Interaction / Collaboration

- A Centre for Innovation, Technology Transfer and Industrial Collaboration (CITTIC) is functioning very actively in the campus

- 16 start-ups/ enterprises are initiated by the students

- The university have active research and academic collaborations with many industries and research centres in India and abroad.

- For instance, University have academic and research collaboration with **Cochin Shipyard Limited (CSL)**. Experts from CSL are involved in teaching core naval architecture subjects for students of our

- Also with the support of ₹25 lakhs from CSL, a Ship Model Making Lab has been set up in the Dept of Ship Technology.

- By giving recognition to several well-established premier research institutions in the country and *the Southern Naval Command of Indian Navy*, the University has brought within its reach the resources available in these institutions for the use of the academic community. Recognized and offers degrees for all professional courses conducted by 11 institutions under Southern Naval Command (SNCHQ), Indian Navy, in Diving technology, Naval weapons, Aeronautics, Underwater science & technology, Nautical Science and Tactical Operations.

- The University has signed MoU with the following foreign and domestic institutions primarily focusing student/faculty exchange. Some MoUs are related to training, Industrial collaboration.

Sl.No.	Name of the Institution / Industry	Date of Agreement
1	OLD DOMINION UNIVERSITY, NORFOLK, VIRGINIA, USA	22/01/2018
2	NIIGATA UNIVERSITY, JAPAN (INSTITUTIONAL LEVEL)	01/12/2017
3	NIIGATA UNIVERSITY, JAPAN (FACULTY LEVEL)	01/12/2017
4	SHIMANE UNIVERSITY, JAPAN MOU (SUPPLEMENTARY)	29/11/2017
5	NIPPON KAIJI KYOKAI (CLASS NK), TOKYO, JAPAN	17/08/2017
6	NANSEN ENVIRONMENTAL AND REMOTE SENSING CENTRE (NERSC), BERGEN, NORWAY + NANSEN ENVIRONMENTAL RESEARCH CENTRE INDIA, COCHIN (NERCI)	29/05/2017
7	YAMAGATA UNIVERSITY, JAPAN	09/05/2017
8	STEEL AND INDUSTRIAL FORGINGS LTD(SIFL), ATHANI, THRISSUR	30/03/2017
9	COCHIN SHIPYARD LIMITED (CSL)	20/01/2017
10	KERALA STATE INDUSTRIAL DEVELOPMENT CORPORATION LTD (KSIDC), THIRUVANANTHAPURAM	03/10/2016
11	SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY (SCTIMST), THIRUVANANTHAPURAM	08/08/2016
12	SHIMANE UNIVERSITY, MATSUE, JAPAN	24/05/2016
13	SFO TECHNOLOGIES PVT LTD, NEST, KAKKANAD	25/04/2016
14	MULTIMEDIA UNIVERSITY, MALAYSIA	12/04/2016
15	LOUISIANA STATE UNIVERSITY, LOUISIANA	08/09/2015
16	THE PLASTICS AND RUBBER INSTITUTE OF SRILANKA (PRISL),SRILANKA	28/07/2015
17	TROY UNIVERSITY, USA	28/04/2015
18	VSB TECHNICAL UNIVERSITY OF OSTRAVA, CZECH REPUBLIC	21/01/2015
19	(UNIVERSITY OF KENT AND DEPARTMENT OF ELECTRONICS, CUSAT) UKIERI SPLI-SITE PHD PROGRAMME	24/01/2014
20	UNIVERSIDAD JUAREZ AUTONOMA TABASCO (UJAT), MEXICO	01/04/2013

6.3.9 Admission of Students

- Admission to various courses offered by the University is through Common Admission Test (CAT) conducted during April-May, each year.
- The University receives applications for various courses, **online**
- The admission test had been made ONLINE from the 2016 academic admissions onwards.
- A separate website *http://www.cusat.nic.in* is maintained exclusively for this purpose. The said web site contains link for online registration, brochure, details of all courses, eligibility requirements and lowest rank admitted in last year's CAT. Online help is offered through this website.
- All communications thereafter, such as issue of hall ticket – downloading and printing, result declaration, rank enquiry, registration of options and allotment position are conducted through web.
- The students from different states and abroad also apply for admission to these courses and 10% seats in most of the UG programmes are reserved for NRI's. On an average, we receive over 35,000 applications.

6.4 Welfare schemes for

a) **Welfare Schemes for Teaching as well as Non Teaching Staffs:**

- Pension and Family Pension
- Medical Reimbursement Facility
- Leave Travel Allowance
- Cochin University Employees Society and Employees Welfare Fund are centred around the financial needs of the staffs

b) **Welfare Schemes for Students:**

- Students Aid Fund: a scheme for giving financial assistance to the deserving students with low financial background but with good academic records.
- University is providing post doctoral fellowship of Rs.25,000/- per month with contingent grant of 20,000/- p.a
- The University is providing 150 research fellowships at a rate of Rs.12,500/- per month in the first two years and Rs.15,000/- per month for the next 1and ½ years with a contingent grant of Rs 10,000/- per annum
- Monthly stipend of Rs 5000/- is being provided to students undertaking projects outside University departments / schools.
- Department of Youth Welfare is a formal platform in the University to design and implement youth policy which includes the issues related to motivation, participation,

promotion and socio-economic and cultural settings within which young people grow up. The Department has organized a lot of programmes in the year 2016-17 for the purpose of building confidence, creativity and compassion among the students.

- The University have a Students Amenity Centre in which the Dept of Youth Aelfare as well as Dept of Physical Education is functioning. In addition, a multi-Gym, Tennis court, Shuttle courts, Basketball courts Playground for football and Cricket. Yoga Centre, Health Centre and a Mind Clinic are also available for students. There are eight men's hostels and six women's hostels for meeting the residential needs of students.

6.5 Total corpus fund generated

> **Rs.86,16,25,628/-**

6.6 Whether annual financial audit has been done

Yes	√
No	

6.7 Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	No		Yes	IQAC
Administrative	√	Kerala Government Audit Department	√	Audit Wing of University

6.8 Does the University/Autonomous College declares results within 30 days?

For UG Programmes   Yes [√]   No [ ]

For PG Programmes   Yes [ ]   No [√]

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

- The University publishes Examination Calendar every year consisting of the deadlines on submission of proposals, internals, attendance statement and also the details on commencement of examinations, tentative date for publication of results etc. As the Head of the Department is the Chairman of the valuation camp ex-officio, pre-valuation processes are commenced soon after the examination in the department itself enabling result publication faster.

- Total internal assessment is now made applicable to all PG programs.

- Make up examination in all PG courses introduced.

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

Not Applicable

6.11 Activities and support from the Alumni Association

CUSAT finds itself in an enviable position of having its Alumni holding very important positions in many academic, research, industry and government organizations. The support provided to them in their studies is gratefully remembered and they have shown great willingness to support CUSAT in its development journey.

Individual university departments have alumni associations and these alumni are actively involved in the activities in the following way:
- by giving their feedback on course which helps in syllabus restructuring.
- by offering placement drives.
- giving financial support to augment the academic and infrastructure facilities in the concerned departments.
- Some alumni are included in the IQAC

6.12 Activities and support from the Parent – Teacher Association

- Every year before the commencement of classes, an orientation programmes has been conducted for the first year students and their parents.

- The University, in association with the PTA of UG departments has introduced a provision in the CUSAT web site- **Students Academic Information System**

[*http://wais.cusat.ac.in/index.php*]- to publish all the results of students, both internal and externals, which can be accessed by all parents to follow the performance of their wards on a continuous basis.

6.13 Development programmes for support staff

- Training programme for non teaching staff are regularly conducted by the Centre for Employee Empowerment and Skill Acquisition Centre.
- This was aimed in better office management to increase efficiency and well as induct more transparency in procedures

6.14 Initiatives taken by the institution to make the campus eco-friendly

CUSAT has a green and eco friendly campus. The engineering department of the university is in overall charge of maintaining the campuses.The "Greening" activities include rainwater harvesting, plantation / felling of trees / shrubs, etc and further maintaining medicinal plants, creating and maintaining scenic ambience, removal of litter and waste and associated works. Also NSS as well as Dept of Youth Welfare have made a good contribution to this cause, mainly by students joining hands in social movements.

Criterion – VII
Innovations and Best Practices

7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

- A vision plan **CUSAT 2020 - 5 Year Perspective Plan for Academic Excellence-** CUSAT@2020 has been prepared and this plan focuses on development of new research programmes, curricular reforms to encourage multidisciplinary and interdisciplinary learning, development of new pedagogical practices, patenting, incubation, content development and establishment of new Centres of Excellence by utilizing Rs.5 Crores of the state plan grant.

  Two new centres of excellence had been established in 2016-17 by integrating the resources available with the major research groups within the science departments. They are

  i. *Centre of Excellence in Advanced Materials*
  ii. *Centre of Excellence in Marine Biology, Microbiology & Biochemistry*

- A proposal had been prepared and submitted to the Kerala State Government to set up a *State of the Art Research Laboratory* and *academic block* at an estimated cost of Rs.240 crore, utilizing the funds mobilized through its Kerala Infrastructure Investment Fund Board (KIIFB). The Government has approved the proposal and the university has initiated the works related to it.

- A *Stratosphere Troposphere (ST) Radar facility* has been set up at Advanced Centre for Atmospheric Radar Research (ACAAR) in the University is to lead the nation in research and development activities in Atmospheric Science and Technology and to develop sophisticated observational and modelling capabilities for the accurate prediction of Indian monsoon system. Department of Science and Technology, Government of India, has awarded Rs. 200 Million Indian Rupees (20 Crores) for establishing this facility to conduct studies on Troposphere -Stratosphere coupling processes over the monsoon region.

- Activities of Technology Incubation Centre (TBI) has been strengthened and 14 companies has been started by the students/Alumni of CUSAT at CITTIC

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

- Courses have been structured to start integrated MSc programmes in the disciplines Physics, Statistics, Mathematics, Applied Chemistry and preparations are ongoing to commence these programmes from 2018 academic year onwards.
- Designing of B Voc courses in Data Analytics is in pipe line
- Started a new academic programme MSc Computer Science with specialisation in Soft Computing.
- Started new academic programme in MSc Instrumentation
- Steps are being taken to start Massive Open Online Courses (MOOC)
- Academic auditing has been done internally. Steps are being taken to do it externally with effect from 2017-18 academic year onwards.
- Appointment of faculty members is ongoing as per schedule.
- CUSAT@2020 plan has been prepared which focus on development of new research programmes, curricular reforms to encourage multidisciplinary and interdisciplinary learning, development of new pedagogical practices, patenting, incubation, content development and establishment of new Centres of Excellence.
- Proposal has been prepared and submitted to RUSA directorate for funding of Rs.20 crores.

7.3 Give two Best Practices of the institution

I. **A centralized, single window for admission to all courses of CUSAT is being held towards attracting best talent from all over India** – around 40% seats are open for students from all other states - this approach aims at providing a metropolitan outlook to candidates and helps to inculcate professional agglomerate of mixed culture. **Admission to various courses offered is through ONLINE Common Admission Test (CAT)** conducted during April-May, each year. A separate website *http://www.cusat.nic.in* is maintained exclusively for this purpose.

II. **All PG programmes in the University are having total internal assessment evaluation** with effect from 2015 academic admissions onwards. This facilitates the announcement of results immediately on the completion of the examinations. Thus students benefit from the teaching programmes concurrently when they are evaluated for their skills and knowledge in respective fields.

7.4 Contribution to environmental awareness / protection

- Cochin University of science and Technology in collaboration with ITC launched *'Well-being out of Waste'* (*WOW*) programme at campus as an initiative towards introduction of **Green Protocol** in the campus. All schemes including WOW project under "Green Protocol" initiative will be completed shortly. The NSS Unit of CUSAT leads the project. As part of this initiative, the trained housekeepers of CUSAT collect and segregate plastic, paper and metal waste and hand over to ITC. In return ITC will supply note books and stationery which will be distributed to the deserving students.

- Two water recharge systems harvesting water including rain water is already put to use from which water is taken for the day to day activities of the campus. The capacity of these ponds are 1,00,000 litres each.

- Another water recharge system to harvest water including rain water of the capacity of 50,000 litres has been recently completed in the main Campus. This is expected to alleviate the water shortage faced by the University to a great extent.

- Three other facilities for rain water harvesting are put in use at all the three campuses of the university.

- Steps are already been taken for installing Solar panel in the Administrative building for taping Solar Energy for meeting the energy requirements needed for the functioning of the whole building.

- As part of the up-gradation of CUSAT campus and to promote a cost effective energy option, the University had submitted a proposal to Govt. of Kerala to get a financial assistance of Rs.8.5 crores to set up a 1 MWpRoof Top Solar PV based system.

7.5 Whether environmental audit was conducted?

Yes   Y   No   ☐

7.6 Any other relevant information the institution wishes to add. (for example SWOT Analysis)

SWOT Analysis of CUSAT which was prepared at the beginning of the academic year 2016-17:

The Strengths, Weaknesses, Opportunities and Threats for the University are stated and explained below.

STRENGTHS

- **Unitary Status:** The absence of a large number of Affiliated Colleges as a Unitary University with jurisdiction all over Kerala gives CUSAT the unique chance to concentrate on its Teaching and Research Programs and maintain good control over its quality and performance.

- **Being a Science and Technology University**, the University is able to focus its attention on Teaching and Research of high quality in the area of Science and Technology.

- **High Reputation:** CUSAT has a very high reputation; this helps it in getting good teachers, students and projects. This helps in further enhancing its reputation.

- **Geographical Location:** Located in Cochin, a fast developing city with excellent road, rail and air connectivity provides CUSAT with locational advantage for growth and development.

- **Research and Publication:** The University has an excellent track record in research and publication. It has been rated among the top 10 Universities in terms of publication in India.

- **Research Infrastructure:** From its inception, CUSAT because of its focus on research in science and technology has been able to develop an enviable research infrastructure through government grants and various projects including international collaborations.

- **Variety of Departments and Centres:** CUSAT has a wide variety of Departments ranging from Marine sciences, Technology, Engineering to Social Sciences, Law and Languages. This variety helps in multi-disciplinary approaches and cross functional learning.

- **Collaborations:** There has been a tradition at CUSAT to encourage collaborations. Just as Kerala has been receptive to traders and religious groups from various countries over the ages, CUSAT has encouraged visitors to collaborate with it. As a result, CUSAT was the only University in India selected for the prestigious MHO collaboration with the DUTCH Government. This project helped the University to strengthen its research infrastructure.

- **Good Administrative Structure:** As provided in the CUSAT Act, the University has developed a good administrative structure for governance and support system for the academic and research programmes that it undertakes. A good mechanism has been set in place to improve the quality parameters involved in teaching and research using the Internal

Quality Assurance Cell (IQAC). The IQAC has helped CUSAT in gathering quality related data and providing the much needed feedback to the University administration for necessary actions.

- **A large well placed supportive Alumni base**: CUSAT finds itself in an enviable position of having its Alumni holding very important positions in many academic, research, industry and government organizations. The support provided to them in their studies is gratefully remembered and they have shown great willingness to support CUSAT in its development journey.

- **Good Placements**: The very good placements that the students graduating from CUSAT receive may be cited as the single most important reason for attracting so many students to the courses offered by CUSAT.

- **Large campus in prime locality with a lot more space for expansion**: The large campus that we have in Kalamassery gives us the opportunity to develop and grow as and when opportunities present themselves.

- **Affordable and quality Education:** A salient feature of CUSAT is not only the quality education it provides in Science, Engineering, Technology and Management but also the low fees it charges for its programmes. By doing this, being a State University it fulfils its social obligations and provides access to higher education more inclusive. On an average, the payback period for a CUSAT pass out is less than their salary for four months.

- **Sensitivity to social needs:** CUSAT has always involved itself in finding Science and Technology based solutions to the problems faced by the society. For instance, the National Centre for Aquatic Animal Health that helps farmers in aquaculture, in fighting fish diseases and so on. Another example is the Centre for Science in Society which tries to engage in promoting the fun and experimental way of learning science among school children. It also promotes use of science to solve day to day problems.

OPPORTUNITY

- **Universities from Developed Countries searching for partners in India:** Of late, we have been witnessing a constant flow of Universities from abroad searching for partners in India to collaborate with. They have been expressing their desire to collaborate with CUSAT.

- **More learners:** As time passes we are seeing more learners/students seeking admission for courses in CUSAT. In the early days only students from Kerala sought admission to CUSAT. However, presently students from other States of India as well as from other countries are showing keen interest in pursuing their studies at CUSAT.

- **Better quality teachers willing to join CUSAT:** The recent advertisements for Faculty positions in the University received tremendous response and it shows that very good quality teachers and researchers are willing to join the service of CUSAT.

- **More industry sponsored Projects:** The Industry has been showing increased interest in using the expertise available at University for conducting sponsored research which would be of commercial value for them. Many professors from CUSAT have come up to take this challenge and do such sponsored projects.

- **More Research scholars with JRF available:** With the expansion of the education system in India there is increased need for teachers. The pay package for teachers has become better. This has lead to many good students showing keen interest in research and later taking up teaching jobs. Most of these students are also able to get scholarships such as JRF from funding agencies.

- **I.C.T. Based education system usage opportunities at lower cost:** The ICT infrastructure put in place with a fibre optic backbone with servers and an internet gateway for the campus has created an environment where ICT can easily be used in the teaching-learning process.

- **E-Libraries and E-Resources:** The new generation students are   IT savvy and love to use their smart phones and laptops. Many of the research publications, books and other learning materials are available in electronic format and providing this to students is a flexible and more cost effective option.

- **MOOC:** The massive open online courses are the latest in the teaching-learning area. This presents great opportunities for both supplementing the class room learning at the University for our students as well as providing MOOCs for other learners and enhancing reputation of CUSAT.

- **Inter department Collaboration:** The cutting edge research today takes place at the interface of disciplines rather than purely inside a discipline.   This presents great opportunities for inter-departmental collaborative research. At CUSAT we are already on this path. The International School of Photonics Department is an example where Physics and Electronics have collaborated. The Radar Centre is the outcome of the collaboration between Electronics and Atmospheric Sciences.   The future presents many such opportunities.

WEAKNESSES

- **Decreasing Financial Resources from the Government:** Being a state funded University we have got used to receiving the full financial support from the State Government for salary and both the State and Central Government for infrastructural creation under plan. As has happened world over and in India the funding from the State and Central Governments have not kept in pace with the requirements of the University. This has resulted in short falls and budgetary deficits. Many of the Universities have in the short term responded to this lack of funds by not recruiting teachers and not expanding. In CUSAT also this fund crunch has been felt very badly.

- **Vacant Faculty Positions:** As stated above, the fund crunch has lead to non-recruitment of teachers. This has affected quality adversely especially because during these times the

student intake has always been increased to generate more revenue as well as to fulfil social commitments. This is now slowly being reversed, with recruitments being done.

- **Lack of Funds for New Hostels:** A completely residential University of higher learning can reach greater heights more easily.   At present, due to of lack of funds for building new hostels we have to make do with the ones that we already have, which can serve only a portion of our requirements.

- **Necessity to follow Government financial procedures for fund usage:**   Being a government funded University we are forced to follow the financial procedures of the Government. These are not designed for educational institutions and are very cumbersome. Following these procedures results in delays in purchases and projects. A lot of time of the researcher and principal investigator goes into compliance of the regulations.   The capacity to use funds and timely completion of projects are also adversely affected because of this.

- **More students from the state only:** Being a State University we focus traditionally on students from the State only. Slowly and steadily this trend is changing and we are realising that students from other areas also contribute to learning in class and social development at the University. But even then, the current admissions do not have enough representations from outside Kerala in most courses.

- **Most students are locals and day scholars:** With the setting up of so many educational institutions, more students get admission to institutions in their locality and are comfortable with that. Very rarely do students want to venture out of their local area and study at an institution far from their home living in private hostels outside. This has resulted in many students for the programmes being day scholars. Getting day scholars for extracurricular activities and programmes on holidays is a difficult task.

- **Lack of visibility among the general public:** The general public is more concerned with Engineering and medical education only. They are not very aware of the other courses available in Universities like CUSAT. This lack of awareness and visibility of CUSAT among the general public affects student intake. Because of lack of funds we are not able to engage in big and expensive advertisement campaigns to increase this awareness.

THREATS

- **Private Deemed Universities with more funding:**   With opening up of the education sector Private Deemed Universities and institutes with more funding, more publicity and advertisement, charging very high fees have put up attractive infrastructure to attract the rich students.   This is luring the top segment of the students both in terms of economy as well as calibre. This forces Universities like CUSAT to cater to economically weaker students.

- **Students demanding better physical facilities:** Because of the overall improvement in the standard of living the expectations of the students regarding physical infrastructure is increasing day by day. This is a threat to government institutions like CUSAT which are

not able to upgrade the physical facilities such as buildings and furniture periodically. On the other hand, the challenges faced because of the expectations of students of academic front are not at all increasing. This is the area where CUSAT has its strength. If it were increasing CUSAT could have easily matched this expectations where as many private universities could not.

- **Disruptions and loss of working days:** The society at large today faces more disruptions due to strikes and declaration of holidays. The impact of this is also felt by us at CUSAT since we lose many working days to such disruptions.

- **More choices for all:** Unlike the past where there were only a few Universities and centres of higher learning and the learners had only very limited choice, today they have many institutions to choose from. This has made the situation highly competitive.

- **Other institutions offering similar courses:** After seeing the initial success of Institutions such as CUSAT in developing and running new courses which are successful many other institutions have copied the courses and are running similar courses which are in high demand, posing threat to the University.

- **Entry of Foreign Universities:** With the entry of foreign universities into the country it is expected that they will try to skim the cream of the students and leave the bulk of the average students to be taught by State Universities.

Having conducted the SWOT analysis the University proposes to build on its strength and use its strengths to make the best use of the opportunities which are listed above. The strengths will also be used to counter the threats posed. The task of identifying the weaknesses has been done, efforts will be made to reduce these weaknesses to the minimum and contain their ill effects on the working of the University.

8. Plans of institution for next year

- Invite eminent scientists/ academicians from foreign universities which are having rank, preferably, within 200 in the world university ranking.

- To commence the works in connection with the set up of *State of the Art Research Laboratory and academic block* at an estimated cost of ₹ 240 crore, utilizing funds mobilized through its Kerala Infrastructure Investment Fund Board (KIIFB) had been approved by the State Government.

- Provide Research Seed Money for young teachers

- Conduct of Academic Audit in the University Departments/Schools by external experts

- Commence the new integrated MSc programmes with effect from 2018 academic admission onwards

- Commence a new programme BVoc Business Process and Data Analysis
- Development of a Data Acquisition Web Portal for IQAC.

- Provide financial assistance to students for participating in International Seminars
- Carry out physical verification of Equipments/ Instruments
- Develop a web Portal for collection and analysis of Student Feedback
- Strengthen faculty development activities
- To continue the filling up of vacant faculty positions.

Sd/-
Dr.K.Girish Kumar
Director IQAC
Signature of the Coordinator, IQAC

Sd/-
Dr.J.LETHA
Vice Chancellor
Signature of the Chairperson, IQAC

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