



SELF STUDY REPORT

FOR

3rd CYCLE OF ACCREDITATION

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY KOCHI KERALA

STATE PIN- 682022

682022

www.cusat.ac.in

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1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

Cochin University of Science and Technology (CUSAT), formerly known as University of Cochin, came into being in 1971 through an Act of the Legislature to impart world class education and research in frontier areas of Science and Technology in the State of Kerala with a motto “*Tejaswinavadhitamastu*” which means “may learning illumine us both, the teacher and the taught”. Established as a unique unitary type University, it has come a long way in positioning itself as one of the premier educational Institutions in the country during the past 50 years, as it is celebrating its golden jubilee in the year 2021. Starting in small way in 1971 with a few Departments and about 500 students, University now has three campuses spread over 226 acres with 1,98,493 sq.ft. built up area: two of which in Cochin and one at Pulinkunnu, Alappuzha, the 'rice bowl' of Kerala, about 65 km south of Cochin. The academic structure comprises of ten Faculties viz. Architecture, Engineering, Environmental Studies, Humanities, Law, Marine Sciences, Medical Sciences & Technology, Science, Social Sciences and Technology, 30 teaching departments/centres, over 8000 students and 460 faculty members. 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.

The University has many accomplishments over these years which include accreditation by NAAC with ‘A’ grade and NIRF university ranking 44. Also, University figured consecutively in the times higher education (THE) world ranking in the past few years and bagged the Chancellor's Award for Best University in the State, instituted by the Govt of Kerala, three times in last four years and Engineering programmes of the University are accredited by NBA. All these achievements helped the University to receive substantial funding from DST FIST, UGC SAP, RUSA, TEQIP, DST PURSE etc. and to develop academic collaboration with reputed national and international institutions. Besides, the University also received major support from Govt. of Kerala under KIIFB project.

Starting from 1996-97, CUSAT became international in student admissions and faculty exchanges. The emergence of CUSAT as the single University to be chosen for long term financial assistance by the Government of Netherlands under the MHO programme eloquently testifies to its proud record of academic achievements and strengths.

Vision

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 deify 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 aims to become an Institution of Global Standard by continuously improving its quality of academic activities, taking up research and innovation in the frontier areas and by ensuring conducive state-of-the-art infrastructural facilities.

Mission

CUSAT will continuously strive to generate a human resource of global competence by imparting most modern knowledge and training to its student community and to take up Research and Development activities in the frontier areas so as to contribute positively to the progress of the society and the Nation. The University shall have the following objectives as its mission:

1. to encourage and promote research and innovation in applied science, technology, industry, commerce, management and social science for the advancement of knowledge and for the betterment of society;
2. 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, innovation and extension and by such other means as the University may deem fit;
3. 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;
4. 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;
5. to organize exchange programmes with other institutions of repute in India and abroad with a view to keeping abreast of the latest innovation and developments in relevant areas of teaching and research.

1.2 Strength, Weakness, Opportunity and Challenges(SWOC)

Institutional Strength

1. The only Science and Technology University in Kerala
2. 116 academic programmes across 30 Departments/Centres in niche areas of science, technology, social sciences and humanities
3. Outcome Based Education is implemented in all these 116 programmes. 75% of courses have components which enhance employability, entrepreneurship and skill development.
4. 90% of departments have recognitions/ funding through research projects, UGC SAP and DST FIST, TEQIP, DST PURSE etc
5. Part of an innovative drive to improve academic infrastructural facilities through KIIFB- an SPV model of financing designed by the State Government.
6. Faculty with high quality publication with a University H index of over 100
7. Admissions done through a Pan India Common Admission Test which is conducted at more than 75 centres in India and overseas.
8. Remarkably good Faculty Student Ratio leading better student mentoring
9. 100% automation in Examination system leading to quick release of results
10. Innovative practice of giving seed money to newly recruited teachers for their research work
11. 7000 sqft Technology Business Incubation facilities with 93 start -ups incubated during the last five years.
12. 103 MoUs and 869 collaborations with national and international research laboratories/ institutes

13. Fully ICT enabled classrooms and 100% wifi enabled campus with 1 GBPS Internet support
14. Decentralized and participative management with representation from government, academicians, experts from industries, local bodies, students etc
15. Wide network of well-placed alumni who support the development of the University
16. Location in Kochi - commercial capital of Kerala
17. Interdisciplinary Research and inter-disciplinary academic programmes
18. Consistently figures in the Times Higher Education World Ranking Figures and in the top 100 institutions as per the National Institutional Ranking Framework (NIRF) of the Government of India.
19. Winner of the prestigious Chancellor's Award for the best University in the State thrice, i.e., in 2017, 2019 and 2020.

Institutional Weakness

1. Being a state university with domicile regulations, success in attracting diverse talent from other states is limited
2. Dependence on Government funding for sustenance
3. Restrictions to infrastructure expansion due to land constraints.
4. Being predominantly a PG University, limited scope for Student Progression to Higher Education
5. Conservative approach being a government university compared to more aggressive styles of private counterparts
6. The university needs more teaching staff to meet international benchmarks of Teacher Student Ratio
7. Being a state university, need approvals and clearance from the government for policy changes and new initiatives
8. Stringent government rules resulting in reduced flexibility in administration.

Institutional Opportunity

1. From being the most reputed science and technology university in the state, potential to emerge as an Institution of eminence in India in line with Government of India's new initiative
2. To start new programmes and revamp existing curriculum in line with New Education Policy
3. To strengthen the Make in India and Atmanirbhar Initiatives by introducing new programmes and courses aimed at national requirements
4. Make the best of out the Startup India initiative by scaling up existing incubation centres and actively promoting entrepreneurship
5. Can benefit immensely from the Digital India flagship programme of the Government of India started with a vision to transform India into a digitally empowered society and knowledge economy.
6. The Rs. 20000 Crore initiative of the state government to convert Kerala into a Knowledge economy
7. The State Government's policy of keeping Higher Education as a top priority for the next five years
8. Initiatives by the state government to promote industry academia collaboration and start-up ecosystem
9. Availing more prospective funding opportunities (such as CSR funding) for community projects
10. Potential to tap into the emerging skill development market opportunities by aligning with policies of Central and State Governments,
11. Scope for funded faculty-research projects at national and international levels

12. Scope for enhanced alumni engagement in academic and research projects

Institutional Challenge

1. Attracting the best students from outside Kerala regions
2. Direct competition from deemed universities and autonomous colleges
3. Attracting diverse national and international faculty and promoting diversity
4. Governmental regulation on academic and administrative freedom
5. Documentation of all the academic and non-academic activities on campus
6. Ensuring national level accreditation for all programmes on campus
7. Limited accommodation facilities available for outstation students
8. Improving accommodation for faculty in the campus
9. Providing a global learning ambience to students/ scholars/ faculty
10. Achieving 100% placement for the registering candidates

1.3 CRITERIA WISE SUMMARY

Curricular Aspects

CUSAT has a wide range of academic programmes which suit the professional and academic needs of the aspirants. In accordance with the vision, University conducts 116 academic programmes mainly in science and technology and also in Law, Social Sciences and Hindi.

Many region-specific programmes including Naval Architecture and Ship Building, Polymer Science and Rubber Technology and marine related subjects such as Marine Biology, Marine Geology, Oceanography, Atmospheric Science, Industrial Fisheries and Marine Engineering are the specialty of CUSAT. New interdisciplinary programmes are developed according to changes in emerging global trends and needs and 15 new programmes are initiated in the last 5 years which include programmes like Forensic Science, Mobile Phone Application Development, Data Science and Artificial Intelligence.

Outcome Based Education (OBE) is in practice and Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (COs) are clearly defined across programmes.

Curriculum is revised regularly with a focus on professional development, employability and skill development of students and to incorporate current developments in relevant areas and societal needs. Syllabi of 100% of the programmes are revised in the last five years. 75.59% of courses have components which enhance employability, entrepreneurship and skill development.

University promotes higher level vocational education by commencing three vocational programmes (B.Voc and 2 M.Voc) and also promotes entrepreneurial culture among students through its Technology Business Incubators. All these initiatives are in tune with Make in India and Skill India programmes of Govt. of India.

All academic programmes are conducted in Choice Based Credit System so that students get maximum flexibility in selecting the courses as envisaged in National Education Policy. 1208 new courses were introduced in last five years, which is 40.84% of the total courses.

155 value added courses are offered for imparting transferable and life skills in students and 42.36% of the students participated in these courses. 3766 students have undertaken field/ research projects/ internships during the assessment period, which is 44.33% of total students.

CUSAT has a structured feedback mechanism for collecting and analysing feedback from the stakeholders-students, teachers, employers, alumni and parents towards improving the curriculum and teaching learning process.

Teaching-learning and Evaluation

CUSAT is always in the forefront to provide world class education to its students through its well established teaching learning process by the highly qualified faculty members.

Admissions are done through a well-administered mechanism **Common Admission Test** which is conducted at more than 75 centres in India and overseas. All norms of Government are strictly followed in the admission process. 1:20.81 is the average demand ratio across all programmes.

Moreover, supernumerary reservations are for Transgenders, Jew Candidates, Children of Indian Workers in Gulf Countries, Lakshadweep Candidates, Sports Quota, Economically Weaker Sections, Kashmir Migrants, candidates from Fishermen Community etc. Additionally, seats are reserved for staff of Indian Navy in B.Tech Naval Architecture and Ship Building and for Kerala Police Academy in M.Sc Forensic Science. 73.21 of reserved seats were filled, excluding supernumerary in the last five years.

Remedial classes are being taken to slow learners. Experiential Learning, Assignments, Guided Projects and Participative Learning are a part of the curriculum.

Students are exposed to industrial realities and to interesting facts and breath-taking technologies through study tours and industry visits. Assignments, practical sessions, seminars and guided projects consisting of hands-on implementations of theoretical aspects in subject are an integral part of the curriculum.

During the pandemic affected years, the University seamlessly conducted online education. MOODLE is the Learning Management System used in the University.

Faculty Student Ratio is remarkably good, 1:19.1. 74.94% of the sanctioned seats of teachers are filled. 460 faculty members are in the University at present, and many of them have exposure from world renowned institutions. Average teaching experience of the teachers is 9.26 years.

On an average, 82.79% teachers received awards/recognitions/fellowships in the last five years.

Mentors are assigned to all students for their academic and other issues. Mentor Mentee ratio is 1:18.

The result declaration time has improved from 48 to 28 days in the last five years. Examination system is 100% automated and the Examination Management System has already been implemented. 100% continuous internal

evaluation is in practice for PG programmes and attainment of PSO's and CO's are evaluated. Average pass percentage is 81% across all programmes.

Research, Innovations and Extension

CUSAT always creates a conducive atmosphere for research activities by providing necessary infrastructure and support facilities to the researchers. The University has structured guidelines for quality research and the research facilities are enhanced periodically to support the faculty and Research Scholars.

The University provides seed money to its newly recruited teachers for commencing their research work. On an average Rs.42.44 lakhs per year and Rs. 2 Crores in the last five years, was given to the new teachers. 725 JRFs, SRFs, Post Doctoral Fellows, Research Associates and other research fellows enrolled during the last five years. For supporting research, the University has well established research labs with sophisticated instruments and other supporting facilities.

90% of departments have recognitions/ funding through research projects, UGC SAP and DST FIST, TEQIP, DST PURSE etc. Grants for research projects sponsored by the government agencies during the last five years is Rs.12,145.95 lakhs. A major funding from Govt. of India under 'Make in India' programme for the indigenously developed Stratosphere-Troposphere (ST) Radar Centre. Number of research projects per teacher funded by government and non-government agencies during the last five years is 3.13 which is remarkably high. 246 research projects having funding of 120 crores, in the last five years

7000 sq ft incubation facilities for Centre for Innovation Technology Transfer and Industrial Collaborations and 93 start-ups incubated during the last five years.

501 workshops/seminars conducted during the last five years. 388 recognitions received for research/innovations in the last five years.

24 patents granted during the last five years and 7 patents are under process. 769 PhD awardees in the last five years. 2270 journal publications, 174 published books (authored/edited), and h-index of CUSAT elevated to 95 from 65 in the last five years.

Revenue generated from consultancy and corporate training during last five years is Rs. 1208.72 lakhs.

481 extension/ outreach activities were conducted for the society and 144 awards received for extension.

103 MoUs and 869 collaborations are with national and international research laboratories/ institutes /industries. 22 premier national institutions in the country are recognized research centres of CUSAT.

Infrastructure and Learning Resources

The University over these years made perceptible changes by way of vastly improving the "living environment" – better infrastructure, state of art instruments, superior laboratory facilities and overall, opportunities for conducive learning experience.

The classrooms /laboratories /seminar halls and meeting rooms of Departments are sufficient in number and are

well equipped with ICT tools. Well-equipped separate laboratories are for UG/PG programmes and specialised laboratories for researchers. Seminar Complex with a 750 pax auditorium and two seminar halls with capacity of 150 and 60 pax is also for the use of the University community.

The total number of class rooms and seminar halls in the departments is 220 and all these are equipped with ICT tools. At least one class room in each department is equipped with an interactive smart board. All schools/departments have their own Seminar Hall/Auditorium.

Adequate sports facilities which include Multipurpose Track and Field, Indoor Stadium, Health and Fitness Centre, Gymnasium for ladies and more. University Guest House and the Visiting Faculty Complex. 39.56% of the expenditure excluding salary is for infrastructure augmentation.

Accommodation facilities are available in the campus for more than 2300 students in 14 University hostels. Separate guest house is for international students. Residential facilities for the staff include quarters and hostels.

24 hour safety of the campus is ensured by the University security services. Other amenities include Medical Centre, University Bus Service, Bank and ATMs, Post-Office, and Child-Care Centre.

Excellent University Central Library with a built up area of 1600 sq.m, which is the first fully automated university library in the State of Kerala, automated in the year 2000. Collection in Central Library exceeds 1,33,000. Library has campus wide- IP enabled access to a wide range of electronic databases, online resources, e-journals, e-shodhsindhu, e-shodhganga, and online books. In addition to the Central Library all departments/schools have separate department libraries with a vast collection of books in their respective areas.

Average annual expenditure for purchase of books/ e-books and subscription to journals/e-journals during the last five years is 293.82 lakhs. On an average 42.48 % of students and teachers use library services in a day.

All departments have computer labs and the computer student ratio is 1:4. The University encourages judicious use of the potential of the internet for efficient implementation of the teaching-learning process. Online courses are conducted through the LMS- MOODLE.

Centre for Information Resources and Management (CIRM) is the nodal point for ICT requirements of the University. The entire University campus has a Fiber Optic LAN of 12KM and UTP cable of 250 KM length providing network. Campus is 100% Wi-Fi enabled, providing secured access through a state-of-the art hardware firewall (Universal Threat Management box) system. 1Gbps link to National Knowledge Network (NKN) to provide smooth internet facility and access to online learning materials.

Overall maintenance of the campus is done by the Engineering Department. On an average 51.44% of the expenditure excluding salary is for maintenance of physical and academic support facilities in the last five years.

Student Support and Progression

CUSAT supports and encourages its students to achieve their goals through best academic and research opportunities and through excellent student support schemes. 27.04% students are benefited by scholarships provided by the University/Government. The State Merit Scheme of the University provides fee concession to

meritorious students from Kerala State, in B.Tech programmes and 8754 students got fee concession under this scheme in the last five years.

The University has a Career Guidance and Employment Bureau and 58.45% of the students benefited by the career counselling and guidance activities. The English and Foreign Languages department conducts several courses to improve language skills of the students in English and foreign languages like French, German, Italian and Japanese. The state of the art multimedia language lab in the department is of great advantage for the entire student community of the University. The University through Dept. of Physical Education conducts training in Yoga for students. Separate Health Clubs are available for boys and girls.

The mechanisms for timely redressal of complaints include well-structured anti-ragging committee, internal complaints committee, gender justice committee etc.

71.1% of students qualified in state/national/ international level examinations during the last five years. CUSAT has a Centralised Placement Cell to coordinate the placement activities and 24.56 % students across all programmes, are placed in the last five years.

CUSAT ensures students' involvement in decision making bodies. Student representatives are present in the administrative bodies like Syndicate, Senate and academic Bodies including academic council, Internal Quality Assurance Committee and other committees like anti-ragging committee and committee for student grievances.

The activities of National Service Scheme, Student Cultural Clubs, Entrepreneurship Club, Student Placement Committee, Student Chapters of Professional Associations foster students' leadership skills and commitment to the society.

CUSAT conducted more than 280 sports and cultural events during the past five years to nurture students' various skills and more than 78 medals/prizes won by students in state/national/international level competitions.

Very strong and vibrant alumni network is in place and alumni contribution amounted to Rs.58 lakh in the last five years.

Governance, Leadership and Management

The University has clearly stated vision and mission and it is reflected in its all activities. The University practices decentralised participative management through which a better academic environment for the benefit of students is ensured. The chief executive body of the University is the Syndicate which comprises representatives from government, accomplished academicians, experts from industries, local bodies, students etc. Nominees from SC/ST category and lady representatives are also in the Syndicate.

The principal academic body of the university is Academic Council which consists of all Deans, Head of Departments, Chairman of all Board of Studies etc. Senate, Faculties, Board of Studies, Department Council are also part of the Governance at various levels

CUSAT implemented e-Governance in all areas of operations including Administration, Finance, Students Admissions, and Examinations. This helped the University to do its activities seamlessly in the Covid outbreak period. The promotion of faculty of the University follows the Career Advancement Scheme (CAS) provided by UGC and AICTE. The University introduced various welfare schemes for the staff including

Hostels/Quarters, HRA, Medical Reimbursement, Medical Insurance for employees and dependants, Group Insurance Scheme and more. The University regularly conducts Workshops/FDPs/training programmes for the professional development of teaching and administrative staff.

CUSAT through various funding schemes such as FIST, SAP, TEQIP, RUSA and KIIFB have made perceptible changes by way of vastly improving the academic environment of the University. Funds / Grants received from government bodies during the last five years for development and maintenance of infrastructure is Rs. 27,749.86 lakhs.

The internal audit of the financial activities is conducted by the University Audit Department and external audit by the Audit Department of the State Government.

The vibrant IQAC of the University conducts various activities to develop quality culture in all activities. Some of them include periodic academic and administrative auditing, green, energy and environment audit, feedback system, periodic revision of the syllabi, conduct of Workshops/FDPs/Seminars, and implementation of outcome based education in the University.

The University participates in NIRF India Ranking and had a jump of 18 points in NIRF University ranking in 2021. ISO certified and NBA accredited programmes are in School of Engineering, KM School of Marine Engineering and Dept of Polymer Science and Rubber Technology. The B.Tech programme in Safety and Fire Engineering and M.Tech Degree in Industrial Safety (HSE Management) secured recognition by the Board of Certified Safety Professionals (BCSP), USA as a Transitional Safety Practitioner (TSP) Qualified Equivalent Programme (QEP).

Institutional Values and Best Practices

The University always strives to inculcate and nurture fundamental values in students through its various academic related activities and activities which reflect commitment to the society.

The University ensures gender equity in all its activities. In most of the PG programmes girls outnumber boys and in UG boys are more than girls. 44% of teachers and 50% of administrative staff are ladies. A lady representative is in the Syndicate, the Governing Council of the University. Trans-gender reservation is implemented in all the professional programmes. A unisex gymnasium is working in the students amenity centre. A gymnasium solely for the ladies is also functioning near ladies hostels.

Environment and Energy conservation measures include promoting the use of solar energy, biogas plants, sensor based energy conservation, use of LED bulbs ensures energy conservation. The environmental sustainability measures include management of solid and liquid, biomedical, e-waste and hazardous wastes and waste recycling systems.

Water conservation facilities in the campus include rain water harvesting, open wells, tanks, maintenance of water bodies and distribution system. Green initiatives in the campus include restricted entry for vehicles, pedestrian friendly pathways, bicycles in the campus for the use of students and staff, landscaping with trees and plants, vegetable farming in collaboration with the Kerala Agricultural Department, Govt. of Kerala, butterfly garden.

The University conducts Gender Audit, Environment Audit, Green Audit and NSS unit conducts beyond the

campus environmental promotion activities.

The University ensures disabled friendly facilities in the campus by providing ramps in all buildings, disabled friendly washrooms signages, facilities for Divyangjan accessible website and more.

The code of conduct for students, teachers and staff are prescribed and are published on the website.

The two practices that CUSAT believes have fostered its reputation and growth are '***Practicing translational research and extension as a commitment to the society***' and '***Holistic development of students through cultural diversity, skill orientation for careers and promotion of entrepreneurship***'.

NAAC

2. PROFILE

2.1 BASIC INFORMATION

Name and Address of the University	
Name	COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
Address	Cochin University of Science and Technology Kochi Kerala State PIN- 682022
City	Cochin
State	Kerala
Pin	682022
Website	www.cusat.ac.in

Contacts for Communication					
Designation	Name	Telephone with STD Code	Mobile	Fax	Email
Vice Chancellor	K N Madhusodanan	0484-2577619	9349406334	0484-2575397	rector@cusat.ac.in
IQAC / CIQA coordinator	K Girish Kumar	0484-2862748	9847363660	0484-2577595	iqaccusat@gmail.com

Nature of University	
Nature of University	State University

Type of University	
Type of University	Unitary

Establishment Details	
Establishment Date of the University	10-07-1971
Status Prior to Establishment, If applicable	

Recognition Details		
Date of Recognition as a University by UGC or Any Other National Agency :		
Under Section	Date	View Document
2f of UGC	10-07-1971	View Document
12B of UGC	10-07-1971	View Document

University with Potential for Excellence	
Is the University Recognised as a University with Potential for Excellence (UPE) by the UGC?	No

Location, Area and Activity of Campus							
Campus Type	Address	Location*	Campus Area in Acres	Built up Area in sq.mts.	Program mes Offered	Date of Establishment	Date of Recognition by UGC/MHRD
Main campus	Cochin University of Science and Technology Kochi Kerala State PIN-682022	Urban	182.43	177665.8	M.Sc,M. Phil,MC A,MA,M Tech,MB A,PhD,B. tech,Five year Integrated Masters Degree in Sciences, M Voc,B Voc, LL. B,LL.M		
Satellite Campus	Lakeside Campus School Of Marine Science Cochin University Of Science And Tec	Urban	2.21	12514.31	M.Sc,M. Phil,M.T ech,PhD	10-07-1971	11-07-1971

	<i>hnology Fine Arts Avenue Cochin Kerala Pin-682 016</i>						
<i>Satellite Campus</i>	<i>Cochin Universi ty College Of Engi neering Kuttana du Pulin cunnu P.o Alap puzha District Kerala State Pin- 688504</i>	<i>Rural</i>	<i>41.99</i>	<i>8313.47</i>	<i>BTech,Ph D,MCA</i>	<i>25-10-1999</i>	<i>27-10-1999</i>

2.2 ACADEMIC INFORMATION

Affiliated Institutions to the University

Type of Colleges	Permanent	Temporary	Total
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Furnish the Details of Colleges of University

Type Of Colleges	Numbers
Constituent Colleges	0
Affiliated Colleges	0
Colleges Under 2(f)	0
Colleges Under 2(f) and 12B	0
NAAC Accredited Colleges	0
Colleges with Potential for Excellence(UGC)	0
Autonomous Colleges	0
Colleges with Postgraduate Departments	0
Colleges with Research Departments	0
University Recognized Research Institutes/Centers	23

Is the University Offering any Programmes Recognised by any Statutory Regulatory Authority (SRA)		: Yes
SRA program	Document	
AICTE	106014_6900_1_1631263876.pdf	
BCI	106014_6900_8_1631263927.pdf	

Details Of Teaching & Non-Teaching Staff Of University

Teaching Faculty												
	Professor				Associate Professor				Assistant Professor			
	Male	Female	Others	Total	Male	Female	Others	Total	Male	Female	Others	Total
Sanctioned	65				140				372			
Recruited	15	3	0	18	40	12	0	52	132	87	0	219
Yet to Recruit	47				88				153			
On Contract	21	3	0	24	0	2	0	2	57	88	0	145

Non-Teaching Staff				
	Male	Female	Others	Total
Sanctioned				774
Recruited	319	363	0	682
Yet to Recruit				92
On Contract	7	13	0	20

Technical Staff				
	Male	Female	Others	Total
Sanctioned				186
Recruited	48	26	0	74
Yet to Recruit				112
On Contract	30	23	0	53

Qualification Details of the Teaching Staff

Permanent Teachers										
Highest Qualification	Professor			Associate Professor			Assistant Professor			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt.	0	0	0	0	0	0	1	0	0	1
Ph.D.	67	39	0	28	12	0	61	35	0	242
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	12	7	0	18	9	0	46

Temporary Teachers										
Highest Qualification	Professor			Associate Professor			Assistant Professor			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt.	0	0	0	0	0	0	0	0	0	0
Ph.D.	19	3	0	0	1	0	10	16	0	49
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	2	0	0	0	0	0	48	73	0	123

Part Time Teachers										
Highest Qualification	Professor			Associate Professor			Assistant Professor			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt.	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	1	2	0	3
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	8	19	0	27

Distinguished Academicians Appointed As

	Male	Female	Others	Total
Emeritus Professor	15	4	0	19
Adjunct Professor	18	2	0	20
Visiting Professor	1	0	0	1

Chairs Instituted by the University

Sl.No	Name of the Department	Name of the Chair	Name of the Sponsor Organisation/Agency
1	Inter University Centre For IPR Studies	IPR chair	Department for Promotion of Industry and Internal Trade
2	University	Chancellors chair	Best University Award of Kerala State Government
3	School of Legal Studies	Justice V R Krishna Iyer Chair on Human Rights	Government of Kerala
4	Department of Ship Technology	Associate Professor chair	Indian Navy

Provide the Following Details of Students Enrolled in the University During the Current Academic Year

Programme		From the State Where University is Located	From Other States of India	NRI Students	Foreign Students	Total
Pre Doctoral (M.Phil)	Male	8	0	0	0	8
	Female	56	0	0	0	56
	Others	0	0	0	0	0
Doctoral (Ph.D)	Male	512	10	0	2	524
	Female	840	5	0	0	845
	Others	0	0	0	0	0
PG	Male	854	30	0	3	887
	Female	1507	20	0	4	1531
	Others	0	0	0	0	0
UG	Male	2713	585	2	12	3312
	Female	1352	71	3	3	1429
	Others	0	0	0	0	0

Does the University offer any Integrated Programmes?	Yes
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Total Number of Integrated Programme	0
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Integrated Programme	From the State where university is located	From other States of India	NRI students	Foreign Students	Total
Male	110	2	0	0	112
Female	180	0	0	0	180
Others	0	0	0	0	0

Details of UGC Human Resource Development Centre, If applicable

Year of Establishment	Nil
Number of UGC Orientation Programmes	0
Number of UGC Refresher Course	0
Number of University's own Programmes	0
Total Number of Programmes Conducted (last five years)	0

Accreditation Details

Cycle Info	Accreditation	Grade	CGPA	Upload Peer Team Report
Cycle 1	Accreditation	Three Star	66.5	NAAC Certificate 2001.pdf
Cycle 2	Accreditation	A	3.09	NAAC PTR of CUSAT Sep 2016 N.pdf

2.3 EVALUATIVE REPORT OF THE DEPARTMENTS

Department Name	Upload Report
Centre For Integrated Studies	View Document
Cochin University College Of Engineering Kuttanad	View Document
Ddu Kaushal Kendra	View Document

Department Of Applied Chemistry	View Document
Department Of Atmospheric Sciences	View Document
Department Of Biotechnology	View Document
Department Of Chemical Oceanography	View Document
Department Of Computer Applications	View Document
Department Of Computer Science	View Document
Department Of Electronics	View Document
Department Of Hindi	View Document
Department Of Instrumentation	View Document
Department Of Marine Biology Microbiology And Biochemistry	View Document
Department Of Marine Geology And Geophysics	View Document
Department Of Mathematics	View Document
Department Of Physical Oceanography	View Document
Department Of Physics	View Document
Department Of Polymer Science And Rubber Technology	View Document
Department Of Ship Technology	View Document
Department Of Statistics	View Document
Dept Of Applied Economics	View Document
International School Of Photonics	View Document
Inter University Centre For Ipr Studies	View Document
K M School Of Marine Engineering	View Document
National Centre For Aquatic Animal Health	View Document
School Of Engineering	View Document
School Of Environmental Studies	View Document
School Of Industrial Fisheries	View Document
School Of Legal Studies	View Document
School Of Management Studies	View Document

Institutional preparedness for NEP

1. Multidisciplinary/interdisciplinary:	<p>The Vision of National Education Policy, to provide high quality education to develop human resources in our nation as global citizens, is well taken by the university. A discussion among the faculty members were initiated on the key principles of NEP such as diversity for all curriculum and pedagogy with technological innovations in teaching and learning, encouraging logical decision making and innovation, critical thinking and creativity. In view of the NEP, university has initiated new interdisciplinary centres integrating different departments in addition to the existing inter/multidisciplinary research and academics. Academic programmes are redesigned to include Multidisciplinary /Interdisciplinary courses as electives. All programmes are designed in such a way that students get maximum flexibility to choose elective courses offered by other Departments. It can be said that the University is proactively working towards implementation of the suggestions given in the NEP.</p>
2. Academic bank of credits (ABC):	<p>CUSAT is an official member of the National Academic Depository which is a government endeavour to offer an online repository for all academic awards under the Digital India Programme. From 2020 onwards, CUSAT is uploading students' mark sheets and degree certificates through the nad.digitallocker.gov.in platform. The National Academic Bank of Credits (ABC) portal has now been integrated into the nad.digitallocker.gov.in platform and is currently live for the academic year 2021. CUSAT follows a choice-based credit system for all of its programmes and is now in the process to pass a resolution related to the ABC in the Academic Council. CUSAT will formally register in the ABC portal as soon as the resolution is being approved by the higher academic bodies.</p>
3. Skill development:	<p>UGC has introduced DDU KAUSHAL KENDRAS (DDUKK) for promoting vocational education in continuation to its initiatives for introducing community colleges and B.Voc Programmes realizing the importance and the necessity for developing skills among students, and creating work ready manpower on large scale. CUSAT is one of the first state universities to implement this concept to start its own DDUKK. Vocational programmes are</p>

	<p>introduced based on National Skill Qualification Framework (NSQF). CUSAT aims at providing quality vocational education through DDUKK combining class room centered formal education and training with experience sharing of Industry practitioners and internships in business houses. The focus is towards integrated knowledge acquisition and upgrading human skill towards creating a new league of employable youth. Teaching and training methodology of courses offered under DDUKK are designed accordingly. Our MBA programme is designed in such a way to mould future managers thoroughly conversant with the application of tools and techniques of modern management practices in order to align with the Government of India's National Skills Qualification Framework (NSQF) and requirements of Industry 4.0. This newly adopted curriculum and the training imparted will help management programme aspirants to get fully trained in accordance with NSQF's National Occupational Standards (NOS) developed by Sector Skills Councils (SSC) and requirements of Industry 4.0 so as to enhance the employability for our graduates as per the industry's current human resources requirements. All these steps are marching towards the implementation of NEP in the real sense. The programme structure and contents adhere to the UGC guide lines for vocational programmes in line with National Skill Qualification Framework (NSQF). The programme offers multiple entry and exit options to students where each exit point is linked to a specific job role as specified in NSQF. Students who successfully complete the first year of the programme will be eligible for PG diploma in Technology and Management Consulting. Successful completion of all four semesters leads to M Voc degree. The two-year programme also provides two skill-certifications following the skill assessment tests by the Sector Skill Council recognized by National Skill Development Corporation (NSDC). Management, Entrepreneurship and Professional Skill Council (MEPSC) is the Sector Skill Council approved by NSDC for M Voc (TMC) programme.</p>
<p>4. Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using online course):</p>	<p>CUSAT encourages learning of national language of Hindi by offering PG, MPhil, PhD, Post Doc degrees in Hindi. Programmes including webinars and seminars are offered to encourage Hindi learners and</p>

	<p>understand the cultural values permeated by the literary works in Hindi. Further, Indian Ethos and Business Ethics in curriculum of Business Administration, teaches cultural values in Indian tradition so a business students imbibe value orientation while in business.</p>
5. Focus on Outcome based education (OBE):	<p>CUSAT offers 116 programmes across Engineering, Environmental Studies, Humanities, Law, Marine Sciences, Medical Sciences and Technology, Science, Social Sciences and Technology All these programmes are offered as outcomes-based education (OBE) which are designed keeping in mind the regional and global requirements. CUSAT has implemented outcome-based education with clearly stated Programme Outcomes, Programme Specific Outcomes and course outcomes. All courses are designed with outcomes centred on cognitive abilities namely Remembering, Understanding, Applying, Analysing, Evaluating and Creating. Apart from the domain-specific skills, learning outcomes at all levels ensure social responsiveness and ethics, as well as entrepreneurial skills so that student contribute proactively to economic, environmental and social well-being of the nation. The Course Objectives (COs) are also aligned to the PO-PSO philosophy. All course syllabus have been designed with due consideration to macro-economic and social needs at large so as to apply the spirit of NEP.</p>
6. Distance education/online education:	<p>Due to Covid -19 pandemic, educational institutions in the country has increasingly involved in using the digital platforms for engaging classes, conducting conferences and meetings. Keeping aside the negative impact of lack of face to face learning, online education has broken the geographical barriers creating interaction of experts and students from distant geographies. Opening up of the economy including that of educational institutions has paved the way of adopting hybrid mode of education called as 'PHYGITAL' combining online and offline resources. This can be considered as the new normal, which is envisaged in New Education Policy as well. Due to the experience gained during the closure period of Covid-19, access to online resources by educators and students will not be a constraint anymore. Faculties are encouraged to offer MOOC courses at CUSAT which promotes the blended learning system of learning.</p>

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Extended Profile

1 Program

1.1

Number of programs offered year-wise for last five years

2020-21	2019-20	2018-19	2017-18	2016-17
116	114	113	110	106
File Description		Document		
Institutional data in prescribed format		View Document		

1.2

Number of departments offering academic programmes

Response: 30

2 Students

2.1

Number of students year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
8592	8286	8381	8149	7777
File Description		Document		
Institutional data in prescribed format		View Document		

2.2

Number of outgoing / final year students year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
2195	2127	2001	2129	1902
File Description		Document		
Institutional data in prescribed format		View Document		

2.3**Number of students appeared in the University examination year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
7221	6985	6999	6811	6508
File Description		Document		
Institutional data in prescribed format		View Document		

2.4**Number of revaluation applications year-wise during the last 5 years**

2020-21	2019-20	2018-19	2017-18	2016-17
152	140	251	424	515

3 Teachers**3.1****Number of courses in all programs year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
2355	1975	1844	1776	1750
File Description		Document		
Institutional data in prescribed format		View Document		

3.2**Number of full time teachers year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
460	447	429	438	388
File Description		Document		
Institutional data in prescribed format		View Document		

3.3

Number of sanctioned posts year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
577	577	577	577	577
File Description		Document		
Institutional data in prescribed format		View Document		

4 Institution**4.1****Number of eligible applications received for admissions to all the programs year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
79251	65301	52840	42639	39953
File Description		Document		
Institutional data in prescribed format		View Document		

4.2**Number of seats earmarked for reserved category as per GOI/State Govt rule year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
1128	1081	984	1039	948
File Description		Document		
Institutional data in prescribed format		View Document		

4.3**Total number of classrooms and seminar halls****Response: 220****4.4****Total number of computers in the campus for academic purpose****Response: 2092**

4.5

Total Expenditure excluding salary year-wise during last five years (INR in Lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
2339.05	3151.35	3562.09	3875.05	3921.20

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4. Quality Indicator Framework(QIF)

Criterion 1 - Curricular Aspects

1.1 Curriculum Design and Development

1.1.1 Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which is reflected in Programme outcomes (POs), Programme Specific Outcomes(PSOs) and Course Outcomes(COs) of the Programmes offered by the Institution.

Response:

The mission of CUSAT is to generate human resources for global competence so as to contribute positively to the progress of the society and the Nation. The curriculum of our academic programmes is designed with the local, national and international developmental needs in mind. Centres of excellence established in areas of global and national importance contribute to enhancing the quality of the academic programmes in departments.

Outcome based programmes

CUSAT offers 116 programmes across Engineering, Environmental Studies, Humanities, Law, Marine Sciences, Science, Social Sciences and Technology. All these programmes are offered as Outcomes-based Education (OBE) which caters for the regional and global requirements.

Programme outcomes (POs) and Programme Specific Outcomes (PSOs)

These aspirations to develop to globally competent and locally responsive manpower are well reflected in the Programme Objectives (POs) and Programme Specific Objectives (PSOs). Apart from the domain-specific skills, learning outcomes at all levels ensure social responsiveness and ethics, as well as entrepreneurial skills so that students contribute proactively to economic, environmental and social well-being of the nation. Illustrations are shown below:

Illustrations

Name of the Programme	Select `PO / PSO
MBA	<p>PO12 :Students should be able to demonstrate their ability to assess and evaluate the dynamic internal and external elements of the competitive <u>global business environment</u>.</p> <p>PSO7: Able to acquire the ability to integrate business knowledge and management techniques to aid planning and control of the business processes and practices in changing <u>global competitive environments</u>.</p> <p>PSO8: Able to develop competent management professionals with strong ethical values, capable of assuming a pivotal role in various sectors of the <u>Indian economy and society, aligned with the national priorities</u>.</p>
MSc (Chemistry)	P.O.10: demonstrate knowledge relevant to <u>the regional, national and international development needs</u> .
MA (Applied Economics)	<p>PO2. Students understand factual information on <u>Indian economy</u>.</p> <p>PO5. Students compare and evaluate the growth and development trends of <u>the national as well as regional economies</u>.</p> <p>PO 6. To understand the theoretical understanding and trade relations <u>India has with various economies of the world</u>.</p> <p>PO7. To understand the current position of the <u>Indian economy among world economies</u>.</p>
MSc (Electronics)	PO3 Use state-of-the-art tools to design, development and analysis problems and provide <u>time bound and economical solutions</u> .
MSc (Statistics)	<p>P.O.2: Acquire the <u>knowledge on modern statistical techniques</u> relevant for today's scientific community.</p> <p>P.O.6: Handle the <u>real life problems</u> using suitable statistical tools in any discipline as well as they will be able to work in any <u>industry which deals with data</u>.</p>
MA Hindi	<p>PO: 2 Explore relation between <u>literature and society</u>:</p> <p>PSO: 1 Analyse the role played by U in past and present.</p>

Course Outcomes

The Course Objectives (COs) are also aligned to the PO-PSO philosophy. All course syllabi have been designed to meet the industry requirements both at the local level and global level- with due consideration for macro-economic and social needs at large. The courses in the science and technology are regularly updated to include the latest global trends in the field.

But care is also taken to discuss applications in the local context. Purely regional focused courses such as Indian ethos, Kerala economy, Indian Constitution, Marine products are also offered. More than 200 courses across the programmes have regional content brought in as part of syllabus.

Programmes reflecting global and regional needs

Special care is taken by the University and its academic bodies to start new departments and programmes responding to the changes in technology or local / societal needs. Departments, such as Polymer Science and Rubber Technology, Ship Technology, Safety and Fire Engineering, Marine Sciences and Marine Engineering, are born out of the regional needs.

PG programmes in Artificial Intelligence, Soft Computing, Financial Technology, Data Science, Forensic Science, Photonicsetc reflect the global trends. New programmes, such as Defense Technology, Polymer Science and MVOC, are born out of the national vision for indigenization and skill upgrading. Vocational programmes are introduced under DDUKK based on National Skill Qualification Framework (NSQF). To support the increasing demand from working professionals, various departments offer part time programs in many advanced courses enabling them to enhance their capabilities.

Programme Revision

Stakeholder feedback has always been at the centre of the programme and course design initiatives at CUSAT. Feedback is collected department-wise from all the important stakeholders, namely students, teachers, parents, alumni and employers for improving the curriculum and the teaching learning process. More than 1200 new courses were introduced across programmes during the last five years. A series of value added courses are also designed and offered to supplement the course syllabus.

File Description	Document
Upload Additional information	View Document

1.1.2 Percentage of Programmes where syllabus revision was carried out during the last five years.

Response: 100

1.1.2.1 How many Programmes were revised out of total number of Programmes offered during the

last five years

Response: 116

1.1.2.2 Number of all Programmes offered by the institution during the last five years.

Response: 116

File Description	Document
Minutes of relevant Academic Council/BOS meeting	View Document
Institutional data in prescribed format	View Document
Details of Programme syllabus revision in last 5 years	View Document

1.1.3 Average percentage of courses having focus on employability/ entrepreneurship/ skill development offered by the institution during the last five years

Response: 75.59

1.1.3.1 Number of courses having focus on employability/ entrepreneurship/ skill development year-wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
1958	1542	1412	1255	1216

File Description	Document
Programme/ Curriculum/ Syllabus of the courses	View Document
MoU's with relevant organizations for these courses, if any	View Document
Minutes of the Boards of Studies/ Academic Council meetings with approvals for these courses	View Document
Institutional data in prescribed format	View Document

1.2 Academic Flexibility**1.2.1 Percentage of new courses introduced of the total number of courses across all programs offered during the last five years.**

Response: 40.84

1.2.1.1 How many new courses were introduced within the last five years.

Response: 1208

1.2.1.2 Number of courses offered by the institution across all programmes during the last five years.

Response: 2958

File Description	Document
Minutes of relevant Academic Council/BOS meeting	View Document
Institutional data in prescribed format	View Document

1.2.2 Percentage of Programmes in which Choice Based Credit System (CBCS) / elective course system has been implemented (Data for the latest completed academic year).

Response: 100

1.2.2.1 Number of Programmes in which CBCS / Elective course system implemented.

Response: 116

File Description	Document
Minutes of relevant Academic Council/BOS meetings	View Document
Institutional data in prescribed format	View Document

1.3 Curriculum Enrichment**1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics ,Gender, Human Values ,Environment and Sustainability into the Curriculum****Response:**

CUSAT, as mentioned in its mission statement, is committed to offering research and training activities so as to contribute positively to the progress of the society and the nation.

In line with this thinking, diverse courses with innovative teaching-learning pedagogies have been introduced for the inculcation of human values, gender equality, professional ethics, environmental concern and sustainable development among the students. Many programmes address these important issues by explicitly stating them as their Programme Outcomes. Courses with aligned Course Objectives are incorporated into these programmes to meet these objectives.

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ILLUSTRATIONS

Name of the Programme	Select `PO
MBA	<p>PO8 Students should be able to understand the impact of the professional management solutions in <u>societal and environmental contexts</u>, and <u>demonstrate the knowledge of, and need for sustainable development</u>.</p> <p>PO9 Students should be able to <u>apply ethical principles</u> and commit to <u>professional ethics and responsibilities</u> and norms of the management practice for making judicious managerial decisions.</p>
B.Tech (Naval Architecture and Ship Building)	PO3: Showing continuous improvement in their professional career through life -long learning, <u>appreciating human values and ethics</u> .
MA Hindi	<p>PO8: The students will have an <u>in-depth knowledge about the various problems faced by women in different circumstances and the exploitation faced by women in feudalistic Patriarchy system</u></p> <p>PO: 9 <u>Consciousness about the issues related to the Oppressed People</u> such as the Dalits, Adivasi, Minorities, children, Old Aged People , Differentially abled people.</p> <p>PO:10 <u>Environmental consciousness</u> invokes their commitment and responsibility to the ecology.</p>

Environment and Sustainability

There are 130 courses across all programmes discussing issues concerned with Environment and sustainability. We have a specialized school named Environmental Studies which offers an M Sc. Environmental Science and Technology. The science of sustainable practices with the fundamental principles of science are inculcated in the curriculum and are available to students from other department as well. The curriculum of marine biotechnology discusses on how to find practical solutions through marine biotechnological interventions. PSRT department addresses importance of Environmental issues through a collection of courses such as Environment Quality Modeling, Waste energy Conversion and Environmental engineering. The Department of Industrial Fisheries put sufficient focus on the aquatic organisms inhabit and the need to conserve the resources. Energy conservation and sustainability engineering related courses are part of the engineering curriculum. Ship Technology offers unique in Ship Recycling and Marine Pollution. The department atmospheric sciences addresses climate change in the regional scale and also generates high resolution regional weather forecasts on a daily basis.

Professional Ethics

A compulsory course on Research ethics is offered to all research scholars as part of the course work. In line with its vision of molding managers for mankind, the MBA programme offer core courses in Indian Ethos, Business Ethics and Managerial Skill Development. Professional Ethics as a core course is taught in all engineering programmes. Bio ethics is a specialized course in Biotechnology Programmes. All M.Voc students are trained in Corporate Governance and Ethics. Departments such as Ship technology, Legal studies, Instrumentation, KMSME have modules of professional ethics in various courses in their curriculum.

Human Values and Gender Equity

We have a Centre for Study of Social Exclusion and Inclusive Policy committed to fostering research in the broad agenda of social exclusion. The department of Economics offers courses on Gender Issues. IPR centre has a special course on intellectual property of Marginalized Communities. A course on Universal Human Values is offered in the B.Tech Programme. Courses such as Feminine Discourse and Adivasi Discourse are offered in Hindi department. Courses on justice in a globalized world in LLM Programme are concerned with human side of law. Women Study Centre offers elective courses and seminars concerned with gender equity.

File Description	Document
Upload the list and description of the courses which address the Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum	View Document
Any additional information	View Document

1.3.2 Number of value-added courses for imparting transferable and life skills offered during last five years.**Response:** 155**1.3.2.1 How many new value-added courses are added within the last five years.****Response:** 155

File Description	Document
Institutional data in prescribed format	View Document
Brochure or any other document relating to value added courses	View Document

1.3.3 Average Percentage of students enrolled in the courses under 1.3.2 above.**Response:** 41.69**1.3.3.1 Number of students enrolled in value-added courses imparting transferable and life skills offered year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
4179	3413	3907	3742	2027

1.3.4 Percentage of students undertaking field projects / research projects / internships (Data for the latest completed academic year).**Response:** 43.83**1.3.4.1 Number of students undertaking field projects or research projects or internships.****Response:** 3766

File Description	Document
List of Programmes and number of students undertaking field projects research projects/ / internships (Data Template)	View Document

1.4 Feedback System**1.4.1 Structured feedback for design and review of syllabus – semester-wise / year-wise is received from 1) Students, 2) Teachers, 3) Employers, 4) Alumni**

Response: A. All 4 of the above

File Description	Document
URL for stakeholder feedback report	View Document
Institutional data in prescribed format	View Document
Action taken report of the University on feedback report as stated in the minutes of the Governing Council, Syndicate, Board of Management (Upload)	View Document

1.4.2 Feedback processes of the institution may be classified as follows:

Response: A. Feedback collected, analysed and action taken and feedback available on website

File Description	Document
URL for feedback report	View Document
Institutional data in prescribed format	View Document

Criterion 2 - Teaching-learning and Evaluation

2.1 Student Enrollment and Profile

2.1.1 Demand Ratio (Average of last five years)

Response: 20.81

2.1.1.1 Number of seats available year wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
2797	2673	2656	2808	2468

File Description	Document
Demand Ratio (Average of Last five years) based on Data Template upload the document	View Document
• Any additional information	View Document

2.1.2 Average percentage of seats filled against reserved categories (SC, ST, OBC, Divyangjan, etc.) as per applicable reservation policy during the last five years (Excluding Supernumerary Seats)

Response: 73.21

2.1.2.1 Number of actual students admitted from the reserved categories year wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
810	768	787	721	700

File Description	Document
Average percentage of seats filled against seats reserved (Data Template)	View Document
Any additional information	View Document

2.2 Catering to Student Diversity

2.2.1 The institution assesses the learning levels of the students and organises special Programmes for advanced learners and slow learners

Response:**Identification Mechanism:**

A systematic evaluation process through continuous assessments consisting of written examination, group presentation, individual seminar presentation, mini project, practical examination with viva, minor projects and written assignments are carried out. The continuous evaluation scheme helps to identify both advanced learners and slow learners and initiate suitable remedial measures. Best practices for advanced learners and reassuring steps for slow learners are conceived to achieve a comprehensive academic development.

Each student has a mentor to advise the student, in accordance with his/ her learning abilities and interests.

Initiatives for advanced learners

- 1.Chances to interact with scholars of the stature of Nobel laureates who visit the University under the Erudite programme, providing motivation for students to collaborate with International Institutes and Universities.
- 2.**The Cochin University Knowledge Forum** is an excellent platform for students to participate in discussions on latest trends, with peers and faculty on a wide range of multidisciplinary topics related to Science and Technology.
- 3.The advanced learners are encouraged to take extra credits either as part of CBCS or as audit courses apart from online courses under **MOOC platform, Courseera ,Swayam Prabha, NPTEL, etc.**
- 4.Coaching sessions are arranged for competitive examinations, such as NET, JRF and other examinations by **The University Employment Information and Guidance Bureau.**
- 5.Travel grants are provided to students for participation in National/International Conferences, competitions and other technical events. Merit awards are constituted by University, bodies such as PTA, Old Students Association, Endowments, Associations for the meritorious students,etc.
- 6.Students organise and participate in competitions, quizzes, exhibitions, etc. They get opportunities to showcase their knowledge and talents. .Research projects are permitted for advanced learners in lieu of regular courses as part of the curriculum.
- 7.Students pursue internships in reputed institutions with the help of Alumni associations.
- 8.Ph.D. adjudicators have a special session to interact with students either through seminars or discussions.

Initiatives for mentoring and handholding of the slow learner.

- 1.There are regular **remedial classes** for slow learners.
- 2.Examination regulations of CUSAT for all programs except Ph.D., admit makeover examinations to accommodate slow learners giving them one more chance in end semester examinations.
- 3.**The Equal Opportunity Cell (EOC)** of the university runs regular **remedial classes**. The EOC holds regular orientation programs on various opportunities, scholarship and fellowships available for the marginalised sections of students, benefiting many of the students who want to pursue higher studies.
- 4.**The University Employment Information and Guidance Bureau** conducts regular programmes focusing on career counselling, employment, soft skill development, short term courses and motivational talks.

5. **The Skill Orientation Centre for Engineering** focuses on developing the employability of weak students belonging to the SC/ST category.
6. Motivational talks and programmes are arranged for slow learners giving them confidence to rise high and excel in academics. For learners who still feel like a fish out of water in academics, personal counselling by faculty members or external experts through **the Behaviour Studio** of the University is provided.

File Description	Document
Upload Any additional information	View Document
Paste link for additional information	View Document

2.2.2 Student - Full time teacher ratio (Data for the latest completed academic year)

Response: 19:1

File Description	Document
Any additional information	View Document

2.3 Teaching- Learning Process

2.3.1 Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences

Response:

The University ensures the holistic development of the students through a student-centric learning process and suitable curriculum design. Choice Based Credit System (CBCS) is adopted in the University. In order to impart an enhanced learning experience, the students are encouraged to choose inter-disciplinary, intra-disciplinary and skill-based courses in CBCS according to their interests.

The University has also revised the syllabus by giving importance to Outcome Based Education (OBE). The University provides innovative methods for enriching the learning experience by developing analytical skills, expanding thought process, developing problem-solving skills and soft skills.

Experiential Learning, Assignments, Guided Projects and Participative Learning are a part of the curriculum for every programme in CUSAT.

1. Knowledge Forum and Journal Clubs: Students can present their research paper or a review paper in their area of research in order to develop research aptitude and inculcate research ideas at an early stage.
2. Unrestricted access to Labs: Students are given maximum academic freedom at the lab. Apart from the experiments prescribed in the syllabus, students can perform any other experiment they wish to

do as part of a project assignment or competitions.

3. Internships: Students are encouraged to take up internships during their vacations, thereby translating the classroom knowledge into practice.
4. Field and Industry Visits: Students are exposed to industrial realities and to interesting facts and breath-taking technologies through study tours and industry visits.
5. Experiential Learning, Problem Solving Techniques and Assignments: Assignments, practical sessions, seminars and guided projects consisting of hands-on implementations of theoretical aspects in the subject are an integral part of the curriculum.
6. Project based Learning: To get a deeper understanding of the subject and gain hands-on practical experience on theoretical aspects, all programmes offered in CUSAT, have Projects. Apart from this, mini projects in a course are also given.
7. Gamification and Participative Learning: The faculty members at CUSAT successfully use Gamification techniques which have received recognition from various quarters, to make curriculum enjoyable and motivate students in academics.
8. Study Analysis and Discussion: Projects, seminar and assignments are usually case studies where students gain skills in critical thinking, communication, participation and group dynamics. The moot courts, students' parliament, industrial projects and study tours enhance and enrich these experiences.
9. Conferences and Exhibitions: The departments conduct scientific exhibitions / workshops making learning student-centric and inculcating research aptitude. The University conducted the 'SASTHRAYAN' in order to showcase the technologies and products developed by each and every department to the general public.
10. Competitions: Students not only participate in various competitions but also organise competitions, thereby acquiring motivation to perform, excel, adopt innovative techniques. Talentime, Thavazi, Medha, Hackathon competitions have become events attracting participants from all over the country.
11. Soft Skills and Capability Enhancement Training Programmes: The University Employment and Guidance Bureau conducts regular training programmes for students aimed at skill (Soft & Technical) / career development and higher studies.

File Description	Document
Upload any additional information	View Document

2.3.2 Teachers use ICT enabled tools including online resources for effective teaching and learning process.

Response:

The Information and Communication Technology- based learning has greater importance in the current situation.

1. ICT enabled Classrooms: Every department in the University has ICT- enabled classrooms with smart board facilities. Teachers use ICT- enabled tools for effective teaching and learning processes.
2. Virtual classrooms: virtual workshops and research collaborations were conducted from 2017. Virtual class rooms like Google Classrooms are also used for discussions and announcements, apart from classroom teaching. This made it very easy for the University to handle the challenges of the Pandemic in 2020 and shift to online mode. Online Class/Lectures, Moodle Blue-button plugins are utilised as Meet@CUSAT for conducting online classes and lectures. Interactive sessions are also conducted with the help of collaborative whiteboard environment.
3. Moodle@CUSAT is used for the teaching-learning process. Students are enrolled into each subject specific portal where students can understand their subject, specific pre-requisites, course description, objectives and course specific outcomes and syllabus of the subject. Course Plan can be referred to from Moodle so that they can plan their studies and assignments and term work accordingly. In addition to the MOOCs facilitated via the University's website portal, the University also took initiative to provide access to online courses via the Campus programme of Coursera. Access to almost 4,200 online courses to students and faculty via the Campus programme initiative, in collaboration with platforms like Coursera, SWAYAM, NPTEL, etc. is in place. The University has two fully equipped recording studios for Moodle classes.
4. The University Library has campus wide- IP enabled access to a wide range of electronic databases, e-journals and online books which in turn assist the productivity of the university academics to a great extent. The Academic community of CUSAT can access e-books, theses database, journal database, e-journals and other e-resources from any terminal within the University campus. Online access is also provided to citation and scientometric databases such as Scopus, MathSciNet and Web of Science. The library has included e-ShodhSindhu in its E-Gateway which the MHRD and INFLIBNET have formed merging Consortia initiatives, namely UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium. It provides access to various publisher links like Elsevier Science, Taylor and Francis, Springer, IEEE, etc. Besides this, CUSAT library itself subscribes to many e-journals. These are extended 24x7 services via remote access facilities to all students and faculty members. There is also provision for conducting video conferencing classes as and when required.
5. Updates: Exam time table, previous year question papers, daily updates, scholarship details, etc are made available on the website.

ICT- enabled seminar hall, class rooms, auditorium, committee room, etc. are equipped with ICT tools. Invited lecture series, invited talks, national and international conferences and webinars are

conducted in the seminar hall using ICT - enabled tools.

File Description	Document
Upload any additional information	View Document
Provide link for webpage describing the " LMS/ Academic management system"	View Document

2.3.3 Ratio of students to mentor for academic and other related issues (Data for the latest completed academic year)

Response: 19:1

2.3.3.1 Number of mentors

Response: 460

File Description	Document
Upload year wise, number of students enrolled and full time teachers on roll.	View Document

2.4 Teacher Profile and Quality

2.4.1 Average percentage of full time teachers against sanctioned posts during the last five years

Response: 74.94

File Description	Document
Year wise full time teachers and sanctioned posts for 5 years	View Document
List of the faculty members authenticated by the Head of HEI	View Document
Any additional information	View Document

2.4.2 Average percentage of full time teachers with Ph.D./D.M/M.Ch./D.N.B Superspeciality/D.Sc./D'Lit. year-wise during the last five years

Response: 57.46

2.4.2.1 Number of full time teachers with *Ph. D. / D.M. / M.Ch. / D.N.B Superspeciality / D.Sc. / D.Litt.* year wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
284	259	245	238	218

File Description	Document
List of number of full time teachers with Ph D/D M/M Ch/D N B Superspeciality/DSc/D Lit and number of full time teachers for 5 years	View Document

2.4.3 Average teaching experience of full time teachers in the same institution (Data for the latest completed academic year in number of years)

Response: 9.26

2.4.3.1 Total experience of full-time teachers

Response: 4258.1

File Description	Document
List of Teachers including their PAN, designation, dept and experience details	View Document

2.4.4 Average percentage of full time teachers who received awards, recognition, fellowships at State, National, International level from Government/Govt. recognised bodies during the last five years

Response: 82.79

2.4.4.1 Number of full time teachers receiving awards from state /national /international level from Government/Govt. recognized bodies year wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
105	93	66	54	40

File Description	Document
Institutional data in prescribed format	View Document
e-copies of award letters (scanned or soft copy)	View Document

2.5 Evaluation Process and Reforms

2.5.1 Average number of days from the date of last semester-end/ year- end examination till the declaration of results year-wise during the last five years**Response:** 40.27**2.5.1.1 Number of days from the date of last semester-end/ year- end examination till the declaration of results year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
27.85	39.38	45.88	40.28	47.96

File Description	Document
List of Programmes and date of last semester and date of declaration of results	View Document
Any additional information	View Document

2.5.2 Average percentage of student complaints/grievances about evaluation against total number appeared in the examinations during the last five years**Response:** 4.37**2.5.2.1 Number of complaints/grievances about evaluation year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
152	140	251	424	515

File Description	Document
Number of complaints and total number of students appeared year wise	View Document
Any additional information	View Document

2.5.3 IT integration and reforms in the examination procedures and processes (continuous internal assessment and end-semester assessment) have brought in considerable improvement in examination management system of the institution**Response:**

CUSAT has a well established, fully automated and efficient Web Based Examination Management System developed in-house by the Team of Technical Experts of the University and commissioned in the

Year 2018 replacing the old SQL based examination software. The current software is agile and capable of incorporating the continuous reforms taking place in syllabus, examination procedures, valuation and publication of results.

Reforms in Examination Procedures

The University follows semester system for all the UG/PG programmes. At the beginning of each semester, an Academic Calendar of all academic and examination activities is published and is strictly followed for the timely completion of course, conduct of examinations and publication of results.

1. Question papers are designed to test the capability in understanding concepts, analysis, application, and evaluation of these concepts, along with creativity skills of the student ensuring pre-defined standards, covering all modules, and following Bloom's Revised Taxonomy. All faculty members were trained in question paper setting and evaluation under the OBE making the evaluation process more efficient.
2. All students are subject to both Continuous and End semester evaluations.
3. Evaluation process for post graduation programmes has been made internal resulting in effective evaluation of students, especially in specialised topics.
4. The University means and ensures accountability and transparency in evaluation by letting the students check their answer sheets along with mark entry sheet and scheme of evaluation..
5. Reforms are regularly revisited by the Academic Council to improve quality and employability of the students.
6. The Ph.D. regulations are revised regularly in compliance with the UGC guidelines. Plagiarism check URKUND (supported by UGC INFLIBNET) is available. The University Library is made mandatory while submitting the Ph.D. thesis and it is also mandatory that before submission of the final thesis, the research scholar will have to do paper presentation in two conferences and publish at least two research papers in a Standard Referred Journal.

IT Integration

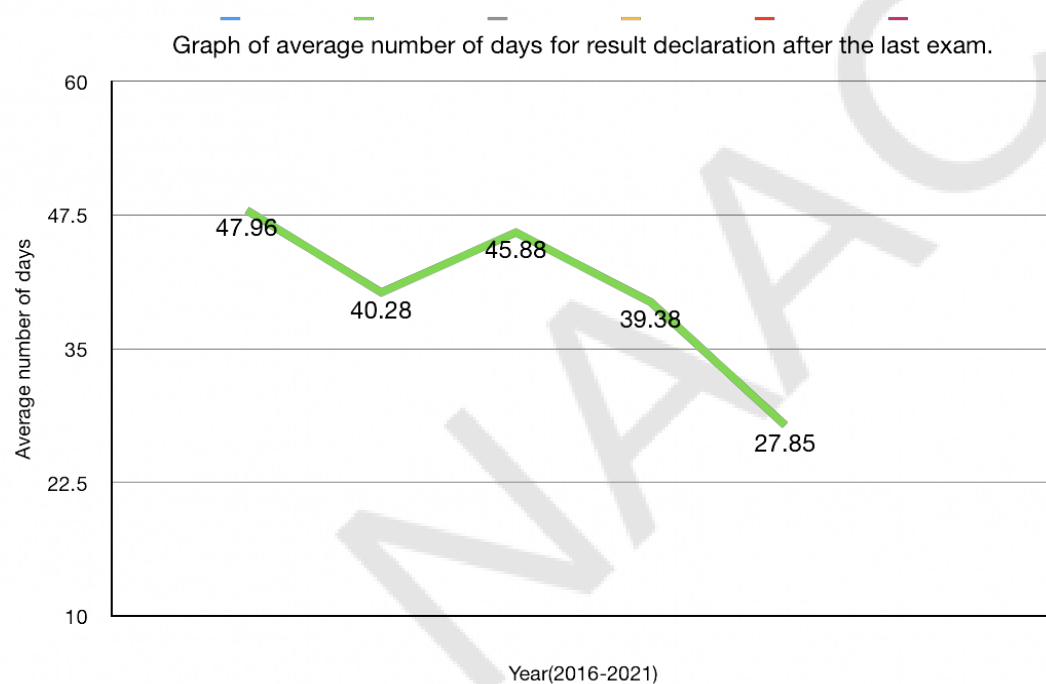
1. Complete Automation of the entire examination division and implementation of the Examination Management System (EMS) enable integration of all the activities in the Examination Wing.
2. The pre and post examination activities are automated starting with the Student registration which creates a master database of the students in a particular academic year for different courses. SMS alert facilities are also automated.
3. The attendance details and marks for individual subjects of the students are directly uploaded to the EMS securely through individual faculty login page.
4. All the examination notification and examination results are available in the web based Dashboard.(<https://estudents.cusat.ac.in/>). Applications are integrated into Student Dashboard and online

payment gateway option is also provided.

5. Hall tickets for the examinations and the results are available online and can be downloaded.

6. Student can apply for various certificates through this facility. Certificates also have QR encoding for cross verification.

All these reforms have a positive impact on conduct. It has reduced the gap between examination and result declaration significantly benefiting the students tremendously.



Impact of examination reforms and IT integration.

File Description	Document
Year wise number of applications, students and revaluation cases	View Document
Any additional information	View Document

2.5.4 Status of automation of Examination division along with approved Examination Manual

Response: 100% automation of entire division & implementation of Examination Management System (EMS)

File Description	Document
Current manual of examination automation system and Annual reports of examination including the present status of automation	View Document
Current Manual of examination automation system	View Document
Annual reports of examination including the present status of automation	View Document

2.6 Student Performance and Learning Outcomes

2.6.1 The institution has stated learning outcomes (generic and programme specific)/graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents

Response:

Our vision is to impart innovation-oriented education, to build globally competent and socially committed professionals. All the programmes offered by the University have been converted to outcome based ones. Our faculty members are empowered with outcome-based teaching, learning and assessment strategies. This is done by regular FDP programmes and workshops conducted by the University.

Program Formulation: Each Program is formulated in tune with the scientific needs of the industry and society. They focus generally on **Scholarship of Knowledge, Critical Thinking, Problem Solving, Research Skill , Usage of modern tools, collaborative and multi-disciplinary work, project management. Communication.** Apart from the above mentioned objectives, each course is designed keeping in mind the general course objectives focusing to the **core knowledge base in the academic field** and generating innovative, relevant knowledge through **inquiry, critical reflection and analysis.**

Academic Process: Each course in a program is conceived by the **Department Council**. The syllabus, eligibility and evaluation regulations are framed by the **Board of Studies** comprising subject experts, industrial experts and other stakeholders. Later on this is scrutinised in the **Academic Council** of the University. Finally, the Syndicate of the University scrutinises the feasibility before approval.

Assessment: Process: Every student is subject to a continuous assessment and an end semester assessment. The various assessment process is formulated in such a way that the cognitive skills in particular Knowledge, Comprehension, Application, Analysis, Evaluation and creation can be assessed. A systematic evaluation process through **continuous assessments** consisting of written examination, group presentation, Individual seminar presentation, mini project, practical examination with viva, minor projects and written assignments. The **end semester question paper** is scrutinised by the **Department council** carefully to see that each question paper adheres to standards expected. The knowledge and analytical skills are assessed through mini projects associated to confirm attainment of Course Outcomes.

The attainment calculations include the direct and indirect tools. Direct tools include the continuous assessment, assignments and end semester exam. Indirect tool include the course end survey, faculty survey, program exit survey, parent survey and alumni survey.

Notifications: The University Website publishes the syllabus of various program along with programme outcomes, course outcomes, eligibility and assessment regulations, pertaining to each course. Every student is provided with a copy of program outcome, course outcome and syllabus at the beginning of the programme. The programs and outcomes are displayed in every department. The vision and mission of the University is well displayed in common areas like entrance of University building, Common Amenity Centres, University central library and prominent locations in the campuses.

Feedback: The department collects feedback from students, parents, employers, other stakeholders and teachers on the program and course outcomes. This is subject to an audit by the Department Council for due consideration.

File Description	Document
Upload COs for all courses (exemplars from Glossary)	View Document
Paste link for Additional Information	View Document

2.6.2 Attainment of Programme outcomes, Programme specific outcomes and course outcomes are evaluated by the institution

Response:

Each Department and School takes upon itself the task of achieving the programme goals. To assess the same, direct assessment tools are provided through direct examinations or observations of student knowledge or skills against measurable course outcomes. The assessment of knowledge and skills acquired as described by the course outcomes are done by the direct assessment tools like University examinations, internal exams and home assignment. Detailed regulations for various programs and their assessment methods are published.

The programme outcomes are verified by the Department Council and take necessary corrective actions. The progress of students to higher studies, placements received, achievements in other academic activities directly reflect the effectiveness and delivery of the course.

In addition to the above, there exists frequent interaction between the **Alumni Members, Employers and other stakeholders**. Apart from this, the Department Council evaluates the **student feedback** and feedback from other stakeholders directly after every semester. Suggestions for improvement are incorporated to improve the teaching and learning process by placing them for discussion in the Board of Studies. Every department and school is subject to an annual **academic audit** which reflects the performance of the department in attaining these preset objectives

Assessment: Process:.**ATTAINMENT CALCULATION of PO and CO**

The Program Outcomes (POs) are defined for each program of study. Program Educational Objectives (PEOs) and Program Specific Outcomes (PSOs) are defined for each branch of study. The course outcomes are defined for each course the student is studying. The entire COs is mapped to the POs and PSOs. For calculating the attainment of CO-PO these are two steps included they are direct and indirect tools. Direct tools include the internal exam 1 and 2, assignments 1 and 2, and end semester exam. Indirect tool include the course end survey, faculty survey, program exit survey, parent survey and alumni survey. The weightage of each of the tool is being explained below:

Weightage

	Internal Exam	Assignment	End Sem Exam	Course End Survey (CES)	Parent Survey Exit Survey
CO	20%	10%	50%	8%	3% each

Attainment levels are defined as

Attainment Level	End Sem Exam, Internal Exam, Assignment
1.	40-49% of students score $\geq 60\%$
2.	50-59% of students score $\geq 60\%$
3.	60-69% of students score $\geq 60\%$
4.	70-79% of students score $\geq 60\%$
5.	80% and above students score $\geq 60\%$

For assessing the attainment, attainment levels are fixed (each institute's discretion). The actual attainment of a batch of students is put in the CO-PO matrix to get the total attainment. The percentage attainment from direct and indirect tools is calculated for all the courses. PO attainment for the batch is calculated.

File Description	Document
Upload any additional information	View Document

2.6.3 Pass Percentage of students(Data for the latest completed academic year)

Response: 80.69

2.6.3.1 Total number of final year students who passed the examination conducted by Institution.

Response: 1550

2.6.3.2 Total number of final year students who appeared for the examination conducted by the Institution.

Response: 1921

File Description	Document
Upload list of Programmes and number of students passed and appeared in the final year examination	View Document
Upload any additional information	View Document
Link fo any additional information	View Document

2.7 Student Satisfaction Survey

2.7.1 Online student satisfaction survey regarding teaching learning process

Response:

File Description	Document
Upload database of all currently enrolled students	View Document

Criterion 3 - Research, Innovations and Extension

3.1 Promotion of Research and Facilities

3.1.1 The institution Research facilities are frequently updated and there is well defined policy for promotion of research which is uploaded on the institutional website and implemented

Response:

The University has a well-established mechanism to foster research for contributing to societal benefits, through which all R&D activities are promoted, encouraged and appraised.

The University has structured guidelines for quality research and the research facilities are enhanced periodically to support the faculty and Research Scholars. The Departmental Research Committee forms the apex body for the research activities of the departments. There is a Doctoral Committee to monitor the progress of each student registered for research in the University and its recognized Institutions. Additionally, there is a Research Advisory Committee for the entire University, which meets regularly to assess the progress of all the sponsored research projects running on the campus.

The present NIRF University ranking of 44, inclusion of 110 faculty members in AD index, three Chancellor's awards during the last five years and the research publications exemplify the steady progress of research activities in the University. During the last five years an amount of Rs 212 lakh given to faculty for research as seed money, 769 PhDs were awarded, 270 Research projects were received with an outlay of an amount of Rs 4679 lakh.

The major initiatives for promoting research are:

- Research facilities are regularly upgraded subsequent to the developments in the corresponding research area.
- In addition to the academic departments, the interuniversity centres, interdisciplinary Virtual Centres, National Facility for Radar Research, National Institute of Aquatic Animal Research Centre, Centre for Marine Biotechnology, etc., the University felicitates research for social needs. The University regularly receives funding from different agencies, such as DST FIST, RUSA, SAP, PURSE, etc.
- Newly recruited faculty members are encouraged to start their research career by providing seed money from the University.
- Faculty members are assisted to establish a network with other universities within India as well as abroad and go for MoUs for the benefit of faculty and students.
- Faculty member are encouraged to apply for research projects from International and national funding agencies apart from local bodies, industries and other funding sources for research projects.
- Appropriate research skills are cultivated among faculty members by deputing them for post doctoral research, conferences, workshops and Short Term Training Programmes.

- In accordance with the UGC/AICTE norms, high standards of research output are one of the main criteria for the recruitment and promotion of faculty.
- Promotes a culture of research through subject specific seminars / conferences as well as skill building workshops/training programmes.
- Regularly conducts national/international conferences on emerging areas of studies and many eminent academics from India and abroad participate.
- Post-Doctoral, Junior and Senior Research Fellowships are awarded by the University for promoting research.
- Research Awards are instituted both for young Teachers and Research scholars to sustain their research interests.
- Monthly talks are conducted by the Knowledge Forum, a group consisting of young faculty members.
- Assists the faculty members for patent registration through IPR Centre.
- Facilitates entrepreneurship among students through innovation/incubation centres.

File Description	Document
URL of Policy document on promotion of research uploaded on website	View Document

3.1.2 The institution provides seed money to its teachers for research (average per year, INR in Lakhs)

Response: 42.44

3.1.2.1 The amount of seed money provided by institution to its faculty year-wise during the last five years (INR in lakhs).

2020-21	2019-20	2018-19	2017-18	2016-17
68.45	2	68.65	72.62	0.50

File Description	Document
Institutional data in prescribed format	View Document

3.1.3 Percentage of teachers receiving national / international fellowship / financial support by various agencies for advanced studies / research during the last five years.**Response:** 4.3**3.1.3.1 The number of teachers who received national / international fellowship / financial support by various agencies for advanced studies / research year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
22	17	17	22	15

File Description	Document
Institutional data in prescribed format	View Document
e-copies of the award letters of the teachers	View Document

3.1.4 Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other research fellows enrolled in the institution during the last five years.**Response:** 725**3.1.4.1 The Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other research fellows enrolled in the institution year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
124	149	177	169	106

File Description	Document
Institutional data in prescribed format	View Document

3.1.5 Institution has the following facilities to support research

1. Central Instrumentation Centre
2. Animal House/Green House
3. Museum
4. Media laboratory/Studios
5. Business Lab
6. Research/Statistical Databases
7. Mootcourt
8. Theatre

9. Art Gallery**10. Any other facility to support research****Response:** A. 4 or more of the above

File Description	Document
Upload the list of facilities provided by the university and their year of establishment	View Document
Paste link of videos and geotagged photographs	View Document

3.1.6 Percentage of departments with UGC-SAP, CAS, DST-FIST, DBT, ICSSR and other recognitions by national and international agencies (Data for the latest completed academic year)**Response:** 90**3.1.6.1 The Number of departments with UGC-SAP, CAS, DST-FIST, DBT, ICSSR and other similar recognitions by national and international agencies.****Response:** 27

File Description	Document
Institutional data in prescribed format	View Document
e-version of departmental recognition award letters	View Document

3.2 Resource Mobilization for Research**3.2.1 Extramural funding for Research (Grants sponsored by the non-government sources such as industry, corporate houses, international bodies for research projects) endowments, Chairs in the University during the last five years (INR in Lakhs).****Response:** 589.61**3.2.1.1 Total Grants for research projects sponsored by the non-government sources such as industry, corporate houses, international bodies, endowments, Chairs in the institution year-wise during the last five years (INR in Lakhs).**

2020-21	2019-20	2018-19	2017-18	2016-17
473.02	19.99	87	0	9.60

File Description	Document
Institutional data in prescribed format	View Document
e-copies of the grant award letters for research projects sponsored by non-government	View Document

3.2.2 Grants for research projects sponsored by the government agencies during the last five years (INR in Lakhs).

Response: 11981.02

3.2.2.1 Total Grants for research projects sponsored by the government agencies year-wise during the last five years (INR in Lakhs).

2020-21	2019-20	2018-19	2017-18	2016-17
1981.11	3067.17	1330.15	1533.48	4069.11

File Description	Document
Institutional data in prescribed format	View Document
e-copies of the grant award letters for research projects sponsored by government	View Document

3.2.3 Number of research projects per teacher funded by government and non-government agencies during the last five years

Response: 3.13

3.2.3.1 Number of research projects funded by government and non-government agencies during the last five years.

Response: 270

3.2.3.2 Number of full time teachers worked in the institution year-wise during the last five years..

Response: 432

File Description	Document
Supporting document from Funding Agency	View Document
Institutional data in prescribed format	View Document

3.3 Innovation Ecosystem

3.3.1 Institution has created an eco system for innovations including Incubation centre and other initiatives for creation and transfer of knowledge.

Response:

The University ensures a conducive environment for research leading to innovations. This is achieved by recruiting dynamic and vibrant faculty on the one hand, and by establishing

The innovation is promoted in three ways: one by providing and promoting research, which leads to innovations through assistance of the legal aspects about the norms of research ethics. The second is by providing infrastructure facilities, financial support and expert guidance for developing innovative products or services, and the third is by helping in filing patent applications and getting legal protection for the innovations.

Each Department of the University encourages teachers and students to actively involve in research and provides the necessary supports, such as expert guidance, documentation and filing of patent applications.

Major establishments promoting entrepreneurship are:

1. Centre for Technology Transfer and Industrial Collaborations (CITTIC)
2. RUSA Innovations and Start up Ecosystem (RISE)
3. Technology Business Incubation Centre (TBI)
4. CUSAT Employability and Innovation Hub (EI- Hub)
5. Entrepreneurship Cell at University Level.
6. Entrepreneurship Club Cell at Department Level
7. National Centre for Aquatic Animal Health (NCAAH)
8. Centre for Marine Biotechnology
9. Inter-Disciplinary Centres for Advanced Research, Interuniversity Centre for Nanomaterials and Devices (IUCND); Interuniversity Centre for Advanced Materials (CAM); Prof. N. R. Madhava Menon Interdisciplinary Centre for Research Ethics & Protocols (ICREP); and The Intellectual Property Rights Facilitation Cell.

Other Initiatives

In addition to the above, various departments, centres and schools are also providing various pre-incubation services to researchers and potential entrepreneurs. The services include expert advice, testing facilities, equipment, space for research activities, legal opinion, services related to obtaining patents and other necessary related services.

Major Achievements

1. 7000 sq ft incubation facilities for Centre for innovation Technology Transfer and Industrial Collaborations
2. Exclusive Centre for Intellectual Property for patent filing
3. 93 start-ups incubated during the last five years.
4. 79 MoUs and 718 Collaborations with national and international research laboratories/universities
5. Knowledge forum to share and disseminate technological talks/innovations.
6. Alumni association also actively involves in initiating start-up companies (The start-up companies named Well Green, DELGADO as well as Ship Technology Industrial Consultancy (STICON) are the creation of CUSAT former students)
7. Two crore seed money for young faculty to initiate innovative research
8. Transfer of knowledge and technology at the community level through NCAAH
9. 24 patents granted during the last five years and 7 patents are under process.
10. Rashtriya Utchathar Shiksha Abhiyan (RUSA) start-up grants for Post Doctoral Research with joint guidance from the university and industry.

File Description	Document
Paste link for additional information	View Document

3.3.2 Number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR), entrepreneurship, skill development during the last five years.

Response: 501

3.3.2.1 Total number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR), entrepreneurship, skill development year-wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
137	143	111	80	30

File Description	Document
Report of the event	View Document
Institutional data in prescribed format	View Document

3.3.3 Number of awards / recognitions received for research/innovations by the institution / teachers / research scholars / students during the last five years.

Response: 388

3.3.3.1 Total number of awards / recognitions received for *research* / innovations won by institution / teachers / research scholars / students year-wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
92	113	76	74	33

File Description	Document
Institutional data in prescribed format	View Document
e- copies of award letters	View Document

3.4 Research Publications and Awards

3.4.1 The Institution ensures implementation of its stated Code of Ethics for research through the following: 1. Inclusion of research ethics in the research methodology course work 2. Presence of Ethics committee 3. Plagiarism check through software 4. Research Advisory Committee

Response: A. All of the above

File Description	Document
Code of ethics for Research document, Research Advisory committee and ethics committee constitution and list of members on these committees, software used for Plagiarism check, link to Website	View Document

3.4.2 The institution provides incentives to teachers who receive state, national and international recognitions/awards 1. Commendation and monetary incentive at a University function 2. Commendation and medal at a University function 3. Certificate of honor 4. Announcement in the Newsletter / website

Response: A.. All of the above

File Description	Document
Institutional data in prescribed format	View Document

3.4.3 Number of Patents published / awarded during the last five years.**Response:** 24**3.4.3.1 Total number of Patents published / awarded year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
2	6	7	6	3

File Description	Document
Institutional data in prescribed format	View Document

3.4.4 Number of Ph.D's awarded per teacher during the last five years.**Response:** 4.01**3.4.4.1 How many Ph.D's are awarded within last five years.****Response:** 769**3.4.4.2 Number of teachers recognized as guides during the last five years****Response:** 192

File Description	Document
Institutional data in prescribed format	View Document
URL to the research page on HEI web site	View Document

3.4.5 Number of research papers per teachers in the Journals notified on UGC website during the last five years**Response:** 5.22**3.4.5.1 Number of research papers in the Journals notified on UGC website during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
673	423	401	409	351

File Description	Document
Institutional data in prescribed format	View Document

3.4.6 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

Response: 3.29

3.4.6.1 Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
358	384	235	260	186

File Description	Document
Institutional data in prescribed format	View Document

3.4.7 E-content is developed by teachers :

- 1.For e-PG-Pathshala
- 2.For CEC (Under Graduate)
- 3.For SWAYAM
- 4.For other MOOCs platform
- 5.Any other Government Initiatives
- 6.For Institutional LMS

Response: A. Any 5 of the above

File Description	Document
Institutional data in prescribed format	View Document
Give links or upload document of e-content developed	View Document

3.4.8 Bibliometrics of the publications during the last five years based on average citation index in Scopus/ Web of Science or PubMed

Response:

3.4.9 Bibliometrics of the publications during the last five years based on Scopus/ Web of Science - h-

index of the Institution**Response:****3.5 Consultancy****3.5.1 Institution has a policy on consultancy including revenue sharing between the institution and the individual and encourages its faculty to undertake consultancy.****Response:**

Academic, industry and research interactions are promoted through the consultancy policy. The consultancy policy of the University encourages and assists faculty to provide knowledge inputs sought by industry, government agencies or other academic / research organizations. The University motivates the professionally qualified faculty members to utilize their expertise for consultancy services, which give the chance to the faculty to use the expertise in industry and obtain real life experiences. The decision process related to permitting an individual faculty member to undertake consultancy is taken at the department level where all consultancy proposals are addressed by the respective Heads of the Departments. If any remuneration is received for these assignments, it is mainly used for updating infrastructure and other facilities.

The University guidelines clearly specify the revenue sharing among the faculty members concerned, department and the University, in the case of income generated through consultancy projects. As per the Institutional policy, 30% of this revenue is to be shared with the institution in the ratio 1: 5; one part (5% of total) goes to the Cochin University Fund (CUF) and the remaining 5 parts (25% of total) to the Department Development Fund (DDF). During the last five years Rs 1207 lakh received from consultancy to the university.

Consultancy Services are also provided through memberships in different committees and National Bodies. Many of the faculty members of the Department are members of Review Committee, Evaluation Boards, Board of Studies, Admission Committee, Research Committees, etc. through which they provide consultancy services to the Community at large. Revenue is also generated by consultancy services through project internships and sample analysis. The University extends support for providing the students from other Universities / colleges with an internship opportunity according to their area of interest and aptitude.

For establishing university - industry interface, invitations are given to eminent successful professionals from the industry so that the teachers and students are able to assimilate industry needs in such interactions.

Major Establishments and Best Practices in Consultancy are:

- 1.Sophisticated Test and Instrumentation Centre (STIC)
- 2.Sophisticated Analytical Instrument Facility (SAIF)
- 3.Advanced Centre for Atmospheric Radar Research (ACCAR)
- 4.National Centre for Aquatic Animal Health (NCAAH)

5. Industry linked projects through PDF mentored by members both from University and industry under RUSA
6. Career Guidance / counselling are provided to students every academic year prior to admission process for Graduate study.
7. Consultancy services are provided to various schools and colleges by faculty members.
8. Faculty members act as resource persons, judges and subject experts in various programs related to teaching and learning process.
9. Water quality and environment related work for public.
10. STIC provides consultancy and testing services to academics and researchers across India.
11. Accredited calibration services to industries.
12. Daily weather forecasting from ACCAR for the public and farmers.
13. Civil Engineering consultancy through faculty members of School/College of Engineering

File Description	Document
Paste URL of the consultancy policy document	View Document

3.5.2 Revenue generated from consultancy and corporate training during the last five years (INR in Lakhs).

Response: 1208.72

3.5.2.1 Total amount generated from consultancy and corporate training year-wise during the last five years (INR in lakhs).

2020-21	2019-20	2018-19	2017-18	2016-17
143.505	287.698	298.188	331.628	147.702

File Description	Document
Institutional data in prescribed format	View Document

3.6 Extension Activities

3.6.1 Extension activities in the neighbourhood community in terms of impact and sensitising students to social issues and holistic development during the last five years.

Response:

CUSAT is committed to social issues and plays an active role in sensitising the students and the neighbourhood communities about various topical issues with a sense of social responsibility. The CUSAT NSS Unit and the Department of Youth Welfare are the forerunners in the University for coordinating various activities for students and the general public.

The individual Departments, Centres and Schools of the University also play an active role in organising various extension activities covering different social issues for the benefit of students and the neighbourhood communities.

During the flood disaster in 2018, various departments of the University provided shelter to thousands of flood- affected families. Electrical installation survey was conducted, civil works were carried out in the selected affected areas, schools and lab equipment were also placed at the disposal of the government to combat the crisis. Data entry assistance for transferring relief funds to flood affected people was provided to personnel at the Collectorate, Ernakulum. During the 2019 landslide tragedies also, the Cochin University was in the forefront in rushing succour and support to the victims.

CUSAT organised an exhibition under the title, 'Sastrayan' in 2017 and in 2018. This was the first programme of this kind in the state of Kerala wherein the scope of various research outputs of the University was shared with the general public.

Centre for Science in Society (C-SiS) conducts several programmes for popularizing science among children 37,531 school children and 2585 teachers from 440 schools visited and participated in activities of C-SiS during July 2016 to January 2020.

Each individual department has organised a large number of awareness programmes for the general public and for school children in the neighbouring areas. Various activities in connection with National Science Day, World Environment Day, International Women's Day, Yoga Day, etc. were also conducted. 144 awards were received for 481 extension activities conducted during the last five years.

Major extension programmes conducted are:

1. Bike rally for alcoholism awareness
2. Butterfly gardening and planting of tree saplings
3. Interaction with inmates of old- age home
4. Road safety awareness programme
5. Cancer awareness programmes
6. Energy conservation programme
7. Vegetable cultivation under idle to ideal programme
8. Cleanliness drive as part of clean campus programme
9. Blood donation camp
10. Water and tree conservation programme by adopting green protocol
11. Gender sensitization programmes
12. Software development for *Kudumbashree*, VFPC and KILA

13. Visits to old- age homes and interaction with inmates
14. *Thanima* (An annual exhibition cum sale of native products)
15. Open and free programmes for school students to inculcate scientific temper
16. Awareness programme about the use of plastic and its recycling
17. Community intervention programmes related to community based care and support for people living with dementia
18. Testing of water quality and community intervention for solid waste management
19. Counselling programmes to help students aspiring for higher education
20. Low cost and effective domestic portable filtration units which offer a sustainable solution to the problems associated with lack of access to clean water in Alappuzha
21. Legal Aid Clinic
22. Entrepreneurship Club and Cells.

File Description	Document
Upload any additional information	View Document

3.6.2 Number of awards received by the Institution, its teachers and students from Government /Government recognised bodies in recognition of the extension activities carried out during the last five years

Response: 144

3.6.2.1 Total number of awards and recognition received for extension activities from Government/ Government recognised bodies year-wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
42	23	41	25	13

File Description	Document
Institutional data in prescribed format	View Document
e-copy of the award letters	View Document

3.6.3 Number of extension and outreach programs conducted by the institution through NSS/NCC, Government and Government recognised bodies during the last five years

Response: 481

3.6.3.1 Number of extension and outreach programs conducted by the institution those through NSS/NCC, Government and Government recognised bodies during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
295	80	60	24	22

File Description	Document
Reports of the event organized	View Document
Institutional data in prescribed format	View Document

3.6.4 Average percentage of students participating in extension activities listed at 3.6.3 above during the last five years

Response: 65.15

3.6.4.1 Total number of students participating in extension activities listed at 3.6.3 above year-wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
8495	8294	8206	1361	948

File Description	Document
Report of the event	View Document
Institutional data in prescribed format	View Document
Any additional information	View Document

3.7 Collaboration

3.7.1 Number of Collaborative activities for research, Faculty exchange, Student exchange/ internship per year

Response: 173.8

3.7.1.1 Total number of Collaborative activities with other institutions / research establishment / industry for research and academic development of faculty and students year-wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
231	179	173	165	121

File Description	Document
Institutional data in prescribed format	View Document

3.7.2 Number of functional MoUs with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years.

Response: 103

3.7.2.1 Number of functional MoUs with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research year-wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
15	18	19	25	26

File Description	Document
Institutional data in prescribed format	View Document
e-copies of the MoUs with institution/ industry	View Document

Criterion 4 - Infrastructure and Learning Resources

4.1 Physical Facilities

4.1.1 The institution has adequate facilities for teaching - learning. viz., classrooms, laboratories, computing equipment, etc.

Response:

Cochin University of Science and Technology has three campuses – the Main Campus at Thrikkakara, the Lakeside Campus in Kochi city and the Rural Campus at Pulinkunnu, Alappuzha.

The University campus is spread over an area of 213 acres (86 hectares) across the three campuses. The availability of space, infra-structure, classrooms, faculty strength, research laboratories, etc. are taken into consideration while initiating new academic programmes and increasing the student strength. This has enabled us to optimize the utilization of available space in a well-planned manner.

The classrooms /laboratories /seminar halls and meeting rooms of Departments /Schools/Centres are sufficient in number and are well equipped with ICT tools. The total number of class rooms and seminar halls in the departments/schools/centres is 220. The Science/Technology/Engineering departments/schools have set up well equipped laboratories of their own. The class rooms/seminar halls / laboratories are provided with LCD projectors.

At least one class room in each department is equipped with interactive smart board in addition to white/black boards. It enables the departments to produce short educational videos. Teachers/ staff and students have access to internet across the campus. This facilitates dynamic teaching-learning environment, enabling access to videos and other online resources, e-books, MOOCs, online courses, online journals and e-databases which are subscribed. All the Departments/Schools/Centres have their own Seminar Halls/Auditoriums. The Seminar Complex of the University consists of an auditorium with a seating capacity of 750, and two seminar halls with a seating capacity of 150 and 60 respectively. In addition to this, there is an open air auditorium on the campus with a seating capacity of about 1000.

University Central Library has excellent centralized library resources and reading hall. Subject-specific libraries with specialized books, volumes/ periodicals and other essential resources are available for students at Departments/Schools/Centres.

Dedicated computer labs are available at various departments/schools. Student computer ratio is 1:4. Faculty members have also been provided with desktop/laptop. The following computing software is made available on the campus besides open source software:

MATLAB

SPSS

STAAD

Plaxis3D

LabVIEW

AutoCAD

Minitab

In the context of science, technology and engineering disciplines, laboratories are those ingredients which test and verify the scientific pursuits.

The departmental laboratories and the facilities available at the Sophisticated Test and Instrumentation Centre (STIC), the only one Central Instrumentation laboratory, testify to the exercise of scientific knowledge and experiments of the blooming scholars of the University.

Presence of major scientific instruments and equipment like – Gas Chromatography with Mass Spectrophotometer, HPLC, Stereoscopic Microscope, Polarimeter, Fiber Optic Fluorescence Spectrometer, Atomic Absorption Spectrometer, Sonic Anemometer, PCR unit – Automatic Thermocycler, Protein gel electro phoretic system, Inverted phase contrast microscope, Ultra centrifuge, ICP-AES Spectrometer, Thermal Analyser DSC, Thermal Analyser DTA/TGA, UV -Vis-NIR Spectrophotometer with internal DRA, FT-IR Spectrometer, X-ray powder Diffractometer, 200 KV Transmission Electron Microscope, 400 MHz FT-NMR Spectrometer, Scanning Electron Microscope with EDS, etc. in the labs cumulatively speak of both the quality and quantitative aspects of lab equipment available in the University.

File Description	Document
Upload any additional information	View Document

4.1.2 The institution has adequate facilities for cultural activities, yoga, games (indoor, outdoor) and sports. (gymnasium, yoga centre, auditorium, etc.)

Response:

Sports and Games

CUSAT pays extra attention to the holistic development of the students and staff by providing various sports activities. Sportspersons are admitted to various academic programmes as per the norms formulated by the State Government. CUSAT has created and been maintaining excellent facilities for sports and games, both indoor and outdoor. The achievements of the students in multiple sports activities point to the dedicated attention and devotion, which are mainly promoted through the office of the Director of Physical Education. The Director of Physical Education plays a supervisory role to initiate, execute, coordinate, and supervise physical education, sports activities and programmes that enhance general/specific interest in sports, which are conducted throughout the year. The University has earned recognition at the South Zone Inter University Competitions and All India Inter University Competitions on several occasions. The outreach of our infrastructure has grown regularly and is used not only by students/faculty/staff but also by corporate houses, NGOs, amateur and professional Sports Associations and Clubs.

The following facilities are available on the campus for sports and games:

1. Multi purpose Track and Field (outdoor), Foot ball, Cricket
2. Indoor Stadium for Shuttle Badminton and Table Tennis
3. Basket ball court (out door – 2 nos.)
4. Volley ball court (out door – 2 nos.)
5. Health and Fitness Centre

6. A gymnasium has been set up in one of the ladies' hostels to cater to the needs of the girl students.

The services of expert coaches from outside are being utilised for training the students in various sports and games items.

Cultural Activities

Cultural activities are an intrinsic part of the University life which provides the platform for enhancing the creativity, personality, world view of the students and retaining the national and regional cultural legacy. The Open Air Auditorium on the campus hosts most of the cultural events that take place on the campus.

Cochin University Union, the umbrella student organization, constituted under the Cochin University of Science and Technology Act, 1986 promotes the social and cultural life of students. The University Union organizes the yearly flagship programme 'Sargam' to identify and nurture the cultural and artistic talents among the students. Competitions for various art forms like music, dance, drama, painting, etc. are held as part of Sargam. The University awards grace marks to students who win prizes in the various inter collegiate and inter University arts/cultural competitions/sports and games.

Yoga

The University promotes the practice of Yoga among students and staff as an integrative approach to bring deep harmony and balance to body and mind. Yoga sessions are regularly conducted on the campus for the benefit of students, teachers and staff under the supervision of a trained Yoga teacher. The International Yoga Day is observed on the campus every year.

File Description	Document
Upload any additional information	View Document

4.1.3 Availability of general campus facilities and overall ambience

Response:

The overall ambience of the campus reflects the sustainable foundations of the institution - calmness, proximity to nature, lush green landscape, and open spaces; besides it serves to attract for social gatherings that underscore the youthful vibrancy of a campus.

The campuses of CUSAT provide comprehensive facilities for all aspects of student life and personality development. These facilities can be categorised into the following main functional divisions:

Accommodation: The University provides on campus accommodation for over 2300 students in

14 hostels which are fully well furnished to double for a home away from home to the students. There are dedicated hostels for boys and girls, and for UG and PG students. There are eight hostels for boys and six

hostels for girls. In addition to these hostels, there is an International Hostel to accommodate students from other countries. Messes are provided in the hostels and they are run by students' committees under the supervision of hostel wardens/managers/matrons.

The University Guest House and the Visiting Faculty Complex consist of 15 fully furnished rooms to cater to the needs of visitors.

The University quarters provide accommodation to faculty members and staff. Hostels for bachelor faculty members and staff members have also been set up.

Canteens: Four canteens (two on the main campus, one each in School of Engineering and Cochin University College of Engineering Campuses) and a kiosk are providing quality snacks and nourishments.

Safety and Security: Campus safety and security services include 24-hour foot and vehicle patrols, 24-hour emergency telephones, lighted pathways/sidewalks, and restricted access to hostels.

Sports Facilities: Specialized sports facilities, such as gymnasium with its fitness equipment,

Shuttle badminton courts, basket ball courts, football grounds, cricket pitches, running tracks, etc. are available on CUSAT campus.

Medical Facilities: The Medical Centre located inside the campus provides first aid medical care. Government Medical College, Ernakulam is located just 1.5 km away from the main campus. The services of a doctor have been made available in the campus medical centre from 4 p.m. to 6 p.m. on all days.

Other amenities in the campus include Bank and ATMs, Post-Office, and Child-Care Centre

File Description	Document
Upload any additional information	View Document

4.1.4 Average percentage of expenditure for infrastructure augmentation excluding salary during the last five years (INR in Lakhs)

Response: 39.56

4.1.4.1 Expenditure for infrastructure augmentation, excluding salary during the last five years (INR in lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
785.75	1146.26	1435.61	1603.55	1809.66

File Description	Document
Upload audited utilization statements	View Document
Institutional data in prescribed format	View Document

4.2 Library as a Learning Resource

4.2.1 Library is automated using Integrated Library Management System (ILMS) and has digitisation facility

Response:

The University Library is fully automated using integrated library management system. The University Library has well developed infrastructure and has a built up area of 1600 sq.m. In addition to the central library, departmental libraries cater to the resources pertaining to specialised knowledge areas.

The Cochin University library became the first university library in the state of Kerala to be fully automated in the year 2000. Located centrally on the campus, the resources of the library are open to all the departments of the university. One of the best libraries of science and technology in the country, the university library also maintains a balanced collection of books for general reading and references.

The library has been using the open source platform KOHA for library automation. It has modules for classification and access for books and journals.

At present the collection exceeds 133000 inclusive of several valuable reference books, doctoral theses and back volumes of periodicals, patents, CD-ROM etc.

The library has campus wide- IP enabled access to a wide range of electronic databases, e-journals and online books which in turn assist the productivity of the university academics to a great extent. The Library provides access to around 60 print periodicals, 9247 e-journals, J-Gate Access journals (7900 numbers), 11 databases, and 1500 e-books. The academic community of CUSAT can access e-books, theses database, journal database, e-journals and other e-resources from any terminal within the University campus. Online access is also provided to citation and scientometric databases, such as Web of Science.

The library also facilitates access to a number of electronic journals through its participation in the consortia -E- Shod Sindhu, a project initiated by the MHRD and executed by INFLIBNET.

Members can avail themselves of the service of DELNET, UGC-INFONET, JCCC portal (an e-journals gateway to Indian Universities & Colleges) which also provides ILL between various Universities in India.

The bibliographic records of books, journals and theses in the Library can now be accessed globally through the web OPAC facility. The University Library also provides anti-plagiarism services to researchers. Dyuthi, the digital repository of Cochin University of Science and Technology collects, preserves, and distributes digital material. It facilitates the preservation of Ph.D. theses and other scholarly communications.

File Description	Document
Upload any additional information	View Document

4.2.2 Institution has access to the following: 1. e-journals 2. e-ShodhSindhu 3. Shodhganga Membership 4. e-books 5. Databases 6. Remote access to e-resources

Response: A. Any 4 or more of the above

File Description	Document
Upload any additional information	View Document
Institutional data in prescribed format	View Document

4.2.3 Average annual expenditure for purchase of books/ e-books and subscription to journals/e-journals during the last five years (INR in Lakhs)

Response: 293.82

4.2.3.1 Annual expenditure for the purchase of books and journals including e-journals year-wise during last five years (INR in Lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
343.78	293.51	114.31	463.69	253.82

File Description	Document
Institutional data in prescribed format	View Document
Audited statements of accounts	View Document

4.2.4 Percentage per day usage of library by teachers and students (foot falls and login data for online access) during the last completed academic year

Response: 42.02

4.2.4.1 Number of teachers and students using library per day over last one year

Response: 3804

File Description	Document
Details of library usage by teachers and students (Library accession register, online accession details to be provided as supporting documents)	View Document

4.3 IT Infrastructure

4.3.1 Percentage of classrooms and seminar halls with ICT - enabled facilities such as LCD, smart board, Wi-Fi/LAN, audio video recording facilities. (Data for the latest completed academic year)

Response: 100

4.3.1.1 Number of classrooms and seminar halls with ICT facilities

Response: 220

File Description	Document
Institutional data in prescribed format	View Document

4.3.2 Institution has an IT policy, makes appropriate budgetary provision and updates its IT facilities including Wi-Fi facility

Response:

Cochin University of Science and Technology has formulated an IT policy and has made adequate budgetary provisions for updating the IT infrastructure including internet connectivity.

The Centre for Information Resources and Management (CIRM) is the nodal point in CUSAT, which caters to ICT requirements of the University. Keeping education and research in sync with modernization, CUSAT has been leveraging ICT as a tool to induce strategic improvement and changes in both academic and administrative practices. The CIRM plays an important role in creating an enabling environment for teaching-learning, research and governance.

A connected campus with ubiquitous access of internet is the backbone of ICT infrastructure. The entire University campus has a Fiber Optic LAN of 12 KM and UTP cable of 250 KM length providing network to over 1200 PCs/ Workstations/Thin Clients/Laptops other than Wi-Fi connections across the campus. As of today, 100% campus is Wi-Fi enabled, providing secured access to all the students, faculty and other staff through a state-of-the art hardware firewall (Universal Threat Management box) system.

CIRM offers essential ICT services including a state-of-the-art data center, hosting of servers including university and department websites, computing services, online teaching-learning services, Internet Access, IP based Intercom, Email, e-Governance services, MIS, IT security, campus Wi-Fi, In-house software development and maintenance, problem diagnostics and troubleshooting, etc. through a network comprising approximately 30 physical servers, 5 core switches, and 120 distribution switches. The Centre administers a 1Gbps link to National Knowledge Network (NKN) to provide smooth internet facility and access to online learning materials. Besides, the Centre manages an additional Internet bandwidth of 250 Mbps available from BSNL. New features, such as On-line E-Contents, On-line Admissions, Fee payment, etc. have also been maintained by the Centre.

File Description	Document
Upload any additional information	View Document

4.3.3 Student - Computer ratio (Data for the latest completed academic year)**Response:** 4:1

File Description	Document
Upload any additional information	View Document

4.3.4 Available bandwidth of internet connection in the Institution (Leased line)**Response:** A. ?1 GBPS

File Description	Document
Details of available bandwidth of internet connection in the Institution	View Document

4.3.5 Institution has the following Facilities for e-content development

1. Media centre
2. Audio visual centre
3. Lecture Capturing System(LCS)
4. Mixing equipments and softwares for editing

Response: A. All of the above

File Description	Document
Upload any additional information	View Document
Institutional data in prescribed format	View Document
Links of photographs	View Document

4.4 Maintenance of Campus Infrastructure**4.4.1 Average percentage expenditure incurred on maintenance of physical facilities and academic support facilities excluding salary component during the last five years****Response:** 51.44**4.4.1.1 Expenditure incurred on maintenance of infrastructure (physical facilities and academic**

support facilities) excluding salary component year-wise during the last five years (INR in lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
1220.90	1712.21	2017.56	1807.81	1857.72

File Description	Document
Institutional data in prescribed format	View Document
Audited statements of accounts	View Document

4.4.2 There are established systems and procedures for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc.

Response:

Cochin University of Science and Technology has developed a maintenance manual which gives the procedures for maintaining and utilising physical, academic and support facilities.

The University follows three-tiered system for maintenance, in-house maintenance support, AMC to OEMs/reputed service providers and outsourcing to expert agencies. The maintenance of all the University properties, including classrooms and laboratories, is done by the Engineering Department of the University headed by the University Engineer. The Engineering Department has an Executive Engineer, Asst. Executive Engineers, Asst. Engineers, Overseers and other staff (Civil and Electrical).

The team looks after the repair and maintenance of the University buildings/Power Stations, supply and connections from maintenance fund allocated by the University. The department maintains the records pertaining to the lands/ buildings of the University and deals with various processes for space allocation on the University campus, including allotment of University accommodation as per requirement. The green initiatives and maintenance of the University gardens, parks, sport grounds/fields and lawns of the University are also dealt with by the Engineering Department. It has caretakers to assist the in-charge in the upkeep, preservation and maintenance of the lawns, gardens, etc. The Physical Education Department and the Engineering Department work in tandem to maintain the Sports Complex, play grounds etc.

The Purchase sections at the Departments/Schools/Centres deal with purchase and procurement related issues and procedures including e-tenders. It also maintains records of the machine/equipment and other belongings of the University and deals with annual maintenance contract of each equipment/instrument. The stock registers/log books are maintained at relevant department/centre. For specific equipment at departments/schools/centres, maintenance/repair is undertaken by the head/director concerned of the department/school/centre as per laid down procedures of General Financial Rules (GFR) in accordance with applicable rules of the University. The maintenance of equipment is done through Annual Maintenance Contract (AMC) or similar processes. Customs duty/GST exemption certificate is issued for any equipment imported/ordered by the University for which University renews the DSIR registration on regular basis as per GFR.

File Description	Document
Upload any additional information	View Document

NAAC

Criterion 5 - Student Support and Progression

5.1 Student Support

5.1.1 Average percentage of students benefited by scholarships and freeships provided by the institution, Government and non-government agencies (NGOs) during the last five years (other than the students receiving scholarships under the government schemes for reserved categories).

Response: 27.04

5.1.1.1 Number of students benefited by scholarships and free ships provided by the institution, Government and non-government bodies, industries, individuals, philanthropists during the last five years (other than students receiving scholarships under the government schemes for reserved categories)

2020-21	2019-20	2018-19	2017-18	2016-17
2097	2318	2311	2246	2151

File Description

Document

Upload self attested letter with the list of students sanctioned scholarship

[View Document](#)

Institutional data in prescribed format

[View Document](#)

5.1.2 Average percentage of students benefited by career counseling and guidance for competitive examinations offered by the Institution during the last five years.

Response: 57.56

5.1.2.1 Number of students benefitted by guidance for competitive examinations and career counselling offered by the institution year wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
7235	4987	4443	4483	2752

File Description

Document

Institutional data in prescribed format

[View Document](#)

5.1.3 Following Capacity development and skills enhancement activities are organised for improving students capability 1. Soft skills 2. Language and communication skills 3. Life skills (Yoga, physical fitness, health and hygiene) 4. Awareness of trends in technology

Response: A. All of the above

File Description	Document
Institutional data in prescribed format	View Document

5.1.4 The institution adopts the following for redressal of student grievances including sexual harassment and ragging cases

- 1. Implementation of guidelines of statutory/regulatory bodies**
- 2. Organisation wide awareness and undertakings on policies with zero tolerance**
- 3. Mechanisms for submission of online/offline students' grievances**
- 4. Timely redressal of the grievances through appropriate committees**

Response: A. All of the above

File Description	Document
Upload any additional information	View Document
Minutes of the meetings of student redressal committee, prevention of sexual harassment committee and Anti Ragging committee	View Document
Details of student grievances including sexual harassment and ragging cases	View Document

5.2 Student Progression

5.2.1 Average percentage of students qualifying in state/national/ international level examinations during the last five years (eg: IIT-JAM/CLAT/ NET/SLET/GATE/ GMAT/CAT/GRE/ TOEFL/ Civil Services/State government examinations, etc.)

Response: 71.1

5.2.1.1 Number of students qualifying in state/ national/ international level examinations (eg: IIT/JAM/ NET/ SLET/ GATE/ GMAT/CAT/GRE/ TOEFL/ Civil Services/ State government examinations, etc.)) year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
89	280	250	170	100

5.2.1.2 Number of students appearing in state/ national/ international level examinations (eg: IIT/JAM/ NET / SLET/ GATE/ GMAT/CAT,GRE/ TOEFL/ Civil Services/ State government examinations) year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
135	370	343	226	152

File Description	Document
Institutional data in prescribed format	View Document

5.2.2 Average percentage of placement of outgoing students during the last five years

Response: 24.56

5.2.2.1 Number of outgoing students placed year - wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
597	628	518	459	354

File Description	Document
Self attested list of students placed	View Document
Institutional data in prescribed format	View Document

5.2.3 Percentage of student progression to higher education (previous graduating batch).

Response: 6.74

5.2.3.1 Number of outgoing student progressing to higher education.

Response: 148

File Description	Document
Upload supporting data for student/alumni	View Document
Institutional data in prescribed format	View Document

5.3 Student Participation and Activities

5.3.1 Number of awards / medals won by students for outstanding performance in sports / cultural activities at inter-university / state / national / international events (award for a team event should be counted as one) during the last five years.

Response: 178

5.3.1.1 Number of awards/medals won by students for outstanding performance in sports / cultural activities at inter-university / state / national / international events (award for a team event should be counted as one) year - wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
37	77	45	11	8

File Description	Document
Institutional data in prescribed format	View Document

5.3.2 Presence of Student Council and its activities for institutional development and student welfare.

Response:

Activity of Student Council

- **Students' Union (Student Council at CUSAT is known as Students Union)**
 - Democratically elected students' union and its activities are the highlight of the student-centered activities on the campus. The Students' Union functions as the democratic representative body of students. One representative from each of the programmes (from each of the batches) spread across the departments of the University forms the university union. The Students' Union serves as a via-media between the student community and the University for presenting the interests and grievances of the student community before the authorities and also promotes academic deliberations as well as extra curricular activities in the university. Funding for Students' Union is earmarked through university budget allocation. Every year, an amount is earmarked from the University budget for the Students' Union activities (Rs 9.8 lakh in 2020). Funding from the University facilitates the smooth conduct of University Union activities.
 - **Major activities of Students' Union include:**
- **Organizing academic and cultural events**
 - 'Sargam' is the annual arts and cultural fest of CUSAT (spanning five days) organized by the Students' Union comprising various arts and cultural activities including onstage and offstage events.
 - Union also organizes "MEDHA", an academic event which hosts several seminars, workshops and webinar series to discuss emerging social issues..
- The Students' Union provides opportunities for leadership development.

- Students' Union played an active role in socially relevant activities like flood related rehabilitation and disaster mitigation activities over the previous three years when unexpected floods and landslides hit Kerala.

Student representatives in academic and administrative bodies

Students have an active involvement in academic and administrative bodies of the University. Student representatives are present in the administrative bodies like Syndicate, Senate and academic Bodies including academic council, Internal Quality Assurance Committee and other committees like anti-ragging committee and committee for student grievances. Student requirements and grievances are brought to light to authorities through deliberations in these bodies.

Other Student committees in University

- National Service Scheme: NSS units in the University are also manned by students. NSS volunteer secretaries in addition to a programme officer from among the faculty are in the forefront. Safe to eat vegetable campaigns, vegetable cultivation, environment friendly activities, personality development programmes, blood donation and community outreach activities are undertaken by the NSS volunteers.
- Student Cultural Clubs: Departmental student clubs/councils conduct annual meet (Tech fest (SoE), Talent time (SMS) etc. These are national level events organised by students, enhancing the organising capability of students in a spectrum of activities including mobilisation of funds, design and promotion of events, conduct of events, etc. Freshers' day and farewell to graduating students, etc. are regularly organised by students.
- Entrepreneurship Clubs: for fostering students' interest in entrepreneurship (SMS, SoE, SLS, DDUKK). The clubs are run by student secretaries who coordinate various activities like entrepreneurship and mentoring sessions and events.
- Student Placement Committee: for coordinating activities for trainings, placement brochure and placement drives (SMS, SoE)

File Description	Document
Upload any additional information	View Document

5.3.3 Average number of sports and cultural events / competitions organised by the institution per year

Response: 56.6

5.3.3.1 Number of sports and cultural events / competitions organised by the institution year - wise during the last five years.

2020-21	2019-20	2018-19	2017-18	2016-17
19	82	74	57	51

File Description	Document
Report of the event	View Document
Institutional data in prescribed format	View Document

5.4 Alumni Engagement**5.4.1 The Alumni Association / Chapters (registered and functional) contributes significantly to the development of the institution through financial and other support services.****Response:**

The University has a very strong and vibrant alumni network organised under the respective departments. The University Alumni Association is instrumental in evolving better coordination. A Global Alumni Conclave was conducted by the University Alumni Association in 2020.

University alumni adorn key positions as renowned educators, engineers, researchers, industrialists, team leaders, inventors, entrepreneurs, etc in India and abroad. There are several distinguished alumni of CUSAT who are placed as CEOs/ VCs/in top most positions in Government machineries and private/public sector undertakings..

In addition to financially contributing to the development, alumni help, guide and participate in various activities of the Departments and University. The following shows how the support of alumni is utilised by various departments.

Financial

- Alumni Associations receive financial contributions in terms of alumni registration fee and donations. As of now, alumni contribution of different departments of the University amounts to Rs 62.95 lakhs.
- Alumni Association lends a hand to the departments in organizing conferences/seminars and competitions by providing financial support. Alumni Association of the Department of Physics sponsors an ever-rolling trophy for the State Level Quiz competition conducted by the Department as part of the National Science Day Celebrations. Alumni of School of Legal Studies (SLS) has contributed to 'Yukthi Legal Fest' financially; Alumni of School of Management Studies (SMS) also generously support "Talent Time", the national level event organised by students.

- Alumni Association extends support by contributing to improving/ donating infrastructure. The Department of Computer Science, SMS, SLS and Department of Ship Technology received generous support from alumni in refurbishing the classrooms and contribution of interactive boards through crowd funding from various batches of alumni.
- Some of the departments have instituted endowments for promoting student excellence in learning as well as research. Many of these awards are instituted in the names of retiring teachers. Prof. M.R. Anantharaman endowment award for Best Research Paper (Department of Physics) and A.K Menon endowment in the Department of Computer Science has been instituted by the alumni of respective departments. The Department of Ship technology has instituted awards for meritorious students. The Alumni Association has instituted Gold medals for LLB & LLM Courses.
- Assistance to financially backward students is also envisaged by means of alumni support. Alumni of SMS have instituted endowments for supporting financially backward students.
- Support to society: Alumni raised funds for supporting flood relief camps in Kerala and for contributing to CMDRF

. Non-financial

- The University has initiated adjunct alumni faculty position and distinguished alumni lecture series to share personal, research and industrial experiences and insights of distinguished members.
- Mentoring support for students by organising personality development sessions. Alumni members of SMS share practical insights and involve in soft skills development of students.
- Continuous support to students for internships and placements.
- Suggestions are solicited for improving current trends in academic activities including syllabus revision and course design to improve the quality.
- SLS conducts Yukthi Legal Fest for which alumni serve as the judging panel.

File Description	Document
Any additional information	View Document

5.4.2 Alumni contribution during the last five years (INR in Lakhs)

Response: B. 50 Lakhs - 100 Lakhs

File Description	Document
Any additional information	View Document

NAAC

Criterion 6 - Governance, Leadership and Management

6.1 Institutional Vision and Leadership

6.1.1 The institution has a clearly stated vision and mission which are reflected in its academic and administrative governance.

Response:

Cochin University of Science and Technology was established as a unitary University with an objective to offer state- of- the- art programmes across a spectrum of disciplines in frontier areas ranging from engineering, science and technology to humanities, law and management with main focus on postgraduate studies and research. 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 deify us both the teacher and the taught*.

The pursuit of excellence as articulated in the vision and mission statements is reflected in the academic and administrative policies and programmes of the University.

Vision

The University aims to become an Institution of Global Standard by continuously improving its quality of academic activities, taking up research and innovation in the frontier areas and by ensuring conducive state-of-the- art infrastructural facilities.

Mission

CUSAT will continuously strive to generate human resources of global competence by imparting most modern knowledge and training to its student community and by taking up Research and Development activities in the frontier areas so as to contribute positively to the progress of the society and the nation. The University shall have the following objectives as its mission:

1. to encourage and promote research and innovation in applied science, technology, industry, commerce, management and social science for the advancement of knowledge and for the betterment of society;
2. to provide facilities and offer opportunities for graduate and postgraduate education in applied science, technology, industry, commerce, management and social science by instruction, training, research, development, innovation and extension and by such other means as the University may deem fit;
3. 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;
4. 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;
5. to organize exchange programmes with other institutions of repute in India and abroad with a view to keeping abreast of the latest innovation and developments in relevant areas of teaching and research.

The statutory bodies like the Syndicate and the Academic Council are rich in diversity with adequate representation from industry, academia, students and from various sections of the society. Setting up a Technology Business Incubator, (CITTIC), Centre for Science in Society (C-SiS), Virtual Centres of Interdisciplinary Research, IPR Centre, Centres of Excellence in various technology domains are examples of operationalization of **mission to support research and innovation**.

The flexible and responsive structure helps in **launching new programmes** in response to the global and local needs as envisaged **in the mission**. PG programmes in Artificial Intelligence, Soft Computing, Financial Technology, Data Science, Defense Technology are examples.

The mission to foster co-operation with outside entities has resulted in a range of functional MOUs with institutions of repute both in India and abroad.

6.1.2 The effective leadership is reflected in various institutional practices such as decentralization and participative management.

Response:

The Honorable Governor of Kerala is the Chancellor and the Minister for Higher Education, Kerala state functions as Pro Chancellor of the university. The Vice Chancellor is the Chairman of the Syndicate, the chief executive body of the university. The Pro Vice Chancellor, Registrar, Controller of Examinations and the Finance Officers are the other statutory Officers in the university. Different representatives from government, accomplished academicians, experts from industries, local bodies, students etc are participated in the statutory bodies like syndicate, senate academic council so that all university policies are taken by the group of all stake holders.

Department council, comprising all permanent faculty members takes a decisive role in all matters regarding the administrative policies and academic activities of the Department. Head/Director of all academic departments is rotated for every three years from among Professors and Associate Professors.

Administrative Structure

1. Honorable Governor of Kerala is the Chancellor
2. Honorable Minister of Higher Education is the Pro Chancellor
3. Syndicate is the chief executive body of the University representing members from Academics, Industry, Deans etc., with Vice Chancellor as the Chairman. A lady representative, nominee of SC/ST, student representative, Government nominees from Higher Education and Finance also forms this group. Syndicate normally meets once in a month.
4. Senate comprise members various academic, non academic, industry and local bodies. It reviews the general policies of the university and suggests measures for improvement and development from time to time. The Senate normally meets once every 4 months.
5. Academic Council consist all Deans and Head of Departments, Chairmen of Board of Studies etc.,

is the principal academic body of the university and has powers to coordinate and exercise general supervision over the academic programmes and policies of the university. It is also responsible for the maintenance of standards of instruction, research, education and examination within the university. The academic council normally meets once in 4 months.

6. Faculties and Board of Studies recommends the revision of syllabi, new courses, new specializations etc., with input from various stake holders.
7. Planning committee, Finance committee, Staff counsel etc., involves in various general decision making policies.
8. The Department governance is decentralized through an all inclusive strategy of multiple hierarchies with Department Council and Department Research Committee with all permanent faculties/research guides. All regular full time faculty members from the department who have been recognized as research guide are members of the research committee. The committee is responsible for the process of admission of PhD students and regular monitoring of the progress of research scholars. There is a doctoral committee for each research for the close observation their research.
9. Purchase committee, Waste Disposal committees, Anti ragging committee, Sexual Harassment committee, Grievance Redress cell etc. are also functioning within the university.
10. The various programmes conducted by the department are planned and organized with the involvement of students to nurture their leadership qualities and effective organizing skills.

6.2 Strategy Development and Deployment

6.2.1 The institutional Strategic plan is effectively deployed.

Response:

Institutional Strategic Plan of CUSAT is guided by its vision and mission statements. The university has identified the several objectives taking the stakeholders such as students, faculty, non-teaching staff, alumni, Industry partners into confidence and effective strategic plans are deployed for attaining these objectives. The objectives can be broadly classified as MEASURES FOR ACADEMIC EXCELLENCE and MEASURES FOR INNOVATION EXCELLENCE.

Measures like Outcome Based Education, Detailed Academic, Alumni Adjunct Faculty, BOS with Industry representation are examples under academic excellence. Seed fund for teachers, setting up of research labs etc are measures under innovation excellence.

We describe one illustrative example under INNOVATION EXCELLENCE.

SETTING UP OF STARTUP ECOSYSTEM

With the objective of promoting entrepreneurial culture among students, CUSAT set up a **Centre for Entrepreneurship (CITTIC)** in 2014. The centre started functioning in a small way with a series of training workshops and seminars for the interested students.

Based on the proposal submitted by the University, the state government sanctioned Rs 1 Crore to elevate CITTIC as a Technology Business Incubator. CITTIC started with 8 incubates in 2015-16.

Then onwards, a series of measures were taken to provide an innovative and entrepreneurial environment for faculty and students to run university-connected start-up companies. They included (1) Improving Physical Infrastructure (2) Improving quality and quantity of startups.

A new 3000 sq. ft. Technology Business Incubator named RUSA Innovation Startup Ecosystem (RISE) is set up with financial support from RUSA. It provides necessary infrastructure support for IT, Electronics, Biotech and Marine startups. It also has a bio incubator in-house. Construction of another 10000 sq ft. startup space with necessary equipment and facilities has started.

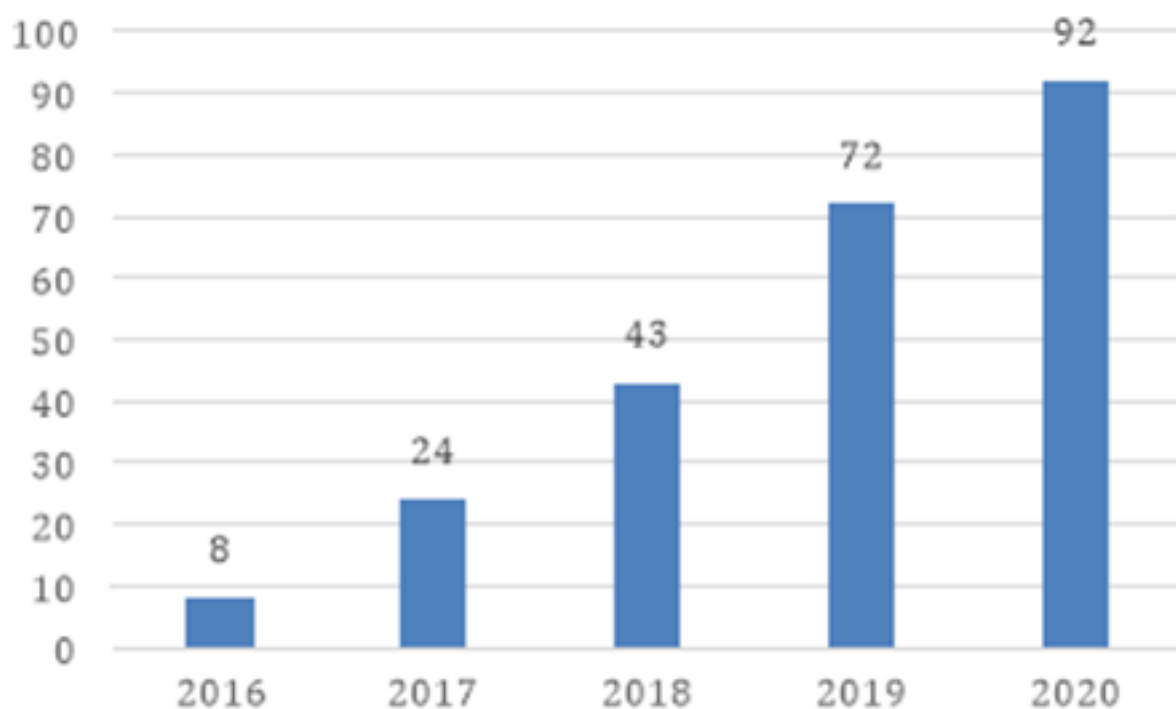
A FABLAB sponsored by Kerala Startup Mission is setup to provide the students easy access to digital fabrication technologies. It comprises of Laser Engraver, Top Notch 3D Printers, CNC Milling Machine with scan unit, Vinyl Cutter, Electronics Workbench, Dexter boards etc

CUSAT has come out with a startup fund with the objective of helping our students and researchers to convert their innovative ideas into full-fledged ventures. Startup grant 2020 was disbursed under two heads namely startup grant and Covid Response Grant. 24 startups under various domains received a total amount to the tune of Rs 30 lakhs. Many firms incubated with CUSAT TBI have won startup grants from various agencies including Nidhi Prayas, BIRAC, KSUM and Maker village.

To create a culture of innovation, regular events organized by CITTIC in the campus including HACKATHONES and ENTREPRENEURSHIP AWARENESS CAMPS

Now there are 48 startups in CUSAT mainly run by our students, Scholars and Alumni across a range of domains. We have incubated 93 startup companies in the last five years providing employment support for over 300 youngsters. CUSAT has implemented a Student Entrepreneurship policy by which students registering startups with TBI are eligible for grace mark up to 4% and attendance up to 20%. More than 100 students have availed this across 3 years.

Number of Incubates at CITTIC, CUSAT



6.2.2 The functioning of the institutional bodies is effective and efficient as visible from policies, administrative setup, appointment and service rules, procedures, etc.

Response:

The University is generally administered through the decisions taken by the Syndicate, Senate and Academic Council of various establishments and academic matters. Deans of various faculties, Heads/

Directors of various academic departments and Boards of studies consisting of academics from various fields makes recommendations for various academic activities.

All matters regarding the administrative policies and academic activities of the Department shall be decided by the Department Council which comprises all the permanent faculty members. The Council shall be the decisive body for the assignment of the academic work and allocation of infrastructural facilities. The Head of the Department shall place before the Council a report indicating the compliance of the academic schedule of each faculty member during the period under report. The Council shall take appropriate measures for the utilization of the budget allocations. In the Departments, faculty members are assigned various responsibilities, including academic, administrative, mentoring, placement, alumni, etc.

The Department Research Committee with all the Research supervisors takes decisions on research items, such as admission, evaluation, etc. There is a Doctoral committee for closely observing research progress of each student.

Detailed minutes of the Syndicate, Senate, Academic Council, Department Council, etc. are circulated among the members and actions are taken based on the same.

All India notifications are given through the University website for faculty recruitment and in national dailies for the faculty recruitment and the recruitments are made from candidates on an all India basis.

The method of selection is strictly in conformity with the UGC/AICTE regulations and also as per the reservation policies of the state governments from time to time.

Non teaching/Administrative staff members are appointed through the State Public Service Commission.

Kerala State Service Rules are binding on all employees.

All the reservation policies are observed for all recruitments including contract appointments.

The file flow system is paperless and through File Flow Management System using soft copies of the documents and all the files can be tracked at each stage and appropriate decisions can be taken accordingly.

A Section Officer is named Administrative Officer and is placed in charge of the administrative matters of each academic department with a control on all the non-teaching staff.

The University implements the Government orders, UGC/AICTE regulations pertaining to the teaching staff and non teaching staff as and when received.

All UGC/AICTE regulations endorsed by the Government of Kerala are implemented for CAS promotions.

Pay Revision implemented for teaching and non teaching staff members are endorsed in the university based on the Government orders.

Deputation/transfer for staff members is permitted based on KSR and University regulations.

Appropriate committees like staff club comprising teaching and non teaching staff will discuss general matters for their welfare and make recommendations.

Student representatives on Syndicate, Senate Academic Council, and on other committees like gender justice, anti- ragging, etc. will address their specific issues.

Equal Opportunity Cell is functioning to monitor the progress of SC, ST and OBC students.

6.2.3 Institution Implements e-governance covering following areas of operation

1. Administration
2. Finance and Accounts
3. Student Admission and Support
4. Examination

Response: A. All of the above

File Description	Document
Screen shots of user interfaces	View Document
Details of implementation of e-governance in areas of operation, Administration etc (Data Template)	View Document

6.3 Faculty Empowerment Strategies

6.3.1 The institution has a performance appraisal system, promotional avenues and effective welfare measures for teaching and non-teaching staff .

Response:

A performance appraisal system as envisaged by UGC is introduced in the University and annual appraisal/feedback of the teachers and the course offered is regularly taken on a semester basis which is evaluated by the IQAC and possible improvements/remedial steps are taken at the Departmental level. Promotional avenues are strictly in accordance with the UGC career advancement schemes as per the UGC regulations from time to time. The university offers all its support to promote research and publications of its faculty members. The university also runs short term programmes for enhancing the skills/expertise of its faculty members.

The promotion of faculty of the University follows the Career Advancement Scheme (CAS) provided by UGC. Under the scheme clear eligibility criteria is defined for advancement at each stage of the career and only those faculty who clear the criteria can apply for promotion. The promotion is based on the Performance Based Appraisal System (PBAS) which consists of objective assessment of the achievements and subjective assessment through interviews.

The promotion scheme of all the non-teaching staff is per the state government's guidelines. Kerala Service Rules is followed in this case. There are different categories and grades for the staff and the promotion is given based on the service and performance. The university runs short term programmes for enhancing the skills/expertise of its non-teaching members in regular intervals.

All the faculty members and non-teaching staff are eligible for various welfare schemes that are introduced by University periodically. Some of the welfare schemes available are as under.

- Staff accommodation / HRA facility in lieu of accommodation
- Group Insurance Scheme
- Statutory / mandatory scheme subscription (PF / EPF / Insurance / Gratuity)
- All the staffs are eligible for various types of leaves specified under Kerala Service Rules like maternity/Paternity leave. Faculty members are provided with yearly 15 days of special casual leave to attend seminars/workshops etc. They are also eligible for sabbatical leave.
- Earned leave encashment facility
- Healthcare – Medicare facility to all the employees and dependents. Medical Reimbursement Scheme.
- Research awards for faculty.
- The Staff Welfare Fund instituted for the welfare of staff members, through which financial aid is being granted to the staff members for various purposes like education, treatment etc. A scheme to give awards to the wards of University staff who secure higher distinctions in examinations is envisaged under the Staff Welfare Fund.
- Cochin University Employees Co-operative Society for promoting thrift and cooperation.
- University bus service provided with concessional fare.
- A bank is housed in the University for providing better service to the University community.
- A Post Office is housed in the University campus.
- Canteen facility in the University by which the staff and students can access quality food and beverages at subsidized prices.
- Associations for teachers and non-teaching staff.
- Interest - free Festival advance to every staff member during the festival of Onam.
- Gymnasium and Indoor Stadium established by the Department of Physical Education is open to the staff during out of office hours.

6.3.2 Average percentage of teachers provided with financial support to attend conferences / workshops and towards membership fee of professional bodies during the last five years.

Response: 5.35

6.3.2.1 Number of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies year wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
10	35	21	27	22

File Description	Document
Details of teachers provided with financial support to attend conferences, workshops etc. during the last five years (Data Template)	View Document

6.3.3 Average number of professional development / administrative training Programmes organized by the institution for teaching and non-teaching staff during the last five years.**Response:** 37.8**6.3.3.1 Total number of professional development /administrative training Programmes organized by the institution for teaching and non teaching staff year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
33	56	33	50	17

File Description	Document
Details of professional development / administrative training Programmes organized by the University for teaching and non teaching staff (Data Template)	View Document

6.3.4 Average percentage of teachers undergoing online/ face-to-face Faculty Development Programmes (FDP)during the last five years (Professional Development Programmes, Orientation / Induction Programmes, Refresher Course, Short Term Course).**Response:** 24.1**6.3.4.1 Total number of teachers attending professional development Programmes, viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programmes year wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
142	142	91	85	67

File Description	Document
Details of teachers attending professional development Programmes during the last five years (Data Template)	View Document

6.4 Financial Management and Resource Mobilization**6.4.1 Institutional strategies for mobilisation of funds and the optimal utilisation of resources****Response:**

As for the CUSAT's Resource Mobilization, the State Govt. is liberally supporting since its establishment in 1986, by providing sufficient budgetary allocation every year under Non-Plan and Plan heads which enable the University to meet the requirements of working capital (Non-Plan) as well as long term capital (Plan) expenditures. This fund allocation is normally done on the basis of a projected budget estimate submitted by the university, and it is being released to the University on quarterly & monthly for Plan & Non Plan heads respectively. Besides, CUSAT has many distinguished Research Centres, which garner necessary funds support from the State Govt. as well as the Central Govt. agencies (of which three centres are wholly funded by State Govt., two Research Centres are funded by UGC, and another two centres, each one is financed by the Indian Navy and the AICTE). Further details are given in the additional remarks.

As for internal resource mobilization, the major portion is from the fees collection that consists of academic fee, examination fee, hostel fee, sports fee, interest on savings and fixed deposit. Besides these, the exam receipts and receipts other than academic, generated by the three constituent institutions of CUSAT, viz., the School of Engineering, the Cochin University College of Engineering Kuttanad and the Kunjali Marakkar School of Marine Engineering, form a sizable part of the revenue of CUSAT.

As regards to the financial management, CUSAT has various high level committees – the Statutory Finance committee (SFC), the State Plan Review committee, the Building committee and the Works committee etc. – comprising members of the University Syndicate. Of these, the SFC usually meets on the day itself ahead of University's Budget Presentation, and the other committees meet either at regular intervals or as and when requires, for reviewing the fund position of the university and its proper monitoring. And for external sources, revenue generated every year from common admission test, annual recognition fee from educational institutions, fee for testing & calibration service provided by various CUSAT Labs, revenue generated on short term courses and training, overhead remittances of consultancy service rendered by faculty members, various research project grants of both central and state govt. agencies, vendor registration & renewal fee, rent collected from various buildings, play grounds, courts etc (additional remarks may please be seen)

As CUSAT being a government entity, though the scope for revenue generation through the hiking of any fee under academic and exam related areas is limited, revenue mobilization and expenditure reduction are being carried out to some extent. In addition, CUSAT has introduced a strict budgetary control on expenditure as per the provision of the Act so as to ensure proper and optimum use of the resources, so that it could withstand and sustain with sufficient corpus funds to meet both the short term and long term financial requirements. Further, according to CUSAT's financial data, it is asserted that the state government's budgetary provision is reasonably sufficient to meet both the Non Plan and Plan requirements of the university.

File Description	Document
Any additional information	View Document

6.4.2 Funds / Grants received from government bodies during the last five years for development and maintenance of infrastructure (not covered under Criteria III and V) (INR in Lakhs).

Response: 27749.86

6.4.2.1 Total Funds / Grants received from government bodies for development and maintenance of infrastructure (not covered under Criteria III and V) year wise during the last five years (INR in Lakhs).

2020-21	2019-20	2018-19	2017-18	2016-17
91.16	73.02	953.11	1016.15	25616.42

File Description	Document
Details of Funds / Grants received from government bodies during the last five years (Data Template)	View Document

6.4.3 Funds / Grants received from non-government bodies, individuals, philanthropists during the last five years (not covered in Criterion III and V) (INR in Lakhs)

Response: 25

6.4.3.1 Total Grants received from non-government bodies, individuals, Philanthropers year wise during the last five years (INR in Lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
0	0	0	0	25

File Description	Document
Institutional data in prescribed format	View Document

6.4.4 Institution conducts internal and external financial audits regularly

Response:

- 1.CUSAT has an Internal Audit section called Internal Audit & Inspection Section in Finance Wing under the control of Finance Officer.
- 2.Through this IA&I Section, University is conducting internal inspection of different offices periodically on an annual basis and timely alerting of shortfalls, if any to the concerned.
- 3.In addition, the audit sections are often sending reminder letters to all concerned alerting them to settle the advance drawn in time or otherwise failing to do so penal interest would be levied.
4. While carry out the audit of bills with observing audit rules, any shortfall is found, the bill would be

summarily rejected with direction to resubmit the same after correcting the objection.

5. Above all, the Accounts Section in the Finance Wing prepares the monthly bank reconciliation statement as well as collection statements and making the necessary scrutiny and verification.
6. Apart from the above, Kerala State Audit Dept is undertaking the mandatory concurrent audit of university accounts periodically on an annual basis.
7. Besides KSAD Audit, there will have another audit, the Accountant General of India Audit, which also undertake the audit of the University every year and prepare and submit the report to the competent authority.
8. CUSAT is also undertaking GST & IT Audit periodically by external agencies of eminent Chartered Accountant firms.

6.5 Internal Quality Assurance System

6.5.1 Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies and processes by constantly reviewing the teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals.

Response:

The IQAC guides the University for developing quality culture and achieving benchmarks in its various activities including teaching learning and research processes. **The practices institutionalized by IQAC involve periodic academic and administrative auditing, feedback system, periodic revision of the syllabi and implementation of outcome based education in the University.** The contributions of IQAC towards quality assurance and sustenance are detailed below.

1. The IQAC conducted academic audit of the University departments in 2018 and 2020 and administrative audit in 2020. These significantly contributed to the constant review of the various processes of the University.
2. Syllabus revision is being carried out regularly and the syllabi of all programmes have been revised in the last five years.
3. The outcome based education has been implemented in the university with effect from the academic year 2020-21.
4. Feedback from stakeholders are collected and analysed regularly in the University departments as per instructions from the IQAC.
5. IQAC was instrumental towards formation of University level Alumni Association and preparation of guidelines for functioning of University level as well as department level alumni associations.

6. The Chancellor's Chair Scheme was instituted in the University to engage eminent academicians from international institutes as Chancellor's Chair Professors, at least for one month, to interact with the students and researchers. Five academicians visited the University under this scheme so far.
7. The interdisciplinary research activities of the University are being promoted by the establishment of five virtual centres; Virtual Centres for interdisciplinary research in Engineering and Technology, Basic Science, Humanities & Social Science, Scientific Computing and Marine Sciences.
8. A scheme for providing financial assistance to students for participating in conferences at international institutes was introduced and 21 students awarded this assistance till now.
9. "Distinguished Young Faculty/ Researcher Award" was instituted for recognising the best performing faculty members and research scholars in 2018, utilizing the prize money of Chancellor's Award. Four faculty members and eight research scholars received this award so far.
10. The process of signing MoUs with various organizations is streamlined and regulations have been framed. The MoUs are verified by the IQAC for observing academic and research interests of the University.
11. Energy Audit, Environment Audit and Green Audit were conducted for exploring the opportunities to improve the energy efficiency of the campus and for the evaluation of biodiversity, water management practices and indoor air quality in the campus.
12. A data acquisition web portal was developed to streamline the collection and analysis of the information on academic and research activities in the departments and of faculty members.
13. The academic and research performance of the departments are being analysed regularly through the quarterly performance reports which are collected from the departments.
14. Seminars/workshops on various quality enhancement measures such as implementation of OBE, NAAC assessment, vision for excellence, start-ups and awareness class to newly recruited faculty members were also conducted by IQAC.
15. Sasthrayaan – CUSAT Open House was conducted in 2017 and 2018, to communicate the research outcomes obtained through the continued perseverance of its researchers, to the public.

6.5.2 Institution has adopted the following for Quality assurance

- 1. Academic Administrative Audit (AAA) and follow up action taken**
- 2. Conferences, Seminars, Workshops on quality conducted**
- 3. Collaborative quality initiatives with other institution(s)**
- 4. Orientation programme on quality issues for teachers and students**
- 5. Participation in NIRF**
- 6. Any other quality audit recognized by state, national or international agencies (ISO Certification, NBA).**

Response: A. Any 5 or more of the above

File Description	Document
Upload e-copies of the accreditations and certifications	View Document
Upload details of Quality assurance initiatives of the institution (Data Template)	View Document

6.5.3 Incremental improvements made for the preceding five years with regard to quality (in case of first cycle), Post accreditation quality initiatives (second and subsequent cycles).

Response:

1. Post Accreditation Quality Initiatives of the University

Implementation of Outcome Based Education: As per the recommendation and initiation of IQAC, the outcome based education has been implemented in the University. The syllabi of all programmes have been revised according to OBE. Programme Outcomes, Programme Specific Outcomes and Course Outcomes are defined and included in the syllabus.

Excellence in Entrepreneurship and Start Ups: The University promotes students entrepreneurship through the Centre for Innovation, Technology Transfer & Industrial Collaboration (CITTIC) and its Technology Business Incubator. CITTIC started incubating start-up companies from February 2017 by mothering 2 startups and 98 companies have been incubated since then.

Moreover, a new 3000 sq. ft. Technology Business Incubator(TBI) named RUSA Innovation Startup Ecosystem (RISE) has been established with financial support from RUSA, for providing necessary infrastructure support for IT, Electronics and Biotech startups.

Academic Audit: The Academic Audit is conducted to review the academic and administrative processes in the University and to take necessary corrective measures. The Academic Audit is conducted once in two years with the help of external experts, based on the parameters/benchmarks set by the IQAC. The experts physically verify the processes, documents and facilities and submit reports with their suggestions for individual departments. The Academic Audit was conducted during the years 2018 and 2020.

Internationalization: The Directorate of International Relations has been established for coordinating activities related to international students and collaborations. This accelerated the academic and research activities with the international institutions. At present, 13 MoU collaborations with international institutions are active, 24 foreign students were in 2020-21 and 36 are studying in the University in 2021-22.

Recruitment of Highly Qualified and Competent Regular Faculty: Faculty recruitment has become a continuous process now and 124 well qualified faculty members have been recruited since 2016. 84% of permanent faculty members have PhD and most of them have exposure in reputed national/international institutions.

Strengthening of Research Activities: A new scheme “SEED Money for Research Initiatives of New faculty members” instituted in 2017, was accelerated research activities. Virtual Centres have been created for promoting interdisciplinary research. All these initiatives resulted in scaling up of research outputs: 2270 journal publications, 174 books and 765 PhD awardees in last five years, elevation of h-index to 95 (2021) from 65 (2016).

Student Support Activities: Collaborative activities with national/international institutes for research, student exchange etc. increased to 174 in 2020 from 120 in 2016. Financial support is also being provided to students for presenting research papers at international institutions.

Outcome of constant review of Academic and Research activities

- NIRF University Ranking 2021 is 44, an eighteen points’ increase in a year.
- Bagged Chancellor’s Award for the Best University in the State three times in last four years
- University figured consecutively in THE world ranking since 2017
- CUSAT students top in employability ranking of National Project Implementation for MHRD.
- University received major support of Rs.240 crores from Govt. of Kerala under KIIFB project.

2. Post Accreditation Quality Initiatives as per the suggestions of the NAAC Peer Team

Sl. No.	Recommendations of NAAC	Actions Taken
1	Recruitment of regular faculty, with special emphasis on Engineering, Languages and Social Science departments, to ensure sustained growth towards excellence	<ul style="list-style-type: none"> Recruitment is now a continuous process 124 new faculty members have been recruited since 2016
2	Stabilization of resource base of the University by enhancing resource generation and Inter-Departmental collaboration and cooperation	<ul style="list-style-type: none"> Common instrumentation facility is being constructed with the support of Govt. of Kerala under KIIFB scheme Five virtual centres are established for strengthening interdisciplinary research activities.
3	Harness the locational advantage to make the University, a Centre of National Importance in Marine and Atmospheric Science and Marine Engineering	<ul style="list-style-type: none"> Advanced Centre for Atmospheric Radar Research (ACARR) has already been established in the University
4	Enhancement of Residential facilities for students and faculty to make the campuses for vibrant research and learning activities	<p><i>Residential facilities for students which are added in the last five years:</i></p> <ul style="list-style-type: none"> International Students' Hostel-1 Boys' Hostel for Students- 1 (120 bedded) Girls' Hostel for Students- Vertical Extension of the hostels Alakananda and Aiswarya
5	Double entry accounting system to be practised instead of the present single entry system and single answer book in examination	Double entry accounting system has been implemented

NAAC

NAAC

NAAC

Criterion 7 - Institutional Values and Best Practices

7.1 Institutional Values and Social Responsibilities

7.1.1 Measures initiated by the Institution for the promotion of gender equity during the last five years.

Response:

There is an annual gender sensitization action plan for the university.

Safety and security

1. The campus is amply secured with round-the-clock professional security. Many of the Departments have installed CCTV cameras in the common areas. Continuous availability of security staff at various locations is also ensured.
2. Gender Justice Committee is functioning to look into the complaints of sexual harassment at workplace, headed by a lady Professor with other members from different sections of the University.
3. Internal complaints committee is functioning in the university to hear the grievances of the employees.

Counselling

1. Mind behaviour studio, a counselling centre is also available at the Students' Amenity Centre for providing psycho social support to students.
2. There is a mentor mentee facility for advising and providing support to the students
3. Anti ragging talks and campaigns are organised at the beginning of each semester to sensitize the students. Provisions for lodging complaints and the details of helpline numbers are displayed very prominently in every Department.

Common Rooms

1. Most of the departments are having rest rooms for students.
2. Unisex Gymnasium is working in the students amenity centre. A gymnasium solely for the ladies is also functioning near their hostels.
3. The University provides accommodation to the boys and girl students on the campus. A total of 1133 girls are accommodated in the six ladies' hostels, while 7 hostels accommodate 1038 boys. There is one hostel for research scholars, one for OBC and one for SC/ST girl students on the campus. There is one hostel for working women functioning near the girls' hostel.
4. Separate toilets are available for women in the Departments. Sanitary napkins are kept for distribution in a separate counter in the rest room for ladies. Incinerators are installed in the toilets to dispose of the

used napkins.

Day care centre for children of the staff

A day-care is functioning on the campus to help young mothers working in the university.

Any other relevant information

1. Female students are given equal opportunities to participate in arts and sports events conducted by the University.
2. Trans-gender reservation is implemented in all the professional programmes offered by the University.
3. PG programmes of the University have more number of girls than boys. More than 60 per cent of the research scholars are girls.
4. Women constitutes 44% of teaching and 50% of the administrative staff.
5. KMSME offers 50% concession in the tuition fee for the undergraduate girl student
6. One lady member is nominated to the CUSAT Syndicate by the Govt. of Kerala..
7. Anti-dowry pledge is taken by all the students who get a Degree from the University, at the behest of the Hon'ble Chancellor of the University..
8. Women's Study Centre established in 2010 with financial assistance from the UGC undertakes research and strives to augment women's capacity for their empowerment.
9. Cochin University Women's Welfare Organization strives to promote the interest and welfare of the women employees on the campus.

File Description	Document
Specific facilities provided for women in terms of: a.Safety and security b. Counselling c. Common Rooms d. Day care center for young children e. Any other relevant information	View Document

7.1.2 The Institution has facilities for alternate sources of energy and energy conservation measures

- 1.Solar energy**
- 2.Biogas plant**
- 3.Wheeling to the Grid**
- 4.Sensor-based energy conservation**

5. Use of LED bulbs/ power efficient equipment**Response:** A. 4 or All of the above

File Description	Document
Geotagged Photographs	View Document

7.1.3 Describe the facilities in the Institution for the management of the following types of degradable and non-degradable waste (within 500 words)

- Solid waste management
- Liquid waste management
- Biomedical waste management
- E-waste management
- Waste recycling system
- Hazardous chemicals and radioactive waste management

Response:**1. Solid Waste Management**

- Bio waste is managed by converting them into vermicompost which is used to support the vegetable gardens on the campus.
- Biogas plants are installed in the hostels to handle food waste through the Integrated Rural Technology Centre (IRTC). It is also installed in KMSME.
- The waste is segregated properly before being disposed of. This initiative implemented in the Department of Biotechnology is in cooperation with Ecove plus waste management.
- Students are also encouraged to maximise the reuse of plastic wares like micropipette tips, eppendorf tubes, falcon tubes, etc.
- For managing solid waste (paper waste and other disposable waste) some Departments (e.g. KMSME) have a fuel-free solid waste incinerator.
- In NCAAH, the biodegradable waste materials are collected together and layered in a container mixed with charcoal and Garbactum, a bioremediator developed by the Centre and made into compost which is distributed as a fertilizer.

2. Liquid Waste Management.

A sewage treatment plant of 200 m³/day capacity is installed KMSME to manage the sewage from the hostel and the administrative building and getting it treated. The treated effluent is odour-free and meets the standards as per the norms of Pollution Control Board of the Government of Kerala.

3. Biomedical Waste Management

Biowaste and non-biowaste are segregated and stored in different containers. Biowaste are decontaminated by autoclaving at 121degree C at 15Psi for 60 minutes and air dried. The segregated waste is collected and disposed in an eco-friendly manner by Ms Ecoveplus Waste Management Pvt.Ltd., Cochin -683562, periodically (Once in 4 months).

4. E-waste Management

- a) Electronic wastes are recycled at regular intervals. Old computers are transferred for use for lesser demanding uses in other divisions of the University. Some of the obsolete machines are used for demonstration in workshops.
- b) The e-waste is collected and discarded by engineering department. Also E waste is removed in collaboration with the local self-government/ other govt. agencies/ NGOS. Some Departments (e.g. Photonics) have entered into an agreement with Green Worm Eco Solutions to dispose of dry waste as well as waste from the laboratory.
- c) The School of Engineering has partnered with Clean Kerala Co Ltd. to manage the e-waste. Every alternate year, the Clean Kerala Company is collecting e-waste produced in the campus. This ensures responsible and sustainable disposal of e-waste including defunct printers, desktops, keyboards, mouse and other condemned electronic waste.

5. Waste Recycling System

The effluent of the sewage treatment plant is used for irrigation of landscapes on the campus. <http://kmsme.cusat.ac.in/greenCampus.php>

6. Hazardous chemicals and radioactive waste management

- a) Acidic samples waste is neutralized prior to their disposal. The organic and aqueous wastes are collected in separate containers for their organized disposal.
- b) A faculty member trained at Bhabha Atomic Research Centre (BARC) is on duty as the Radioactivity Officer of the University..

File Description	Document
Geotagged photographs of the facilities	View Document

7.1.4 Water conservation facilities available in the Institution:

- 1.Rain water harvesting
- 2.Borewell /Open well recharge
- 3.Construction of tanks and bunds
- 4.Waste water recycling
- 5.Maintenance of water bodies and distribution system in the campus

Response: A. Any 4 or all of the above

File Description	Document
Geotagged photographs / videos of the facilities	View Document

7.1.5 Green campus initiatives include:

1. Restricted entry of automobiles
2. Use of Bicycles/ Battery powered vehicles
3. Pedestrian Friendly pathways
4. Ban on use of Plastic
5. Landscaping with trees and plants

Response: Any 4 or All of the above

File Description	Document
Various policy documents / decisions circulated for implementation	View Document
Geotagged photos / videos of the facilities	View Document

7.1.6 Quality audits on environment and energy regularly undertaken by the Institution and any awards received for such green campus initiatives:

1. Green audit
2. Energy audit
3. Environment audit
4. Clean and green campus recognitions / awards
5. Beyond the campus environmental promotion activities

Response: A. Any 4 or all of the above

File Description	Document
Reports on environment and energy audits submitted by the auditing agency	View Document

7.1.7 The Institution has disabled-friendly, barrier free environment

1. Built environment with ramps/lifts for easy access to classrooms.
2. Divyangjan friendly washrooms
3. Signage including tactile path, lights, display boards and signposts
4. Assistive technology and facilities for Divyangjan accessible website, screen-reading software, mechanized equipment
5. Provision for enquiry and information : Human assistance, reader, scribe, soft copies of reading material, screen reading

Response: A. Any 4 or all of the above

File Description	Document
Geotagged photographs / videos of the facilities	View Document

7.1.8 Describe the Institutional efforts/initiatives in providing an inclusive environment i.e., tolerance and harmony towards cultural, regional, linguistic, communal socioeconomic and other diversities (within 500 words).

Response:

The University is a kind of home to students and faculty members from different parts of the country. The campus provides to them a wholly cultural, regional and linguistic inclusiveness. This is based on mutual respect, effective relationships, clear communication, explicit understandings about expectations and critical self-reflection.

The University has reserved 50% of the BTech seats under All-India quota in which students from across the country can apply. The selection is through an All- India entrance examination for which more than thirty thousand students apply. Most of the courses on the campus have seats reserved for international students admitted through Indian Council for Cultural Relations (ICCR) or by applying directly to the University. There is one hostel exclusively for the international students functioning on the campus.

CUSAT follows reservation policies of the Governments. Nearly 40% of the students are from reserved category which includes Socially and Educationally Backward Communities and Scheduled Caste and Scheduled Tribe. Reservation is strictly followed in the appointment of teachers and other administrative staff. There is a 'Centre for Social Inclusion and Inclusive Policy' supported by the UGC functioning on the campus focussing on research on the underprivileged.

The University has also seats reserved for physically challenged students, transgenders, economically weaker students from forward community, etc. Reservation for the physically challenged is also available in the selection of faculty members. Toilets in many Departments are designed for the differently-abled. For deserving candidates under this category help is also provided during examination by means of scribes and / or extra time.

Academic, non-academic and socio-cultural activities organized in the Institution promote harmony among the members. Seminars and workshops organized in the Departments bring socialization and suitable circumstances to meet people with different cultures. International students at the university are familiarised with Indian culture by organising special events for them.

Festivals and commemorative days are celebrated with great enthusiasm and fervour with a view to promoting positive interactions among people of different racial and cultural backgrounds. Festive occasions, such as Onam, Christmas, etc. are celebrated by all the communities on the campus regardless of any sectarian outlook. Apart from this, occasions such as Holi, Deepavali, Dassara, etc are also celebrated on the campus, upholding the unity in diversity policy of the country.

The symposia, celebrations of various festivals, etc. organised by the Departments usually include cultural programmes in which the students and research scholars of the Departments actively participate. Such

occasions create an environment of camaraderie.

The students of the Departments organise Freshers Day to welcome new students to campus. Farewell Function is organised every year to bid goodbye to the outgoing batch of students. On such occasions the outgoing students share their experiences with the staff and junior batch of students. And the bond is sure stay intact for good.

File Description	Document
Supporting documents on the information provided (as reflected in the administrative and academic activities of the Institution)	View Document

7.1.9 Sensitization of students and employees of the Institution to the constitutional obligations: values, rights, duties and responsibilities of citizens (within 500 words).

Response:

The inventiveness of the University brings out various activities and offers a constructive environment to sensitize students and employees to the constitutional obligations. Teacher's day, National Integration Day, National Voters' Day, etc. are celebrated on the campus with due regard. The University celebrates Independence Day, Constitution Day and Republic Day on August 15, November 26 and January 26 respectively. The University holds flag hoisting ceremonies on the campus every year on Independence Day. This day is celebrated to highlight the struggle for freedom and as a day of national pride and honour. Constitution Day is celebrated to make the students aware of their responsibilities towards the constitutional values, rights, duties as citizens.

The activities featuring the importance of the Indian Constitution are organized on Republic Day. The celebrations are attended by students, teaching and non-teaching staff, invitees, guests and many others. Flag hoisting accompanied by the National Anthem and oath of national integrity are a regular feature of the programme. The employees and the students take pledge together and the importance of freedom, rights, responsibilities and duties of a citizen are reiterated.

International/National Commemorative Days are celebrated and quiz competitions conducted to generate awareness about the Constitution. Seminars and workshops are organised to spread social awareness about communal harmony, health, hygiene and disaster management. The University campus doesn't support discrimination of any kind against students. We believe that excellence is not influenced by the community or other social framework in which we are raised. Through various activities and firm beliefs the students are groomed as responsible citizens who uphold the true spirit of the Constitution.

Observance of Vigilance Awareness week was organized from 27th October to 2nd Nov, 2020. It started with an integrity pledge on 27th October 2020. Pledges were taken to preserve and strengthen the freedom and integrity of the nation, show empathy towards fellow human beings and animals. Disabled Friendly week on December 12, The National Voters' Day on January 25, Rashtriya Sankalp Diwas on 31st

October, Sadbhavana Diwas on August 20 were also observed as part of this. Regular administrative training is given to entire staff on existing University and Government rules and regulations.

As part of NSS activities, students are encouraged to serve the community. During the floods of 2018 in Kerala, NSS volunteers involved in local flood relief activities. In addition, the Research Scholars and post graduate students participated in Swachata Abhiyaan organized by the Corporation of Cochin on various environmental aspects, including regulations. Another programme on this was conducted on 2 Oct 2018 and 2019. The curriculum of the B. Tech. programmes includes one course on Universal Human Values.

The induction programme for the B.Tech students as prescribed by AICTE lays stress on inculcating Universal Human Values so as to sensitise the students to the importance of being responsible citizens. Students get live experience of the various aspects of democracy when they reach part of the Senate, Academic Council and Syndicate of the university through formal election.

7.1.10 The Institution has a prescribed code of conduct for students, teachers, administrators and other staff and conducts periodic programmes in this regard.

- 1. The Code of Conduct is displayed on the website**
- 2. There is a committee to monitor adherence to the Code of Conduct**
- 3. Institution organizes professional ethics programmes for students, teachers, administrators and other staff**
- 4. Annual awareness programmes on Code of Conduct are organized**

Response: A. All of the above

File Description	Document
Details of the monitoring committee composition and minutes of the committee meeting, number of programmes organized, reports on the various programs etc., in support of the claims	View Document
Code of ethics policy document	View Document

7.1.11 Institution celebrates / organizes national and international commemorative days, events and festivals (within 500 words).

Response:

The University celebrates national and international commemorative days in a befitting manner.

On 26th January, Republic Day is celebrated to commemorate the adoption of the Constitution. The formal flag hoisting is followed by a “Constitution Awareness Programme” in which students and staff members are sensitised on their duties and rights.

Independence Day is celebrated on the 15th of August with the flag hoisting by the Vice-Chancellor. , Dr. Radhakrishnan’s birthday, 5th September , is celebrated as Teacher’s Day with utmost fervour. The

students organize a programme for the teachers.. Mahatma Gandhi's birth anniversary, 2nd October, is celebrated in Departments as the Sramadhan Day. Sramadhan is a voluntary contribution of labour by the staff and students of the Department.. 31st October, birth anniversary of Sardar Patel) is Ekata Divas which is celebrated as National Unity Day. On 15th September, Engineer's Day (Birth anniversary of Sir Visvesvaraya) is celebrated as an exceptional tribute to the best Indian Engineer Bharat Ratna Mokshagundam Visvesvaraya.

Most often these celebrations are undertaken by the Departments for whom the Day with its message is relevant. For example, the Department of Applied Chemistry conducts various activities on Science Day, Ozone Day, Gandhi Jayanthi, Fresher's Day, Teacher's Day and Women's Day. As part of the International Year of Periodic Table of chemical elements, the Department conducted a Science Exhibition and Quiz competition for high school students, IYPT2019, on 21 September/2019.

Departments also celebrate the National and International commemoration days as well as seasonal festivities. Each year an open day is conducted on the occasion of National Science Day. Another event is the occasion of World Environmental Day(June 5) when the School of Environmental Studies reviews all the activities that negatively impact our environment and sets up tasks to implement sustainability in the Department. The Head of the Department plants saplings on the occasion of World Environment Day to drive home the message symbolically. On World Alzheimer's Day on September 21, a memory walk is conducted on behalf of the Centre for Neuroscience every year. The 'Prajna memory walk ' has been a regular feature since 2017 and this has been quite effective in giving proper awareness about Alzheimer's disease, care and prevention..

National Maritime Day is celebrated in its true spirit and fervour to encourage and propagate seafaring profession among the public, especially in the youth. Even in the midst of COVID-19 pandemic, they managed to propagate the spirit of maritime day through online platforms by conducting the competitions like essay writing on the topic "Around the world in Pandemic.. Seafarers are key workers" and the cash award and certificates for the winners were distributed to winners on the occasion of passing-out ceremony 2020.

On the National Constitution Day, 26th November, the University holds a pledge taking ceremony.

File Description	Document
Geotagged photographs of some of the events	View Document

7.2 Best Practices

7.2.1 Describe two best practices successfully implemented by the Institution as per NAAC format provided in the Manual.

Response:

BEST PRACTICE 1

1. Title of the Practice

Practicing translational research and extension as a commitment to the Society

2. Objectives of the Practice

Commitment to society is envisaged by orienting the research and academic activities appropriately. The specific objectives of the practice are

- To undertake research in response to the problems faced by the society
- To undertake communication of scientific temper to the society
- To involve in extending research results for the benefit of the society through appropriate methods.

3. The Context

To achieve the aforementioned objectives, the pressing needs of the society to which university could offer solutions through its research interventions. On the first hand, the areas of expertise of the university and priority areas and challenges were mapped. The following areas were identified where the expertise in the University matched the requirements of the ecosystem challenges.

- As the university is situated near the coastal belt of Kerala, marine ecosystem is one of the priority areas where interventions could be offered.
- Climate change is one of the main challenges and it has been severely affecting the weather conditions of the state of Kerala.
- Diseases like Dementia has increased among the population, that needs advanced medical facilities along with patient handling expertise
- Creation of scientific temper among the young generation
- Innovative solutions for combating Covid -19
- Identification and addressing Industry based problems and support for nurturing enterprises (MSMEs)

4. The Practice

Outputs from research institutions and centres of higher education should be aligned towards achieving community oriented outcomes by translating research for use of industry/common man. University is actively involved in the following practices for achieving this.

- The National Centre for Aquatic Animal Health (NCAAH) renders services to the public and aquaculture industries in fish culture, aquaponics and environmental quality analysis. It also helps the waste management industries, Kudumbashree units, Animal Quarantine and Certification Services. The NCAAH has also developed Technology of High Density Genetically Improved Farmed Tilapia under recirculation mode, integrated with vegetable cultivation and a zero water Exchange Shrimp Culture Technology.

- Advanced Centre for Atmospheric Radar Research (ACARR) and the Department of Atmospheric Sciences pursue advanced research in atmospheric science in the tropical monsoon area and develop sophisticated observational and modelling capabilities in the troposphere and stratosphere for the accurate prediction of the Indian monsoon system. In collaboration with Sussex University (UK), the university has devised a 3-tier approach to provide traditional fishers with tailor-made weather forecasts based on available data from IMD, INCOIS, NCEP (National Center for Environmental Prediction, USA) and NCAR (National Center for Atmospheric Research, USA) based on WRF weather modelling tools.
- Centre for Neuroscience (CNS) is a brain research centre undertaking molecular-level research in neuroscience. 'Prajna', the community outreach centre focuses on bridging science and society is acting as a platform for interdisciplinary and inter-sector collaboration for setting up a resilient society. 'Udbodh' is a project of 'Prajna' in association with the Ernakulam district administration. 'Udbodh' has developed several care systems in the community, such as a Memory Café, Memory Clinic, Dementia Day Care Centre, Dementia Friendly Psychologists, Formal CareGivers, and Dementia Friendly Doctors. In addition, Udbodh has provided awareness classes to the entire local self government departments such as the grama panchayath, municipalities, and corporation in the Ernakulam district in Kerala.
- Centre for Science in Society (C-SiS) mandated to inculcate scientific temper among school students, conducts One Day Attachment Programme (ODAP). Children get practical exposure to theories by visiting library, workshop, computer lab, science lab, toy lab, science park, etc
- CUSAT conducts "Open House" programme for public, named "Sasthrayaan", at regular intervals. 'Sasthrayaan' showcases facilities and research outputs of the University in an open exhibition.
- Covid-19 had necessitated research and interventions that could offer the community with viable solutions. The startups at CITTIC were given idea grants to come up with innovative solutions for combating Covid -19.

5. Evidence of Success

- Extension services of NCAAH in 2019-20 includes 214 consultancies to aqua farmers and aquaculture industry and 15 sea food industries. The centre installed 75 high density fish culture units for 48 clients during the period in the states of Chattisgarh, Jharkand, Sikkim, Meghalaya, Tripura, Mizoram, Telangana, Andhra Pradesh and Assam besides the state of Kerala, ensuring national outreach for university activities.
- The localized WRF-based high resolution coastal weather forecasts made by ACARR are found to have an average accuracy of more than 80%. The 3-tier approach to weather forecasting allow traditional fishers to maximize their fishing in a safe and sustainable environment. Local weather forecasts are available at <https://www.kattumkadalum.org> developed with a joint research with University of Sussex, UK are rated accurate and useful for the fishermen.
- Under the Udbodh project, dementia screening camps at various grama panchayaths were conducted. More than 100 schools at the corporation were given awareness classes. On October 16, 2021, Kochi city has been declared as the first of its kind Dementia friendly city in India in connection with the activities spearheaded by Centre for Neuroscience of the university.
- More than two lakh students and 8000 teachers have been trained by CSiS so far.

- ‘Sasthrayaan’, the open house was conducted in 2017 and 2018, which showcased major research achievements was attended by the general public and prospective entrepreneurs.
- School of Management Studies conducted Entrepreneurship Development Programmes for women Self Help Groups (in Ezhikkara panchayath), Farmer Producer Companies and SC/ST beneficiaries.
- CUSAT Startups were successful in launching products like Automatic Sanitizer dispensers, UV sterilizer, Disinfection Chamber, Pulse Oxymeter using CUSAT Covid response grant for the development of products and services. ‘Dopameter’ is another successful product made by a CUSAT startup.

6. Problems Encountered and Resources Required

Inspite of the excellent pool of faculty and student resources, many a problems faced by the society could not be addressed due to paucity of resources. Funding for translating the research output to the community is required. Establishment of an exclusive extension department can offer a permanent window to the public, through which innovative solutions in research labs may be translated to the society.

BEST PRACTICE 2

1. Title of the Practice

Holistic student development through cultural diversity, skill orientation for careers and promotion of entrepreneurship

2. Objectives of the Practice

University aims to foster holistic student development offering a vibrant and mixed culture campus atmosphere through the following objectives

- To improve student diversity through pan India selection process
- To improve skill orientation through curricular and co curricular activities
- To encourage entrepreneurship by offering conducive entrepreneurial climate

3. The Context

It is well taken that enhancing student outcomes in the higher education sphere need to have a focused outlook. This has to be done through all encompassing measures for student development

- The University believes that the final product quality depends to a great extent on the quality of the input. This calls for a careful selection process where meritorious students will be offered an opportunity for higher education.
- Further, it was also thought that inviting national/international talents will make a blend of various

cultures with the added advantage of getting better exposure.

- Students inducted in the university should be offered all round development with focus on career/skill oriented and value added programmes as part of curriculum.
- Creating job givers instead of job seekers would accentuate the economic development of the country.

4. The Practice

The University takes much effort to ensure quality and diversity in its products who will later become ambassadors of the Institution globally. Following measures are taken by the university in ensuring the standards among the student stakeholders

- CUSAT is the only State funded University in Kerala, where admissions are based on All India selection process. Common Admission Test is conducted every year at more than 75 centres spread across the country and also in the Middle East. To ensure good representation of students from other parts of the country, 40 % of the B.Tech seats are open to students on All India basis. International students are also preferring CUSAT as a destination. In addition, faculty from other states are also recruited adding to the cultural diversity.
- Taking the call from 'Skill India' initiative of Govt of India, skill and career orientation programmes are designed as a part of the curricular/co-curricular activities to ensure that students are benefitted out of the same.
 - Deen Dayal Upadhyay Kaushal Kendra (DDUKK) is offering skill oriented courses as part of the curriculum in B Voc (Business Process and Data Analytics) and M Voc in (Mobile Phone Application Development) and MVoc (Technology Consultancy and Management) areas.
 - In addition, departments are conducting value added programmes in different streams to boost knowledge, skill and attitude of student community. 154 value added programmes were conducted by the university over the five years.
 - Career orientation programmes helps the students to prepare themselves for interviews and fit to the requirement of the prospective employer. 285 career orientation programmes were conducted for students during the past five years from 2016-17.
- In pursuance of the "Atmanirbhar Bharath" campaign and 'Startup India' mission of the Govt of India, efforts have been made for creating a conducive climate for nurturing entrepreneurial passion amongst the youngsters. The University provides all the necessary infrastructural support to the budding entrepreneurs to realise their dream projects while pursuing their academics on the campus.
 - Entrepreneurship Development Clubs at department level conducts programmes for students for instilling the passion for pursuing entrepreneurship.
 - Entrepreneurship Development Cell of the university functions as an umbrella organisation for conducting common programmes for students in the university.
 - Centre for Innovation, Technology Transfer & Industry Collaboration (CITTIC) facilitates the process of converting innovative ideas and research output of our students, alumni and teachers to successful business by providing professional support, business advice, prototype development and exposure to entrepreneurial networks.
 - With financial support from RUSA, RUSA Innovation Startup Ecosystem (RISE) was setup in 2020 mainly for electronics and biotech startups. This includes facilities like bio incubator with necessary equipment and facilities and FABLAB sponsored by Kerala Startup Mission.
 - IPR centre functions as an auxiliary centre for helping the entrepreneurs file patents for their

inventions.

5. Evidence of Success

Mode of selection through pan India competitive examination not only ensures quality of the students but also makes the campus vibrant with diverse cultures and a rich experience. The campus is also home to students from all parts of the country including almost all states from Jammu & Kashmir to North Eastern

States. Communal harmony and national integration through cultural bonding is evident from the celebrations of all the states hosted by students including Onam, Holi, Christmas, Deepavali, Ifthaar etc. Students from outside the country apply through ICCR. Number of international students on campus is 51 (2018-2020), who hail from more than 20 countries like Afghanistan, Iran, Bangladesh, Turkmenistan, Angola etc. making campus life more experiential and colourful.

- Every year the number of aspirants for admission to CUSAT is on the upswing. Overall, the total number of eligible applications received increased manifold over the years. CUSAT records a demand ratio of 20 for its programmes.
- More than 20000 students benefitted out of the value added courses and coaching for competitive examinations. More than 889 students cleared competitive examination tests while more than 2500 students harnessed placement offers.
- CUSAT Incubators have mothered 90+ startup companies in the last three years providing employment support for over 300 youngsters. Non-refundable grant to the tune of Rs 30 lakh has been given to selected start-ups from the CUSAT startup fund to develop their prototypes.
- IPR centre has facilitated has assisted and filed 11 patent applications in India till date. The cell has also carried out 14 Consultancy assignments for novelty assessment

6. Problems Encountered and Resources Required

During past two years, Covid -19 situation limited the dealings with students face to face, which was recouped through online sessions. International students have reached recently to the campus after the state of Kerala permitted to resume offline classes.

File Description	Document
Best practices in the Institutional web site	View Document
Any other relevant information	View Document

7.3 Institutional Distinctiveness

7.3.1 Portray the performance of the Institution in one area distinctive to its priority and thrust within 1000 words

Response:

Established in 1971 and reorganised in 1986, the Cochin University of Science and Technology (CUSAT)

is a State University, supported by the Government of Kerala. As enshrined in the name and in the Acts and Statutes, the mandate of the University is for giving an impetus to the post -graduate studies as well as to research and development in areas specifically significant for the region.

Kerala is unique with its diverse natural resources, climatic and geographical conditions, socio-economic and cultural background of the people. Marine and agricultural products are the major means of livelihood of the population in the state.. With a long coast of 580 km, a combination of hills and planes through the length and breadth of the state, there are both challenges and opportunities. CUSAT has been in the forefront in meeting these challenges specific to this region by taking up R & D projects and evolving scientific solutions.

No wonder then that there are seven Departments working on the marine-related subjects, such as Marine Biology, Marine Geology, Oceanography, Atmospheric Science and Industrial Fisheries. Other region-specific areas include subjects like Naval Architecture and Ship Building, Marine Engineering, Polymer Science and Rubber Technology. These subjects were introduced considering the fact that the India largest ship building facility is at Cochin and that more than 90% of the natural rubber produced in India is from Kerala. The University is equally active in taking up research in fundamental areas like Chemistry, Physics, Mathematics, Biology and Statistics. The full-fledged Departments of Law, Management, Economics and Languages also contribute considerably to the research and development of the University.

A cursory look at the various indices will amply vouch for the performance of the University in the way it ought to. The h- index of the University has been registering steady growth over the years. CUSAT has an h-index of 102 in Scopus and 95 in Web of Science.

The number of publications in International Journals and conferences has registered consistent growth in the last five years , with the impact of Covid-19 accounting for a dip in the year 2020-21.

All these performances and much more were screened by various National and International ranking agencies. The National Institutional Ranking Framework has evaluated the performance and ranked the University in 44th position in the year 2020-21.

In the Times Higher Education World University Rankings 2022 by subject, CUSAT is one of the 27 ranked institutions from India in Computer Science. Similarly, CUSAT is one of the 52 institutions ranked from India in Engineering and one of the 49 institutions in Physical Sciences.

Within the State, the University has been the recipient of the Chancellor's Award, instituted by the Hon. Governor of Kerala for the best performing University in the State. CUSAT received this recognition in 2017, 2019 and in 2020. The award carries a prize of 5 crore rupees. The University quite wisely used this amount for further improving the academics and research infrastructure. The Government of Kerala recognised the performance of the University in R & D and the potential for growth and committed a financial assistance of Rs 240 crore for building up state-of-the-art research infrastructure that can be utilised by other institutions as well. CUSAT is the only institution in the State to have been supported to this extent.

The real architects of these exemplary achievements in research are thmore than 1300 strong research scholar community and 460 faculty members supported by the administrative staff of the University. No wonder that the students and faculty members have received a good number of awards/ recognition

nationally and internationally in the last five years.

The research culture is being greatly promoted by the University with a teacher- friendly ambience on the campus. The young teachers recruited are given Seed Money to support/ start their research career and submit research proposals to funding agencies. The University has provided more than rupees two crores to newly recruited teachers under this scheme. The principal investigators of funded projects are given good financial freedom for managing the project funds. The University also advances fund for R & D projects committed by the Central/State funding agencies so as to avoid delay in the implementation of the projects and lapse of the funds. This is quite a unique facility in the University for promoting a culture of funded projects on the campus.

90% of the university departments have received funding under UGC SAP, DST FIST, TEQIP and other schemes. Currently the University is also being funded by DST under the PURSE programme with a total outlay of **Rs. 17 crore** for improving the infrastructure in science and engineering. The total funding under RUSA-2 is 15 crores. Funding under RUSA has been used to advance the research activities and many Start Up companies on the campus. A total of **15 crores** has been earmarked for Technology Business Incubator (TBI) under RUSA.

To give an impetus and directional supervision to the planned research on the campus, four virtual centres comprising research groups from different Departments have been created. This is catalytic in advancing interdisciplinary and translational research. The five virtual centres are:

- i. Centre for Advanced Research in Basic Science
- ii. Centre for Advanced Research in Engineering Science and Technology
- iii. Centre for Advanced Research in Scientific Computing
- iv. Centre for Advanced Research in Marine Sciences
- v. Virtual Centre for Advanced Research in Humanities and Social Science.

More than seventy interdisciplinary research groups are working under these centres..

The fruits of these research and developments are also passed on to the society. Agricultural farmers, fish farmers, small and medium scale industries, hospitals, etc. are some of the major beneficiaries. In short, CUSAT is living up to the mandate of solving region-specific research and development challenges and contributing positively to nation-building.

5. CONCLUSION

Additional Information :

The University of Cochin which was established in 1971, was reconstituted as Cochin University of Science and Technology (CUSAT) in February 1986, redefining its objectives as "promoting Graduate and Postgraduate studies and Advanced Research in Applied Sciences, Technology, Industry, Commerce, Management and Social Sciences." CUSAT is now a world ranking university with the specific purpose of developing higher education, emphasizing postgraduate studies and research in applied science, technology, industry, humanities, and commerce.

CUSAT as it is celebrating the Golden Jubilee in the year 2021, has in its credit many accolades. CUSAT has consecutively been figured in the Times Higher Education World Ranking since 2017. NIRF University Ranking 2021 is 44 and it is a big leap of 18 points in one year. The University got 7th position in India Today Best University Ranking 2021. The University bagged the Chancellor's Award for the Best University in the State which was instituted by the Government of Kerala, three times in the last four years. CUSAT students top in employability ranking conducted by National Project Implementation for the MHRD and according to this, around 74% students of the School of Engineering (SOE) at CUSAT are employable. The Advanced Centre for Atmospheric Radar Research (ACARR), one among the many Centres of excellence of CUSAT, is included in the Prime Minister's "Make in India Program."

Concluding Remarks :

Cochin University of Science and Technology is a unitary state university that offers multidisciplinary programmes in science, technology, engineering, humanities, legal studies and social sciences focussing on skill development as envisaged in NEP. The programmes offered cater to the regional and global needs to provide high quality and comprehensive education in an environment conducive for learning and cutting edge research.

The teaching learning processes are integrated with innovative practices and are student centric which ensure excellent learning outcomes and provide best opportunities to students.

The departments, schools and specialised research centres together creates an ecosystem for fruitful research, enabling the University to attract research funding from various national and international agencies.

The university has adequate infrastructure facilitating learning including class rooms equipped with ICT/multimedia facilities, laboratories, libraries and e- learning facilities.

The student support systems include various fellowship schemes, mentoring system, career guidance and placement services, technology business incubators and counselling centres.

The University strives to provide best services to all its stakeholders through its human resource development, research and extension activities.

All these measures have resulted in the University achieving a place among the top 50 universities in the country and getting the Chancellor's Award for the Best University in the State, instituted by the Government of

Kerala, for three times during the last four years. The university is now poised for scaling further heights making the best of the opportunities presented in the NEP, with the support of State and Central Governments.

NAAC

6. ANNEXURE

1. Matrics Level Deviations

Metric ID	Sub Questions and Answers before and after DVV Verification																				
1.1.2	<p>Percentage of Programmes where syllabus revision was carried out during the last five years.</p> <p>1.1.2.1. How many Programmes were revised out of total number of Programmes offered during the last five years</p> <p>Answer before DVV Verification : 116</p> <p>Answer after DVV Verification : 81</p> <p>1.1.2.2. Number of all Programmes offered by the institution during the last five years.</p> <p>Answer before DVV Verification : 116</p> <p>Answer after DVV Verification : 81</p> <p>Remark : Values are updated by considering 28 Ph.D. as well as 9 M.Phil. Programs as single programs</p>																				
1.1.3	<p>Average percentage of courses having focus on employability/ entrepreneurship/ skill development offered by the institution during the last five years</p> <p>1.1.3.1. Number of courses having focus on employability/ entrepreneurship/ skill development year-wise during the last five years</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>1958</td><td>1542</td><td>1412</td><td>1255</td><td>1216</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>1370</td><td>1080</td><td>990</td><td>880</td><td>850</td></tr></table> <p>Remark : As HEI has provided too many Courses under employability/ entrepreneurship/ skill development, numbers have ben changed on assessment basis</p>	2020-21	2019-20	2018-19	2017-18	2016-17	1958	1542	1412	1255	1216	2020-21	2019-20	2018-19	2017-18	2016-17	1370	1080	990	880	850
2020-21	2019-20	2018-19	2017-18	2016-17																	
1958	1542	1412	1255	1216																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
1370	1080	990	880	850																	
1.2.2	<p>Percentage of Programmes in which Choice Based Credit System (CBCS) / elective course system has been implemented (Data for the latest completed academic year).</p> <p>1.2.2.1. Number of Programmes in which CBCS / Elective course system implemented.</p>																				

	<p>Answer before DVV Verification : 116</p> <p>Answer after DVV Verification : 81</p> <p>Remark : Values have been updated after considering 28 Ph.D. as well as 9 M.Phil. Programs as single programs</p>																				
1.3.2	<p>Number of value-added courses for imparting transferable and life skills offered during last five years.</p> <p>1.3.2.1. How many new value-added courses are added within the last five years.</p> <p>Answer before DVV Verification : 155</p> <p>Answer after DVV Verification : 144</p>																				
2.1.1	<p>Demand Ratio (Average of last five years)</p> <p>2.1.1.1. Number of seats available year wise during the last five years</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>2797</td><td>2673</td><td>2656</td><td>2808</td><td>2468</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>2543</td><td>2394</td><td>2322</td><td>2433</td><td>2123</td></tr></table> <p>Remark : Values have been changed as per clarification</p>	2020-21	2019-20	2018-19	2017-18	2016-17	2797	2673	2656	2808	2468	2020-21	2019-20	2018-19	2017-18	2016-17	2543	2394	2322	2433	2123
2020-21	2019-20	2018-19	2017-18	2016-17																	
2797	2673	2656	2808	2468																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
2543	2394	2322	2433	2123																	
2.3.3	<p>Ratio of students to mentor for academic and other related issues (Data for the latest completed academic year)</p> <p>2.3.3.1. Number of mentors</p> <p>Answer before DVV Verification : 460</p> <p>Answer after DVV Verification : 300</p> <p>Remark : Assessing the attachments , the value as been changed as per DVV assessment</p>																				
2.4.4	<p>Average percentage of full time teachers who received awards, recognition, fellowships at State, National, International level from Government/Govt. recognised bodies during the last five years</p> <p>2.4.4.1. Number of full time teachers receiving awards from state /national /international level from Government/Govt. recognized bodies year wise during the last five years.</p>																				

	<p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>105</td><td>93</td><td>66</td><td>54</td><td>40</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>100</td><td>91</td><td>64</td><td>52</td><td>40</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	105	93	66	54	40	2020-21	2019-20	2018-19	2017-18	2016-17	100	91	64	52	40
2020-21	2019-20	2018-19	2017-18	2016-17																	
105	93	66	54	40																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
100	91	64	52	40																	
3.1.2	<p>The institution provides seed money to its teachers for research (average per year, INR in Lakhs)</p> <p>3.1.2.1. The amount of seed money provided by institution to its faculty year-wise during the last five years (INR in lakhs).</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>68.45</td><td>2</td><td>68.65</td><td>72.62</td><td>0.50</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>64.1</td><td>0</td><td>65.65</td><td>68.62</td><td>0</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	68.45	2	68.65	72.62	0.50	2020-21	2019-20	2018-19	2017-18	2016-17	64.1	0	65.65	68.62	0
2020-21	2019-20	2018-19	2017-18	2016-17																	
68.45	2	68.65	72.62	0.50																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
64.1	0	65.65	68.62	0																	
3.1.3	<p>Percentage of teachers receiving national / international fellowship / financial support by various agencies for advanced studies / research during the last five years.</p> <p>3.1.3.1. The number of teachers who received national / international fellowship / financial support by various agencies for advanced studies / research year-wise during the last five years.</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>22</td><td>17</td><td>17</td><td>22</td><td>15</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>17</td><td>11</td><td>12</td><td>15</td><td>11</td></tr></table> <p>Remark : Only relevant advanced studies / research projects have been considered</p>	2020-21	2019-20	2018-19	2017-18	2016-17	22	17	17	22	15	2020-21	2019-20	2018-19	2017-18	2016-17	17	11	12	15	11
2020-21	2019-20	2018-19	2017-18	2016-17																	
22	17	17	22	15																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
17	11	12	15	11																	

3.1.6	<p>Percentage of departments with UGC-SAP, CAS, DST-FIST, DBT, ICSSR and other recognitions by national and international agencies (Data for the latest completed academic year)</p> <p>3.1.6.1. The Number of departments with UGC-SAP, CAS, DST-FIST , DBT, ICSSR and other similar recognitions by national and international agencies.</p> <p>Answer before DVV Verification : 27</p> <p>Answer after DVV Verification : 23</p>																				
3.2.1	<p>Extramural funding for Research (Grants sponsored by the non-government sources such as industry, corporate houses, international bodies for research projects) endowments, Chairs in the University during the last five years (INR in Lakhs).</p> <p>3.2.1.1. Total Grants for research projects sponsored by the non-government sources such as industry, corporate houses, international bodies, endowments, Chairs in the institution year-wise during the last five years (INR in Lakhs).</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>473.02</td><td>19.99</td><td>87</td><td>0</td><td>9.60</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>0</td><td>9.99</td><td>87</td><td>0</td><td>9.60</td></tr></table> <p>Remark : Values have been changed after removing consultancy project for 2020-21 and absence of proof of Receipt of Rs. 450 Lakhs for same year</p>	2020-21	2019-20	2018-19	2017-18	2016-17	473.02	19.99	87	0	9.60	2020-21	2019-20	2018-19	2017-18	2016-17	0	9.99	87	0	9.60
2020-21	2019-20	2018-19	2017-18	2016-17																	
473.02	19.99	87	0	9.60																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
0	9.99	87	0	9.60																	
3.2.2	<p>Grants for research projects sponsored by the government agencies during the last five years (INR in Lakhs).</p> <p>3.2.2.1. Total Grants for research projects sponsored by the government agencies year-wise during the last five years (INR in Lakhs).</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>1981.11</td><td>3067.17</td><td>1330.15</td><td>1533.48</td><td>4069.11</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>1900</td><td>2080</td><td>1250</td><td>1450</td><td>3080</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	1981.11	3067.17	1330.15	1533.48	4069.11	2020-21	2019-20	2018-19	2017-18	2016-17	1900	2080	1250	1450	3080
2020-21	2019-20	2018-19	2017-18	2016-17																	
1981.11	3067.17	1330.15	1533.48	4069.11																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
1900	2080	1250	1450	3080																	

	Remark : HEI has included some of the consultancy projects and other projects that are not related to research , e.g. Wapcos , BPCL etc. Values have been changed on pro rata basis																				
3.2.3	<p>Number of research projects per teacher funded by government and non-government agencies during the last five years</p> <p>3.2.3.1. Number of research projects funded by government and non-government agencies during the last five years.</p> <p>Answer before DVV Verification : 270</p> <p>Answer after DVV Verification : 200</p> <p>Remark : Value has been changed considering only relevant research projects of relevant Academic year after removing consultancy and non-research projects</p>																				
3.3.2	<p>Number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR),entrepreneurship, skill development during the last five years.</p> <p>3.3.2.1. Total number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR),entrepreneurship, skill development year-wise during the last five years.</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>137</td><td>143</td><td>111</td><td>80</td><td>30</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>80</td><td>143</td><td>111</td><td>80</td><td>30</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	137	143	111	80	30	2020-21	2019-20	2018-19	2017-18	2016-17	80	143	111	80	30
2020-21	2019-20	2018-19	2017-18	2016-17																	
137	143	111	80	30																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
80	143	111	80	30																	
3.3.3	<p>Number of awards / recognitions received for research/innovations by the institution / teachers / research scholars / students during the last five years.</p> <p>3.3.3.1. Total number of awards / recognitions received for <i>research</i> / innovations won by institution / teachers / research scholars / students year-wise during the last five years.</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>92</td><td>113</td><td>76</td><td>74</td><td>33</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	92	113	76	74	33										
2020-21	2019-20	2018-19	2017-18	2016-17																	
92	113	76	74	33																	

	<p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>85</td><td>90</td><td>65</td><td>63</td><td>28</td></tr></table> <p>Remark : Values have been changed as per attachment</p>	2020-21	2019-20	2018-19	2017-18	2016-17	85	90	65	63	28										
2020-21	2019-20	2018-19	2017-18	2016-17																	
85	90	65	63	28																	
3.4.4	<p>Number of Ph.D's awarded per teacher during the last five years.</p> <p>3.4.4.1. How many Ph.D's are awarded within last five years.</p> <p>Answer before DVV Verification : 769</p> <p>Answer after DVV Verification : 760</p> <p>Remark : Value has been changed after considering Year of Award vis a Vis Academic Year</p>																				
3.4.5	<p>Number of research papers per teachers in the Journals notified on UGC website during the last five years</p> <p>3.4.5.1. Number of research papers in the Journals notified on UGC website during the last five years.</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>673</td><td>423</td><td>401</td><td>409</td><td>351</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>620</td><td>380</td><td>370</td><td>375</td><td>320</td></tr></table> <p>Remark : Relevant research papers have been considered .</p>	2020-21	2019-20	2018-19	2017-18	2016-17	673	423	401	409	351	2020-21	2019-20	2018-19	2017-18	2016-17	620	380	370	375	320
2020-21	2019-20	2018-19	2017-18	2016-17																	
673	423	401	409	351																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
620	380	370	375	320																	
3.4.6	<p>Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years</p> <p>3.4.6.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year-wise during last five years</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>358</td><td>384</td><td>235</td><td>260</td><td>186</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	358	384	235	260	186										
2020-21	2019-20	2018-19	2017-18	2016-17																	
358	384	235	260	186																	

	<p>Answer after DVV Verification :</p> <table> <tr> <td>2020-21</td> <td>2019-20</td> <td>2018-19</td> <td>2017-18</td> <td>2016-17</td> </tr> <tr> <td>281</td> <td>306</td> <td>188</td> <td>203</td> <td>141</td> </tr> </table>	2020-21	2019-20	2018-19	2017-18	2016-17	281	306	188	203	141										
2020-21	2019-20	2018-19	2017-18	2016-17																	
281	306	188	203	141																	
3.5.2	<p>Revenue generated from consultancy and corporate training during the last five years (INR in Lakhs).</p> <p>3.5.2.1. Total amount generated from consultancy and corporate training year-wise during the last five years (INR in lakhs).</p> <p>Answer before DVV Verification :</p> <table> <tr> <td>2020-21</td> <td>2019-20</td> <td>2018-19</td> <td>2017-18</td> <td>2016-17</td> </tr> <tr> <td>143.505</td> <td>287.698</td> <td>298.188</td> <td>331.628</td> <td>147.702</td> </tr> </table> <p>Answer after DVV Verification :</p> <table> <tr> <td>2020-21</td> <td>2019-20</td> <td>2018-19</td> <td>2017-18</td> <td>2016-17</td> </tr> <tr> <td>142.027</td> <td>281.20</td> <td>295.091</td> <td>329.94</td> <td>146.04</td> </tr> </table>	2020-21	2019-20	2018-19	2017-18	2016-17	143.505	287.698	298.188	331.628	147.702	2020-21	2019-20	2018-19	2017-18	2016-17	142.027	281.20	295.091	329.94	146.04
2020-21	2019-20	2018-19	2017-18	2016-17																	
143.505	287.698	298.188	331.628	147.702																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
142.027	281.20	295.091	329.94	146.04																	
3.6.2	<p>Number of awards received by the Institution, its teachers and students from Government /Government recognised bodies in recognition of the extension activities carried out during the last five years</p> <p>3.6.2.1. Total number of awards and recognition received for extension activities from Government/ Government recognised bodies year-wise during the last five years.</p> <p>Answer before DVV Verification :</p> <table> <tr> <td>2020-21</td> <td>2019-20</td> <td>2018-19</td> <td>2017-18</td> <td>2016-17</td> </tr> <tr> <td>42</td> <td>23</td> <td>41</td> <td>25</td> <td>13</td> </tr> </table> <p>Answer after DVV Verification :</p> <table> <tr> <td>2020-21</td> <td>2019-20</td> <td>2018-19</td> <td>2017-18</td> <td>2016-17</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </table> <p>Remark : HEI has not provided any e-copies for awards for Extension Activities viz. NSS, NCC, Red Cross.</p>	2020-21	2019-20	2018-19	2017-18	2016-17	42	23	41	25	13	2020-21	2019-20	2018-19	2017-18	2016-17	0	0	0	0	0
2020-21	2019-20	2018-19	2017-18	2016-17																	
42	23	41	25	13																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
0	0	0	0	0																	
3.6.3	<p>Number of extension and outreach programs conducted by the institution through NSS/NCC, Government and Government recognised bodies during the last five years</p>																				

	<p>3.6.3.1. Number of extension and outreach programs conducted by the institution those through NSS/NCC, Government and Government recognised bodies during the last five years</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>295</td><td>80</td><td>60</td><td>24</td><td>22</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>267</td><td>69</td><td>56</td><td>11</td><td>10</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	295	80	60	24	22	2020-21	2019-20	2018-19	2017-18	2016-17	267	69	56	11	10
2020-21	2019-20	2018-19	2017-18	2016-17																	
295	80	60	24	22																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
267	69	56	11	10																	
3.6.4	<p>Average percentage of students participating in extension activities listed at 3.6.3 above during the last five years</p> <p>3.6.4.1. Total number of students participating in extension activities listed at 3.6.3 above year-wise during the last five years.</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>8495</td><td>8294</td><td>8206</td><td>1361</td><td>948</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>3346</td><td>2445</td><td>2477</td><td>1361</td><td>948</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	8495	8294	8206	1361	948	2020-21	2019-20	2018-19	2017-18	2016-17	3346	2445	2477	1361	948
2020-21	2019-20	2018-19	2017-18	2016-17																	
8495	8294	8206	1361	948																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
3346	2445	2477	1361	948																	
3.7.1	<p>Number of Collaborative activities for research, Faculty exchange, Student exchange/ internship per year</p> <p>3.7.1.1. Total number of Collaborative activities with other institutions / research establishment / industry for research and academic development of faculty and students year-wise during the last five years.</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>231</td><td>179</td><td>173</td><td>165</td><td>121</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>150</td><td>93</td><td>98</td><td>95</td><td>60</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	231	179	173	165	121	2020-21	2019-20	2018-19	2017-18	2016-17	150	93	98	95	60
2020-21	2019-20	2018-19	2017-18	2016-17																	
231	179	173	165	121																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
150	93	98	95	60																	

	Remark : Values have been changed considering the intent and relevance of the metric																				
3.7.2	<p>Number of functional MoUs with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years.</p> <p>3.7.2.1. Number of functional MoUs with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research year-wise during the last five years.</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>15</td><td>18</td><td>19</td><td>25</td><td>26</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>23</td><td>11</td><td>6</td><td>12</td><td>8</td></tr></table> <p>Remark : Values have been changed after studying the attachments</p>	2020-21	2019-20	2018-19	2017-18	2016-17	15	18	19	25	26	2020-21	2019-20	2018-19	2017-18	2016-17	23	11	6	12	8
2020-21	2019-20	2018-19	2017-18	2016-17																	
15	18	19	25	26																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
23	11	6	12	8																	
4.3.1	<p>Percentage of classrooms and seminar halls with ICT - enabled facilities such as LCD, smart board, Wi-Fi/LAN, audio video recording facilities. (Data for the latest completed academic year)</p> <p>4.3.1.1. Number of classrooms and seminar halls with ICT facilities</p> <p>Answer before DVV Verification : 220</p> <p>Answer after DVV Verification : 103</p> <p>Remark : In the Excel sheet provided by HEI during its Clarification input , The only classrooms and seminar halls has been considered and numbers changed accordingly</p>																				
5.2.3	<p>Percentage of student progression to higher education (previous graduating batch).</p> <p>5.2.3.1. Number of outgoing student progressing to higher education.</p> <p>Answer before DVV Verification : 148</p> <p>Answer after DVV Verification : 136</p>																				
5.3.1	<p>Number of awards / medals won by students for outstanding performance in sports / cultural activities at inter-university / state / national / international events (award for a team event should be counted as one) during the last five years.</p> <p>5.3.1.1. Number of awards/medals won by students for outstanding performance in sports</p>																				

	<p>/ cultural activities at inter-university / state / national / international events (award for a team event should be counted as one) year - wise during the last five years.</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>37</td><td>77</td><td>45</td><td>11</td><td>8</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>29</td><td>48</td><td>33</td><td>6</td><td>4</td></tr></table> <p>Remark : Values have been changed based on "Outstanding" performance</p>	2020-21	2019-20	2018-19	2017-18	2016-17	37	77	45	11	8	2020-21	2019-20	2018-19	2017-18	2016-17	29	48	33	6	4
2020-21	2019-20	2018-19	2017-18	2016-17																	
37	77	45	11	8																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
29	48	33	6	4																	
5.3.3	<p>Average number of sports and cultural events / competitions organised by the institution per year</p> <p>5.3.3.1. Number of sports and cultural events / competitions organised by the institution year - wise during the last five years.</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>19</td><td>82</td><td>74</td><td>57</td><td>51</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>19</td><td>63</td><td>56</td><td>39</td><td>34</td></tr></table> <p>Remark : Values have been changed as per attachment</p>	2020-21	2019-20	2018-19	2017-18	2016-17	19	82	74	57	51	2020-21	2019-20	2018-19	2017-18	2016-17	19	63	56	39	34
2020-21	2019-20	2018-19	2017-18	2016-17																	
19	82	74	57	51																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
19	63	56	39	34																	
6.3.3	<p>Average number of professional development / administrative training Programmes organized by the institution for teaching and non-teaching staff during the last five years.</p> <p>6.3.3.1. Total number of professional development /administrative training Programmes organized by the institution for teaching and non teaching staff year-wise during the last five years</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>33</td><td>56</td><td>33</td><td>50</td><td>17</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	33	56	33	50	17										
2020-21	2019-20	2018-19	2017-18	2016-17																	
33	56	33	50	17																	

	<p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>33</td><td>56</td><td>33</td><td>33</td><td>12</td></tr></table> <p>Remark : Values have been changed as per attachment</p>	2020-21	2019-20	2018-19	2017-18	2016-17	33	56	33	33	12										
2020-21	2019-20	2018-19	2017-18	2016-17																	
33	56	33	33	12																	
6.3.4	<p>Average percentage of teachers undergoing online/ face-to-face Faculty Development Programmes (FDP)during the last five years (Professional Development Programmes, Orientation / Induction Programmes, Refresher Course, Short Term Course).</p> <p>6.3.4.1. Total number of teachers attending professional development Programmes, viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programmes year wise during last five years</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>142</td><td>142</td><td>91</td><td>85</td><td>67</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>142</td><td>141</td><td>91</td><td>82</td><td>67</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	142	142	91	85	67	2020-21	2019-20	2018-19	2017-18	2016-17	142	141	91	82	67
2020-21	2019-20	2018-19	2017-18	2016-17																	
142	142	91	85	67																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
142	141	91	82	67																	
6.4.3	<p>Funds / Grants received from non-government bodies, individuals, philanthropists during the last five years (not covered in Criterion III and V) (INR in Lakhs)</p> <p>6.4.3.1. Total Grants received from non-government bodies, individuals, Philanthropers year wise during the last five years (INR in Lakhs)</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>25</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>21.24</td></tr></table> <p>Remark : Value has been changed as per Utilization</p>	2020-21	2019-20	2018-19	2017-18	2016-17	0	0	0	0	25	2020-21	2019-20	2018-19	2017-18	2016-17	0	0	0	0	21.24
2020-21	2019-20	2018-19	2017-18	2016-17																	
0	0	0	0	25																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
0	0	0	0	21.24																	

2. Extended Profile Deviations

Extended ID	Extended Questions																				
1.1	<p>Number of programs offered year-wise for last five years</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>116</td><td>114</td><td>113</td><td>110</td><td>106</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>81</td><td>81</td><td>80</td><td>77</td><td>73</td></tr></table> <p>Remark : Values have been changed considering Ph.D. and M.Phil. Programs as single individually</p>	2020-21	2019-20	2018-19	2017-18	2016-17	116	114	113	110	106	2020-21	2019-20	2018-19	2017-18	2016-17	81	81	80	77	73
2020-21	2019-20	2018-19	2017-18	2016-17																	
116	114	113	110	106																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
81	81	80	77	73																	
3.1	<p>Number of courses in all programs year-wise during last five years</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>2355</td><td>1975</td><td>1844</td><td>1776</td><td>1750</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>2000</td><td>1600</td><td>1700</td><td>1776</td><td>1750</td></tr></table>	2020-21	2019-20	2018-19	2017-18	2016-17	2355	1975	1844	1776	1750	2020-21	2019-20	2018-19	2017-18	2016-17	2000	1600	1700	1776	1750
2020-21	2019-20	2018-19	2017-18	2016-17																	
2355	1975	1844	1776	1750																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
2000	1600	1700	1776	1750																	
4.1	<p>Number of eligible applications received for admissions to all the programs year-wise during last five years</p> <p>Answer before DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>79251</td><td>65301</td><td>52840</td><td>42639</td><td>39953</td></tr></table> <p>Answer after DVV Verification :</p> <table><tr><td>2020-21</td><td>2019-20</td><td>2018-19</td><td>2017-18</td><td>2016-17</td></tr><tr><td>470420</td><td>418937</td><td>420685</td><td>412227</td><td>403286</td></tr></table> <p>Remark : Values have been changed as per attachment</p>	2020-21	2019-20	2018-19	2017-18	2016-17	79251	65301	52840	42639	39953	2020-21	2019-20	2018-19	2017-18	2016-17	470420	418937	420685	412227	403286
2020-21	2019-20	2018-19	2017-18	2016-17																	
79251	65301	52840	42639	39953																	
2020-21	2019-20	2018-19	2017-18	2016-17																	
470420	418937	420685	412227	403286																	

4.3	Total number of classrooms and seminar halls Answer before DVV Verification : 220 Answer after DVV Verification : 110 Remark : Number has been corrected
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