COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
KOCHI -682022, KERALA

INTERNAL QUALITY ASSURANCE CELL

ANNUAL QUALITY ASSURANCE REPORT 2020-2021

SUBMITTED TO

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL
(NAAC)
BANGALORE

YEARLY STATUS REPORT - 2020-2021

Part A	
Data of the Institution	
1.Name of the Institution	**COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY**
• Name of the Head of the institution	**Dr. K. N Madhusoodanan**
• Designation	**Vice- Chancellor**
• Does the institution function from its own campus?	**Yes**
• Phone no./Alternate phone no.	**04842577619**
• Mobile no	**9349406334**
• Registered e-mail	**iqaccusat@gmail.com**
• Alternate e-mail address	**iqac@cusat.ac.in**
• City/Town	**Kalamassery**
• State/UT	**Kerala**
• Pin Code	**682022**
2.Institutional status	

• University	**State**
• Type of Institution	**Co-education**
• Location	**Urban**
• Name of the IQAC Co-ordinator/Director	**Dr. K. Girish Kumar**
• Phone no./Alternate phone no	**04842862748**
• Mobile	**9847363660**
• IQAC e-mail address	**iqaccusat@gmail.com**
• Alternate Email address	**iqac@cusat.ac.in**
3.Website address (Web link of the AQAR (Previous Academic Year)	**https://iqac.cusat.ac.in/assets /web/uploads/document /CUSAT_AQAR_2019-201.pdf**
4.Whether Academic Calendar prepared during the year?	**Yes**

5.Accreditation Details

Cycle	Grade	CGPA	Year of Accreditation	Validity from	Validity to
Cycle 2	**A**	**3.09**	**2016**	**16/09/2016**	**15/09/2021**

6.Date of Establishment of IQAC	**10/04/2007**

7.Provide the list of Special Status conferred by Central/ State Government-UGC/CSIR/DST/DBT/ICMR/TEQIP/World Bank/CPE of UGC etc.

Institution/ Department/Faculty	Scheme	Funding agency	Year of award with duration	Amount
Advanced Centre for Atmospheric Radar Research	**WOSA**	**DST, Govt. of India**	**2018 3 Years**	**18.20**
Advanced Centre for Atmospheric Radar Research	**SERB Project**	**SERB, DST, Govt. Of India**	**2018 3 Years**	**13.98**
Department of Applied chemistry	**UGC SAP**	**UGC**	**2016 5 Years**	**132.00**

Department of Applied chemistry	DST	DST	2017 3 Years	22.40
Department of Applied chemistry	UGC	UGC-BSR	2019 2 Years	10.00
Department of Applied chemistry	UGC	UGC	2019 2 Years	10.00
Department of Applied chemistry	DST	DST-GITA	2020 3 Years	22.88
Department of Atmospheric Sciences	DST	DST-SERB	2017 3 Years	24.80
Department of Atmospheric Sciences	DST	DST-SERB	2017 3 Years	36.91
Department of Atmospheric Sciences	DST	DST	2017 3 Years	99.03
Department of Atmospheric Sciences	DST	DST-SERB	2018 3 Years	30.51
Department of Atmospheric Sciences	DST	DST-INSPIRE FACULTY SCHEME	2018 5Years	35.00
Department of Biotechnology	DBT	DBT	2016 5Years	88.00
Department of Biotechnology	DST	DST	2016 5Years	83.00
Department of Biotechnology	DBT-Biocare	DBT	2017 3years	54.00
Department of Biotechnology	INSA	DST	2017 3Years	49.85
Department of Biotechnology	DBT-EMR	DBT	2017 3Years	41.78
Department of Biotechnology	DST-EMR	DST	2018 3Years	47.53
Department of Biotechnology	ICMR-EMR	ICMR	2019 3Years	102.00
Department of Biotechnology	DBT	DBT-Wellcome Trust	2020 5years	133.00
Department of Biotechnology	DBT	DBT	2020 3years	23.00

Department of Biotechnology	ICMR	ICMR	2020 3Years	23.00
Centre for Neuroscience, CUSAT	ICMR-EMR	ICMR	2019 3Years	102.00
Department of Chemical Oceanography	DST	DST- KIRAN Division	2019 3Years	21.47
Department of Computer Applications	DST	DST	2019 3Years	25.00
Department of Computer Applications	DBT	DBT	2020 5Years	74.99
Department of Electronics	DST	DST SERB	2018 3years	25.00
Department of Electronics	DST	DST SERB, CII and Vuelogix Technologies	2020 4Years	33.60
Department of Electronics	DST	DST	2021 1Years	24.44
School of Environmental Studies	UGC SAP	UGC	2015 5Years	135.00
School of Environmental Studies	DST	DST	2017 3Years	31.09
School of Legal Studies	UGC –Special Assistance Programme on Corporate Governace and Securities Law	UGC	2018 5Years	70.00
Department of Marine biology, microbiology and biochemistry	UGC-SAP (DRS-ll)	UGC	2018 5Years	65.00
Department of Marine biology, microbiology and biochemistry	UGC-BSR Research Start-Up Grant	UGC	2018 2Years	10.00

Department of Marine biology, microbiology and biochemistry	UGC (Start Up Research Grant)	University Grants Commission	2018 2Years	10.00
Department of Marine biology, microbiology and biochemistry	UGC-BSR Research Start-Up Grant	UGC	2018 2Years	10.00
Department of Marine geology and geophysics	SERB-DST (EMEQ Scheme)	DST, New Delhi	2017 3Years	30.56
Department of Marine geology and geophysics	DST NRDMS (Scheme)	DST New Delhi	2019 2Years	31.50
Department of Marine geology and geophysics	DST SERB (EMEQ scheme)	DST New Delhi	2019 2Years	40.50
National Centre for Aquatic Animal Health	DBT	DBT, Govt. of India	2017 3Years	118.66
National Centre for Aquatic Animal Health	DBT	DBT, Govt. of India	2017 3Years	51.49
National Centre for Aquatic Animal Health	DBT	DBT, Govt. of India	2017 3Years	70.21
National Centre for Aquatic Animal Health	DBT	DBT, Govt. of India	2018 3Years	70.91
National Centre for Aquatic Animal Health	DBT	DBT, Govt. of India	2019 3Years	53.89
National Centre for Aquatic Animal Health	DST	DST-SERB	2019 2Years	27.95
National Centre for Aquatic Animal Health	UGC	University Grants Commission (GC)	2019 2Years	10.00
National Centre for Aquatic Animal Health	DBT	DBT, Govt. of India	2021 5Years	74.99

International School of Photonics	DST–FIST	DST	2017 5Years	91.00
International School of Photonics	DST–WOSA	DST	2019 3Years	25.79
International School of Photonics	DST – EMEQ	DST	2019 3Years	34.99
Department of Physical Oceanography	DST	DST–SERB (TARE)	2018 3Years	18.00
Department of Physical Oceanography	DST	DST–SERB (TARE)	2020 3Years	18.00
Department of Physics	DST	DST–INSPIRE	2017 5Years	35.00
Department of Physics	UGC	UGC–BSR	2018 2Years	10.00
Department of Physics	UGC–BSR– STARTUP GRANT	UGC–BSR	2018 2Years	10.00
Department of Physics	UGC	UGC–BSR	2019 2Years	10.00
Department of Physics	UGC	UGC–BSR	2019 2Years	10.00
Department of Physics	DST	DST	2019 5Years	114.48
Department of Physics	UGS	UGC–BSR	2019 2Years	10.00
Department of Physics	UGC	UGC–BSR	2019 2Years	10.00
Department of Physics	UGC	UGC–BSR	2019 2Years	10.00
Department of Physics	FIST	DST	2020 5Years	170.00
Polymer Science and Rubber Technology	SAP DRS II	UGC SAP DRS –II	2015 5Years	124.00
Polymer Science and Rubber Technology	FIST	DST–FIST	2017 5Years	83.00

Polymer Science and Rubber Technology	DST	DST-SERB	2017 3.5 Years	30.38
Polymer Science and Rubber Technology	DBT	DBT	2017 3Years	47.78
Polymer Science and Rubber Technology	DST	DST-SERB	2020 3Years	30.47
Department of Statistics	DST-FIST	FIST	2015 5Years	53.00
Department of Statistics	UGC- SAP	SAP	2015 5Years	37.00
Department of Statistics	DST SERB	DST	2018 3Years	6.60
Department of Statistics	DST	DST SERB	2019 3Years	6.60
Department of Statistics	DST	DST SERB	2020 3Years	6.60
Department of Statistics	DST	DST SERB	2020 3Years	6.60
Department of Hindi	UGC-SAP- DSA Phase I	UGC	2019 5Years	48.50

8.Whether composition of IQAC as per latest NAAC guidelines	**Yes**	
• Upload latest notification of formation of IQAC	**View File**	
9.No. of IQAC meetings held during the year	**10**	
• The minutes of IQAC meeting and compliance to the decisions have been uploaded on the institutional website. (Please upload, minutes of meetings and action taken report)	**Yes**	
10.Whether IQAC received funding from any of the funding agency to support its activities during the year?	**No**	

- If yes, mention the amount

11.Significant contributions made by IQAC during the current year (maximum five bullets)

1.The IQAC conducted academic audit of the University departments and administrative audit in 2020. These significantly contributed to the constant review of the various processes of the University.

2.The outcome based education has been implemented in the university with effect from the academic year 2020-21.

3.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.

4.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.

5.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.Plan of action chalked out by the IQAC in the beginning of the Academic year towards Quality Enhancement and the outcome achieved by the end of the Academic year

Plan of Action	Achievements/Outcomes
Implementation of Outcome Based Education (OBE) in academic programmes of the University	OBE has been implemented with effect from the academic year 2020-21
Conduct of academic and administrative audit	Conducted Academic and Administrative Audits
Conduct of Workshops/Seminars on quality	Conducted five day Workshop on Quality Awareness and Documentation Skills
Inviting eminent academicians from reputed foreign institutions under Chancellor's Chair Scheme	Dr. David Hunter , Senior Lecturer, University of Adelaide was appointed as Chancellor's Chair Professor during January to September 2021
Conduct of orientation programme for staff	Conducted orientation programme for new faculty members

Conduct of Environment Audit	Environment Audit was conducted in 2020-21 and the audit report was published
Conduct of Green Audit	Green Audit was conducted and the report was published

13.Whether the AQAR was placed before statutory body?	**Yes**

- Name of the statutory body

Name	Date of meeting(s)
Syndicate	**27/08/2021**

14.Whether NAAC/or any other accredited body(s) visited IQAC or interacted with it to Assess the functioning?	**No**

15.Whether institutional data submitted to AISHE

Year	Date of Submission
2019-20	**26/06/2020**

Extended Profile

1.Programme

1.1 Number of programmes offered during the year:	**116**
1.2 Number of departments offering academic programmes	**30**

2.Student

2.1 Number of students during the year	**8592**
2.2 Number of outgoing / final year students during the year:	**2195**
2.3 Number of students appeared in the University examination during the year	**7221**
2.4	**152**

Number of revaluation applications during the year	

3.Academic

3.1 Number of courses in all Programmes during the year	**2355**
3.2 Number of full time teachers during the year	**460**
3.3 Number of sanctioned posts during the year	**577**

4.Institution

4.1 Number of eligible applications received for admissions to all the Programmes during the year	**79251**
4.2 Number of seats earmarked for reserved category as per GOI/ State Govt. rule during the year	**1128**
4.3 Total number of classrooms and seminar halls	**220**
4.4 Total number of computers in the campus for academic purpose	**2092**
4.5 Total expenditure excluding salary during the year (INR in lakhs)	**2339.05**

Part B
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 University
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.

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	Documents
Upload relevant supporting document	**View File**

1.1.2 - Number of Programmes where syllabus revision was carried out during the year

74

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

1.1.3 - Total number of courses having focus on employability/ entrepreneurship/ skill development offered by the University during the year

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

416

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

1.2 - Academic Flexibility

1.2.1 - Number of new courses introduced of the total number of courses across all programs offered during the year

416

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

1.2.2 - Number of Programmes in which Choice Based Credit System (CBCS)/elective course system has been implemented during the year

100

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

1.3 - Curriculum Enrichment

1.3.1 - Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

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.

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. PSRTdepartment 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 inShip 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 programmeoffer 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 Policycommitted 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.TechProgramme. Courses such as Feminine Discourse and Adivasi Discourse are offered in Hindi department. Courses on justice in a globalized worldin LLM

Programme are concerned with human side of law. Women Study Centre offers elective courses and seminars concerned with gender equity.

File Description	Documents
Upload relevant supporting document	**View File**

1.3.2 - Number of value-added courses for imparting transferable and life skills offered during the year

34

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

1.3.3 - Total number of students enrolled in the courses under 1.3.2 above

1.3.3.1 - Number of students enrolled in value-added courses imparting transferable and life skills offered during the year

4179

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

1.3.4 - Number of students undertaking field projects / research projects / internships during the year

3766

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

1.4 - Feedback System

1.4.1 - Structured feedback for design and review of syllabus – semester wise / is received from Students Teachers Employers Alumni	**• All 4 of the above**

File Description	Documents
Upload relevant supporting document	**View File**

1.4.2 - Feedback processes of the institution may be classified as follows	**• Feedback collected, analysed and action taken and feedback available on website**

File Description	Documents
Upload relevant supporting document	**View File**

TEACHING-LEARNING AND EVALUATION

2.1 - Student Enrollment and Profile

2.1.1 - Demand Ratio

2.1.1.1 - Number of seats available during the year

2797

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

2.1.2 - Total number of seats filled against reserved categories (SC, ST, OBC, Divyangjan, etc.) as per applicable reservation policy during the year (Excluding Supernumerary Seats)

2.1.2.1 - Number of actual students admitted from the reserved categories during the year

810

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

2.2 - Catering to Student Diversity

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

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	Documents
Upload relevant supporting document	**View File**
Link For Additional Information	**https://cusat.ac.in/student/**

2.2.2 - Student - Full time teacher ratio during the year

Number of Students	Number of Teachers
19	1

File Description	Documents
Upload relevant supporting document	**View File**

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

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 todo 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	Documents
Upload relevant supporting document	**View File**

2.3.2 - Teachers use ICT enabled tools including online resources for effective teaching and learning processes during the year

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 areconducted in the seminar hall using ICT – enabled tools.

File Description	Documents
Upload relevant supporting document	**View File**

2.3.3 - Ratio of students to mentor for academic and other related issues during the year

2.3.3.1 - Number of mentors

460

File Description	Documents
Upload relevant supporting document	**View File**

2.4 - Teacher Profile and Quality

2.4.1 - Total Number of full time teachers against sanctioned posts during the year

460

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

2.4.2 - Total Number of full time teachers withPh.D./D.M/M.Ch./D.N.B Superspeciality/D.Sc./D'Lit. during the year

323

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

2.4.3 - Total teaching experience of full time teachers in the same institution during the year

2.4.3.1 - Total experience of full-time teachers

4258

File Description	Documents

| Upload the data template | **View File** |
| Upload relevant supporting document | **View File** |

2.4.4 - Total number of full time teachers who received awards, recognition, fellowships at State, National, International level from Government/Govt. recognised bodies during the year

105

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

2.5 - Evaluation Process and Reforms

2.5.1 - Number of days from the date of last semester-end/ year- end examination till the declaration of results during the year

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 year

28

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

2.5.2 - Total number of student complaints/grievances about evaluation against total number appeared in the examinations during the year

152

File Description	Documents
Upload relevant supporting document	**View File**

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

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 theYear 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. Plagarism 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.

File Description	Documents
Upload relevant supporting document	**No File Uploaded**

2.5.4 - Status of automation of Examination division along with approved Examination Manual	**A. 100% automation of entire division & implementation of Examination Management System (EMS)**

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

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

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 ans 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	Documents
Upload relevant supporting document	**View File**

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

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.

File Description	Documents
Upload relevant supporting document	**View File**

2.6.3 - Number of students passed during the year

2.6.3.1 - Total number of final year students who passed the university examination during the year

1550

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

2.7 - Student Satisfaction Survey

2.7.1 - Student Satisfaction Survey (SSS) on overall institutional performance (Institution may design its own questionnaire) (results and details need to be provided as a web link)

https://cusat.ac.in/naac/feedback/feedback.html

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

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	Documents
Upload relevant supporting document	**View File**

3.1.2 - The institution provides seed money to its teachers for research (amount INR in Lakhs)

68.45

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.1.3 - Number of teachers receiving national/ international fellowship/financial support by various agencies for advanced studies/ research during the year

22

File Description	Documents
Upload the data template	**View File**

| Upload relevant supporting document | **View File** |

3.1.4 - Number of JRFs, SRFs, Post-Doctoral Fellows, Research Associates and other research fellows enrolled in the institution during the year

124

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.1.5 - Institution has the following facilities to support research Central Instrumentation Centre Animal House/Green House Museum Media laboratory/Studios Business Lab Research/Statistical Databases Moot court Theatre Art Gallery	**A. Any 4 or more of the above**

File Description	Documents
Upload relevant supporting document	**View File**

3.1.6 - Number of departments with UGC-SAP, CAS, DST-FIST, DBT, ICSSR and other recognitions by national and international agencies during the year

27

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

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 year (INR in Lakhs)

473.02

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.2.2 - Grants for research projects sponsored by the government agencies during the year (INR in Lakhs)

1981.11

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

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

49

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

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

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 preincubation services to researchers and potential entrepreneurs.The services include expert advice, testing facilitates, 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	Documents
Upload relevant supporting document	**No File Uploaded**

3.3.2 - Number of workshops/seminars conducted on Research Methodology, Intellectual Property Rights (IPR), Entrepreneurship and Skill Development during the year

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

137

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

3.3.3 - Number of awards / recognitions received for research/innovations by the institution/teachers/research scholars/students during the year

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

92

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.4 - Research Publications and Awards

3.4.1 - The institution ensures implementation of its stated Code of Ethics for research

3.4.1.1 - The institution has a stated Code of Ethics for research and the implementation of which is ensured through the following • Inclusion of research ethics in the research methodology course work • Presence of institutional Ethics committees (Animal, chemical, bio-ethics etc) • Plagiarism check • Research Advisory Committee	**A. All of the above**

File Description	Documents
Upload relevant supporting document	**View File**

3.4.2 - The institution provides incentives to teachers who receive state, national and	**A. All of the above**

international recognitions/awards Commendation and monetary incentive at a University function Commendation and medal at a University function Certificate of honor Announcement in the Newsletter / website

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

3.4.3 - Number of Patents published/awarded during the year

3.4.3.1 - Total number of Patents published/awarded year wise during the year

2

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.4.4 - Number of Ph.D's awarded per teacher during the year

3.4.4.1 - How many Ph.D's are awarded during the year

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.4.5 - Number of research papers per teacher in the Journals notified on UGC website during the year

673

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

3.4.6 - Number of books and chapters in edited volumes published per teacher during the year

3.4.6.1 - Total number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings during the year

358

File Description	Documents

Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.4.7 - E-content is developed by teachers For e-PG-Pathshala For CEC (Under Graduate) For SWAYAM For other MOOCs platform For NPTEL/NMEICT/any other Government Initiatives For Institutional LMS	**A. Any 5 or all of the above**

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

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

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	Documents
Upload relevant supporting document	**View File**

3.5.2 - Revenue generated from consultancy and corporate training during the year (INR in Lakhs)

3.5.2.1 - Total amount generated from consultancy and corporate training during the year (INR in lakhs)

143.505

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

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 year

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, VFPCK 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	Documents
Upload relevant supporting document	**View File**

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 year

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

42

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.6.3 - Number of extension and outreach programs conducted by the institution including those through NSS/NCC/Red cross/YRC during the year(including Government initiated programs such as Swachh Bharat, Aids Awareness, Gender Issue, etc. and those organised in collaboration with industry, community and NGOs)

295

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.6.4 - Total number of students participating in extension activities listed at 3.6.3 above during the year

8495

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

3.7 - Collaboration

3.7.1 - Number of collaborative activities with other institutions/ research establishment/industry for research and academic development of faculty and students during the year

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

231

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

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 year

15

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

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.

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, onlinecourses, 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 audtorium 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	Documents
Upload relevant supporting document	**View File**

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

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 SportsAssociations 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	Documents
Upload relevant supporting document	**View File**

4.1.3 - Availability of general campus facilities and overall ambience

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 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	Documents
Upload relevant supporting document	**View File**

4.1.4 - Total expenditure excluding salary for infrastructure augmentation during the year (INR in Lakhs)

785.75

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

4.2 - Library as a Learning Resource

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

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	Documents
Upload relevant supporting document	**View File**

| 4.2.2 - Institution has subscription for e-Library resources Library has regular subscription for the following: e - journals e-books e-ShodhSindhu Shodhganga Databases | **A. Any 4 or all of the above** |

File Description	Documents
Upload relevant supporting document	**View File**

4.2.3 - Annual expenditure for purchase of books/ e-books and subscription to journals/e-journals during the year (INR in Lakhs)

343.78

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

4.2.4 - Number of usage of library by teachers and students per day (foot falls and login data for online access)

3804

File Description	Documents
Upload relevant supporting document	**View File**

4.3 - IT Infrastructure

4.3.1 - Number of classrooms and seminar halls with ICT - enabled facilities such as LCD, smart board, Wi-Fi/LAN, audio video recording facilities during the year

220

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

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

Cochin University of Science and Technology has formulated an IT policy and has made adequate budgetory 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	Documents
Upload relevant supporting document	**View File**

4.3.3 - Student - Computer ratio during the year

Number of students	Number of Computers available to students for academic purposes
8592	**2092**

4.3.4 - Available bandwidth of internet connection in the Institution (Leased line)	• **≥1 GBPS**

File Description	Documents
Upload relevant supporting document	**View File**

4.3.5 - Institution has the following Facilities for e-content development Media centre Audio visual centre Lecture Capturing System(LCS) Mixing equipment's and softwares for editing	**A. All of the above**

File Description	Documents
Upload relevant supporting document	**View File**
Upload the data template	**View File**

4.4 - Maintenance of Campus Infrastructure

4.4.1 - Total expenditure incurred on maintenance of physical facilities and academic support facilities excluding salary component during the year

1220.90

File Description	Documents

Upload the data template	**View File**
Upload relevant supporting document	**View File**

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.

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 niversity. 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 workin 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) inaccordance 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	Documents
Upload relevant supporting document	**View File**

STUDENT SUPPORT AND PROGRESSION

5.1 - Student Support

5.1.1 - Total number of students benefited by scholarships and free ships provided by the institution, Government and non-government agencies (NGOs) during the year (other than the students receiving scholarships under the government schemes for reserved categories)

2097

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

5.1.2 - Total number of students benefited by career counselling and guidance for competitive examinations offered by the Institution during the year

7235

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

5.1.3 - Following Capacity development and skills enhancement initiatives are taken by the institution Soft skills Language and communication skills Life skills (Yoga, physical fitness, health and hygiene) Awareness of trends in technology	**A. All of the above**

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

5.1.4 - The Institution adopts the following for redressal of student grievances including sexual harassment and ragging cases Implementation of guidelines of statutory/regulatory bodies Organisation wide awareness and	**• All of the above**

undertakings on policies with zero tolerance Mechanisms for submission of online/offline students' grievances Timely redressal of the grievances through appropriate committees

File Description	Documents
Upload relevant supporting document	**View File**

5.2 - Student Progression

5.2.1 - Number of students qualifying in state/ national/ international level examinations during the year (eg:NET/SLET/GATE/GMAT/CAT/ GRE/TOEFL/Civil Services/State government examinations)

5.2.1.1 - Number of students who qualified in state/ national/ international examinations (e.g.: IIT-JAM/NET/SET/JRF/ GATE /GMAT /CAT/ GRE/ TOEFL/Civil Services/State government examinations) during the year

89

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

5.2.2 - Total number of placement of outgoing students during the year

597

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

5.2.3 - Number of recently graduated students who have progressed to higher education (previous graduating batch) during the year

148

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

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 year

37

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

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

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 Sudents' 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	Documents
Upload relevant supporting document	**View File**

5.3.3 - Number of sports and cultural events / competitions organised by the institution during the year

19

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

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 during the year

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 Aumni 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	Documents
Upload relevant supporting document	**View File**

5.4.2 - Alumni contribution during the year (INR in Lakhs)	**A. ≥ 5Lakhs**

File Description	Documents
Upload relevant supporting document	**View File**

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

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.

File Description	Documents
Upload relevant supporting document	No File Uploaded

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

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.

File Description	Documents
Upload relevant supporting document	No File Uploaded

6.2 - Strategy Development and Deployment

6.2.1 - The institutional Strategic plan is effectively deployed

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.

File Description	Documents
Upload relevant supporting document	**No File Uploaded**

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.

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

File Description	Documents
Upload relevant supporting document	No File Uploaded

6.2.3 - Institution Implements e-governance in its areas of operations

6.2.3.1 - e-governance is implemented covering following areas of operation
 	
  1. Administration
  2. Finance and Accounts
  3. Student Admission and
	A. All of the above

Support
4. Examination

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

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

A performance appraisal system as envisaged by UGC is introduced in the University and annual appraisalfeedback 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. Promotionalavenues are strictly in accordance with the UGC carrier advancement schemes as per the UGC regulationsfrom time to time. The university offers all its support to promote research and publications of its facultymembers.

The university also runs short term programmes for enhancing the skills/expertise of its facultymembers.

The promotion of faculty of the University follows the Career Advancement Scheme (CAS) provided byUGC. Under the scheme cleareligibility criteria is defined for advancement at each stage of the career andonly those faculty who clear the criteria can apply for promotion. The promotion is based on thePerformance Based Appraisal System (PBAS) which consists of objective assessment of the achievementsand subjective assessment through interviews.

The promotion scheme of all the non-teaching staff is per the state government's guidelines. KeralaService Rules is followed in this case. There are different categories and grades for the staff and thepromotion is given based on the service and performance. The university runs short term programmes forenhancing 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 introducedby 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. MedicalReimbursementScheme.**
- **Research awards for faculty.**
- **The Staff Welfare Fund instituted for the welfare of staff members, through which financial aid isbeing granted to the staff members for various purposes like education, treatment etc. A scheme togive awards to the wards of University staff who secure higher distinctions in examinations isenvisaged under the Staff Welfare Fund.**
- **Cochin University Employees Co-operative Society for promoting thrift andcooperation.**
- **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 tothe staff during out of office hours**

File Description	Documents
Upload relevant supporting document	**No File Uploaded**

6.3.2 - Total number of teachers provided with financial support to attend conferences / workshops and towards membership fee of professional bodies during the year

10

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

6.3.3 - Number of professional development / administrative training Programmes organized by the institution for teaching and non-teaching staff during the year

33

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

6.3.4 - Total number of teachers undergoing online/ face-to-face Faculty Development Programmes (FDP)during the year(Professional Development Programmes, Orientation / Induction Programmes Refresher Course, Short Term Course)

142

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**View File**

6.4 - Financial Management and Resource Mobilization

6.4.1 - Institutional strategies for mobilisation of funds and the optimal utilisation of resources

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	Documents
Upload relevant supporting document	**View File**

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

91.16

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting document	**No File Uploaded**

6.4.3 - Funds / Grants received from non-government bodies, individuals,philanthropists during the year for development and maintenance of infrastructure (not covered under Criteria III and V)(INR in Lakhs)

0

File Description	Documents
Upload the data template	**No File Uploaded**

Upload relevant supporting document	**No File Uploaded**

6.4.4 - Institution conducts internal and external financial audits regularly

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 besummarily 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 periodicallyon 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.

File Description	Documents
Upload relevant supporting document	**No File Uploaded**

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

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 assessmen, 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.

File Description	Documents
Upload relevant supporting document	No File Uploaded

6.5.2 - Institution has adopted the following for Quality assurance Academic Administrative Audit (AAA) and follow up action taken Confernces, Seminars, Workshops on quality conducted Collaborative quality initiatives with other institution(s) Orientation programme on quality issues for teachers and studens Participation in NIRF Any other quality audit recognized by state, national or international agencies (ISO Certification, NBA)	A. Any 5 or all of the above

File Description	Documents
Upload the data template	**View File**
Upload relevant supporting documnent	**View File**

6.5.3 - Incremental improvements made for the preceding during the year with regard to quality (in case of first cycle) Post accreditation quality initiatives(second and subsequent cycles)

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 facultymembers" 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

File Description	Documents
Upload relevant supporting document	No File Uploaded

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 year

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.

Councelling

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 Gymansium 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	Documents
Upload relevant supporting document	**View File**
Annual gender sensitization action plan(s)	**Nil**
Specific facilities provided for women in terms of: a. Safety and security b. Counseling c. Common rooms d. Daycare Centre e. Any other relevant information	**Nil**

7.1.2 - The Institution has facilities for alternate sources of energy and energy conservation Solar energy Biogas plant Wheeling to the Grid Sensor-based energy conservation Use of LED bulbs/ power-efficient equipment	**A. Any 4 or All of the above**

File Description	Documents
Upload relevant supporting document	**View File**

7.1.3 - Describe the facilities in the Institution for the management of the following types of degradable and non-degradable waste (within 200 words) Solid waste management Liquid waste management Biomedical waste management E-waste management Waste recycling system Hazardous chemicals and radioactive waste management

1. Solid Waste Management

a) Bio waste is managed by converting them into vermicompost which is used to support the vegetable gardens on the campus.

b) Biogas plants are installed in the hostels to handle food waste through the Integrated Rural Technology Centre (IRTC). It is also installed in KMSME.

c) 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.

d) Students are also encouraged to maximise the reuse of plastic wares like micropipette tips, eppendorf tubes, falcon tubes, etc.

e) For managing solid waste (paper waste and other disposable waste) some Departments (e.g. KMSME) have a fuel-free solid

waste incinerator.

f) 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	Documents
Upload relevant supporting document	**View File**

7.1.4 - Water conservation facilities available in the Institution: Rain water harvesting Bore well /Open well recharge Construction of tanks and bunds Waste water recycling Maintenance of water bodies and distribution system in the campus	**A. Any 4 or all of the above**

File Description	Documents
Upload relevant supporting document	**View File**

7.1.5 - Green campus initiatives include

7.1.5.1 - The institutional initiatives for greening the campus are as follows: 1. **Restricted entry of automobiles** 2. **Use of bicycles/ Battery-powered vehicles** 3. **Pedestrian-friendly pathways** 4. **Ban on use of plastic** 5. **Landscaping**	**A. Any 4 or All of the above**

File Description	Documents
Upload relevant supporting document	**View File**

7.1.6 - Quality audits on environment and energy are regularly undertaken by the institution

7.1.6.1 - The institution's initiatives to preserve and improve the environment and harness energy are confirmed through the following: 1. **Green audit** 2. **Energy audit**	**A. Any 4 or all of the above**

3. **Environment audit**
4. **Clean and green campus recognitions/awards**
5. **Beyond the campus environmental promotional activities**

File Description	Documents
Upload relevant supporting document	**View File**

7.1.7 - The Institution has a disabled-friendly and barrier-free environment Ramps/lifts for easy access to classrooms and centres. Disabled-friendly washrooms Signage including tactile path lights, display boards and signposts Assistive technology and facilities for persons with disabilities: accessible website, screen-reading software,mechanized equipment, etc. Provision for enquiry and information: Human assistance, reader, scribe, soft copies of reading materials, screen reading, etc.	**A. Any 4 or all of the above**

File Description	Documents
Upload relevant supporting document	**View File**

7.1.8 - Describe the Institutional efforts/initiatives in providing an inclusive environment i.e. tolerance and harmony towards cultural, regional, linguistic, communal, socio-economic and other diversities (within a maximum of 200 words)

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	Documents
Upload relevant supporting document	**View File**

7.1.9 - Sensitization of students and employees of the institution to constitutional obligations: values, rights, duties and responsibilities of citizens:

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

File Description	Documents
Upload relevant supporting document	**View File**

7.1.11 - Institution celebrates / organizes national and international commemorative days, events and festivals

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 rgular 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	Documents
Upload relevant supporting document	**View File**

7.2 - Best Practices

7.2.1 - Describe one best practice successfully implemented by the Institution as per NAAC format provided in the Manual

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 conductive 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 pursing their academics on the campus.

- **Entrepreneurship Development Clubs at department level conducts programmes for students for instilling the passion for pursing 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 20for 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.

7.3 - Institutional Distinctiveness

7.3.1 - Highlight the performance of the institution in an area distinct to its priority and thrust (within a maximum of 200 words)

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.

7.3.2 - Plan of action for the next academic year

1. **More innovative and interdisciplinary programmes are to be introduced in tune with the National Education Policy**
2. **Strengthening of interdisciplinary research with the effective utilization of resources aquired through various group projects**
3. **Establishing more collaborative academic and research activities with foreign instituions**
4. **Activities of Placement Cell are to be strengthened so that more students get placement oppertunities**
5. **Encouraging students to involve in start-up activities through TBIs of CUSATECH Foundation and CITTIC (Centre for Innovation and Industry Collaboration)**
6. **Green campus activities will be strengthened through the newly esablished Green Inititaives Cell.**