

Cochin University of Science and Technology



Kochi, Kerala-682022

Annual Quality Assurance Report (AQAR)

2008-09

of

**Internal Quality Assurance Cell
(IQAC)**

Submitted to
The National Assessment and
Accreditation Council
Bangalore

Annual Quality Assurance Report (AQAR) of the IQAC

Name of the Institution : COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
Year of Report : 2008-09

SECTION- A

Plan of action chalked out by the University in the beginning of the year towards quality enhancement

The detailed plans of action of the University for the year 2008-09 are:

- a) To start two new programmes: M.Tech in Marine Biotechnology and M.Phil in Fisheries Science
- b) To Complete construction of the unfinished Science Seminar Complex
- c) University PDF (Post Doctoral Fellowship) to be raised from Rs.5000/- to Rs.10000/- per month (7 nos)
- d) Implementation of a Group Accident Insurance scheme for the entire University student community
- e) Construct a Gymnasium for ladies
- f) Special facilities for visiting women and girl participants in the Centre for Science in Society (C-SIS) which include women rest room, lunchroom, additional ladies toilet, establishing an “Equipment for Housewives Science and Technology Centre” and a Women’s “Multifarious Activity Centre”
- g) To institute two “Best Teacher” awards of Rs.1 lakh each.

Section B

Details in respect of the following

1. Activities reflecting the goals and objectives of the institution

The University is geared to achieve its specific goals and objectives through

- ⊙ Skilled Manpower development in fields of thrust area(s)
- ⊙ Research in emerging areas in Applied Sciences and Technology
- ⊙ Promote Industry – Institution interactions
- ⊙ Promote Science in young minds through Extension activities

- ⌚ Co-operation with national Institutes while foster international collaborations and
- ⌚ Initiate exchange programmes

The University by conduct of UG and PG courses in Applied Sciences, Humanities, Management and Technology and Research programmes in the thrust areas contemplates to achieve its objectives, mission and goals. This University is always thriving to accomplish excellence in Science and Technology by adopting a progressive style of functioning.

2. New academic programmes initiated (UG and PG)

- a) M.Tech Marine Biotechnology
- b) M.Phil Fisheries Science

3. Innovations in curricular design and transaction

Some of the Departments/Schools redesigned the individual courses or revised the existing syllabus using the flexibility of the Credit and Semester System

4. Inter-disciplinary programmes started:

- ⌚ M.Tech Marine Biotechnology

5. Examination reforms implemented

- ⌚ The University started issuing examination hall tickets online.
- ⌚ It is also planning to implement a new examination manual and the works related to this has been started.

6. Candidates qualified: NET/SLET/GATE etc.

NET: 39

Other Civil Services (IPS, ISS, IES): 3

7. Initiative towards faculty development programme

- ⌚ A three day training programme on “Compliance with food safety standards in Foreign Markets for Seafood” has been conducted by School of Industrial Fisheries in association with Marine Products Export Development Authority

(MPEDA) under assistance from United Nations Conference on Trade and Development (UNCTAD)

- ⌚ User Awareness Programme on Access to E-resources under the UGC-INFONET Digital Library Consortium, jointly organized by the INFLIBNET and University library

8. Total number of seminars/workshops conducted

Seminars/ workshops/symposia	26
Research development programmes	9
Invited/endowment lectures	10
Any other (Open House, Day Celebrations)	5
TOTAL	50

9. Research projects a) Newly Implemented; b) Completed

- a) Newly Implemented : 39
- b) Completed: 46

10. Patents generated, if any

- a) Dr. P. Mohanan & Ms. Sreedevi.K. Menon of Dept of Electronics has got a patent for Development of Cylindrical Resonator Antenna.
- b) Dr. Poulouse Jacob (Professor, Dept of Computer Science) has got a Patent with Patent No. 1485/CHE/2008, dated June 18th, 2008

11. New collaborative research programmes

Many departments have started collaborative research programmes with agencies in and outside India and sister departments within the University. Some of them are,

- ⌚ School of Industrial Fisheries have started collaborative research with University De Salento, Italy, Swan Sea University, U.K., National Institute of Oceanography, India
- ⌚ International School of Photonics is doing combined research programme on Bio-Photonics with School of Marine Sciences
- ⌚ Dept of Polymer Science and Rubber Technology has done collaborative research work with the Dept. of Electronics which is resulted in the

development of conducting polymers and conducting composites suitable for microwave shielding applications and beam steering applications.

- Dept of Statistics has started collaboration with Prof. Anup Dewanji, Indian Statistical Institute, Kolkata

Department of Atmospheric Sciences has commenced efforts to hold scientific collaboration programmes with Institut fur Meteorologie, Frei Universitat at Berlin, Germany on Stratosphere Troposphere Interactions, Service d' Aeronomie, CNRS, France on Stratospheric Processes and their influence in Climate, Laboratory for Atmospheric Dynamics, Paris on Modelling of Intraseasonal Variability of Monsoon and Imperial College, U.K on Atmospheric Ozone and Climate Variability

12. Research grants received from various agencies

Agency	Amount received in Rs.
State Government	150,000
UGC	18,044,368
Other GOI Sources	86,567,140
Others	6,115,953
MHO	0
Total	110,877,461

Other GOI Sources include institutions like MoES, MHRD, NSC, DST, DOE, DAE, DOD, CSIR, ICAR,

DRDO, IUAC, ICMR, ICSSR, Dept of Space, Coir Board (B), Central Water Commission, DBT, MEF, AICTE, MPEDA, ISRO and IUC-DAEF

Others include STED, IRELTDC, NZAID, European Commission and EMRE, UK

13. Details of research scholars

No of Full Time Research Scholars: 392

No of Part Time Research Scholars: 372

14. Citation index of faculty members and impact factor

15. Honors/Awards to the faculty: National and International

No	Name of the Faculty member	Department/ School	Nature of Award and Agency
1	Dr. K. Mohankumar	Atmospheric Sciences	International ASLI's Choice award for the best book on Meteorology climatology / Atmospheric Sciences

2	Dr. B. Madhusoodana Kurup	School of Industrial Fisheries	European Marie Curie Fellowship under FP7 programme Awarded AquAgriS Visiting Scientistship by the European Commission.
3	Dr.A.Aravindakshan	Hindi	Literary Award, Acharya Anad Rishi Trust, Hyderabad
4	Dr.S.Bijoy Nandan	Marine Biology, Microbiology and Biochemistry	RECOGNITION AWARD for the contributions in the area of zoology/ life science/ environmental science by Zoological Society of India
5	Dr.S.Bijoy Nandan	Marine Biology, Microbiology and Biochemistry	United Nations Fellowship to participate and present a research paper in the 3rd Bilateral Seminar Italy-Japan
6	Dr.Aneykutty Joseph	Marine Biology, Microbiology and Biochemistry	Chinese Government Fellowship for participating the International Training on "Integrated Fish Farming" held at Wuxi City, P.R of China
7	Dr. A.N.Balchand	Physical Oceanography	Best poster award-Kerala Science Congress
8	Dr. Thomas Kurian	Polymer Science & Rubber Technology	"Best Technical Paper Award – 2008" at the 20th Conference of Indian Rubber manufacturers Research Associations (affiliated to the Ministry of Commerce and Industry, Government of India)

16. Internal resources generated

The total amount generated internally during 2009-10 is **Rs. 17.87 Crores**

17. Details of departments getting assistance/recognition under SAP, COSIST (ASSIST)/ DST, FIST, and other programmes

I. Schools/ Departments getting assistance under SAP are

1- CENTRE OF ADVANCED STUDY (CAS)

- i. Dept of Applied Chemistry (2004- 2009)
- ii. Dept of Statistics (2004- 2009)

2- DEPARTMENT OF SPECIAL ASSISTANCE (DSA)

- i. School of Marine Sciences (2007-2012)

- ii. Dept of Instrumentation (2007-2012)
- iii. Dept of Atmospheric Sciences (2007-2012)
- iv. Dept of Hindi (2007-2012)

3- DEPARTMENTAL RESEARCH SUPPORT (DRS)

- v. Dept of Electronics (2007-2012)

II. Schools/ Departments getting assistance under DST-FIST are

- i. Dept of Applied Chemistry (2009-2013- Level-II)
- ii. Dept of Electronics (2005-2009- Level-I)
- iii. Dept of Biotechnology (2009-2013- Level-II)

18. Community services

- ⌚ CIRM conducted Training programme for Industrial Extension Officers, in association with Kerala Institute for Entrepreneurship Development, Kalamassery
- ⌚ A series of instructional programmes for school students named Magic of Chemistry had been conducted in the Dept of Applied Chemistry. A total of 200 high school students from Government and Aided schools of the state of Kerala participated in the programme
- ⌚ The Centre for Science in Society of the University (C-SiS) conducts the following programmes during 2008-09
 - a) **One Day Attachment Programme (ODAP)** for 15239 school children, 185 schools and 984 teachers
 - b) **Science Talent Development Programme (STDP)** for 383 students

19. Teachers and officers newly recruited

Teaching staff recruited during 2009-10: **2**

Non-teaching staff recruited during 2009-10: **4**

20. Teaching – Non-teaching staff ratio

285: 751

21.Improvements in the library services

- ⌚ Subscription of Manupatra Online Database, Emerald Extra 175, Prowess Database started

- ⌚ Institutional Repository project using DSpace named Dyuthi is started for digitalization of thesis and research papers of CUSAT Community
- ⌚ Introduced Online recommendation of books and Ask a librarian Services.

22. New books/journals subscribed and their value

Books	Amount	Journals			Amount
		Online Data Base	Foreign	Indian	
2819	50 lakhs	5	130	46	60 lakhs

23. Courses in which student assessment of teachers is introduced and the action taken on student feedback :

Course assessment was largely welcomed by students and teachers and helps the teachers to reorient in imparting classes to students in a more effective manner.

24. Feedback from stakeholders

This aspect is reflected in curriculum modification and employability

25. Unit cost of education – Rs.1,10,911/-

26. Computerization of administration and the process of admissions and examination results, issue of certificates

- ⌚ The whole admission processes such as submission of application, issuing of hall tickets, option registration etc. are continuing to be computerized.
- ⌚ Tabulation work, publication of results and all processes involved in the preparation of mark lists and degree certificates is continuing to be computerized.
- ⌚ Some of the administration process is fully computerized and the remaining is partially.

27. Increase in the infrastructural facilities

- ⌚ Provided special facilities for visiting women and girl participants in the Centre for Science in Society (C-SIS) which include women rest room, lunchroom, additional ladies toilet, establishing an “Equipment for Housewives Science and Technology Centre” and a Women’s “Multifarious Activity Centre”
- ⌚ Progressing the work of expansion of Health club and Gymnasium for women in the campus

28. Technology upgradation

During 2008-09 the same ISP, M/S. BSNL, Govt. of India Enterprises, continued and the bandwidth was upgraded to 14 mbps.

29. Computer and internet access and training to teachers, non-teaching staff and students

- ⌚ CIRM Conducts training programme on building digital libraries using D-space- an open source software in association with School of Engineering Library
- ⌚ Training programme for professional assistants conducted in association with the University library

30. Financial aid to students

- ⌚ University is providing 120 numbers of Research Scholarships at a rate of Rs. 5000/- per month for the junior research fellows and Rs. 6000/- per month for the senior research fellows
- ⌚ M Phil Scholarship is Rs. 600/- per month for 36 scholars
- ⌚ University PDF - enhanced to Rs 10,000/- from Rs 5000/- during 2008-09 with an annual contingency grant of Rs 20000/- (7 numbers)
- ⌚ University is also providing Merit Scholarship for 39 scholars at a rate of Rs. 1200/- p.a.

31. Activities and support from the Alumni Association

All departments have individual Alumni Association; Alumni regularly conduct seminars, workshops, quiz competition to college/school students and training programmes, in addition to the annual get together. Alumni and parent departments often fund infrastructural developments and offering for placement to students.

32. Activities and support from the Parent-Teacher Association

Parent-Teacher Association meetings generate worthwhile suggestions and feedback from parents to be implemented towards betterment of their wards. Parents are made aware of the examination results at the time of PTA meetings. The University, in association with the PTA of UG departments has introduced a provision in the CUSAT web site- **Students Academic Information System** [<http://wais.cusat.ac.in/index.php>]- to publish all the results of students for the information of all, including parents. If the performance of the PG student is

consistently poor, the concerned department will inform the matter to the parents.

33. Health services

The University Health Centre provides health related support to the University Community.

34. Performance in sports activities

Sports & Games activities in the University Campus were very much active and alive during the year. A large number of students actively participated in many of the major and minor games. The details are given below:

⌚ **Cusat Inter-Collegiate Athletic Meet and Games 2008-09**

The CUSAT Inter-collegiate Athletic Meet 2008-'09 was held from 27th to 28th February 2009. The items included for the Athletic Meet were 50m, 100m, 200m, 400m, 800m, 1500m, 5000 Road race, Long Jump, High Jump, Triple Jump, Pole Vault, Shot-put, Javelin, Discus, 4x100 relay and 4x400 relay. The participants were from almost all the recognised colleges under CUSAT. The overall championship in the Athletic Meet went to School of Engineering, CUSAT

⌚ **South Zone Inter University Badminton:** Five students participated at Kuvempu University from 25th to 28th October 2008.

⌚ **All India Inter University Athletic Meet:** Four students participated in the All India Inter University Athletic Meet 2008-09 organized by M.G.University at Ernakulam Maharaja's Ground from 20th to 24th December 2008.

⌚ **Best Physique:** Anoop Raj.S.R. (Category 65 Kg) of M.G.College, Trivandrum won Bronze in All India Inter University Boxing competition held at Andhar University, Visakapattanam, on 24th February 2009.

35. Incentives to outstanding sportspersons

⌚ Duty leave facility for sports coaching/participation,

- ⌚ TA/DA for participation in tournaments,
- ⌚ Uniforms for participating in tournaments,
- ⌚ Recognition certificates,
- ⌚ Equal opportunities to deserving students,
- ⌚ Leadership roles for active sportsmen,

36. Student achievements and awards

Department	Name of the Student	Details of honor / awards
CELOS	Mr. Rajesh Kumar	National Research Prize KVPY Award during the First National Student Research Convention ANVESHAN-2008
CELOS	Mr. Rajesh Kumar	Received the international research fellowship sponsored by the Society of Photonics Industry and Education
CELOS	Mr. Rajesh Kumar	National Research Prize during the First National Student Research Convention ANVESHAN-2008 held at University of Pune during 17th May-19th May organized by Association of Indian Universities (AIU), New Delhi.
ISP	Sreekanth J Varma	Research Fellowship in Science for Meritorious Students under the scheme "Centre with Potential of Excellence"
ISP	Geetha P	Research Fellowship in Science for Meritorious Students under the scheme "Centre with Potential of Excellence"
ISP	Sithara S.P	Research Fellowship in Science for Meritorious Students under the scheme "Centre with Potential of Excellence"
Applied Chemistry	Ms. Bolie Therattil	"Hindustan Platinum Award" for the Best Poster Presentation during National Catalysis Workshop conducted by The Catalysis Society of India
Applied Chemistry	Ms. Bolie Therattil	Best paper awards for the paper presented in Indian Analytical Science

		Congress
Applied Chemistry	Sindhu Issac	Best paper awards for the paper presented in Indian Analytical Science Congress
Electronics	Mr. Jijo Augustine	URSI (International Union for Radio Science) 'Young Scientists Award'
Electronics	Ms. Bybi. P.C.	URSI (International Union for Radio Science) 'Young Scientists Award'

37. Activities of the Guidance and Counseling unit

Details of Activities done by the University Employment Information & Guidance Bureau

Particulars	
Individual Guidance	117
Visitors to Career Information Room	2339
Group Discussion	11
Participants in Group Discussion	83
Career Talk by Deputy Chief	18
Participants in Career Talk	1163
No. of Bulletin Published	12
No. of Coaching Class	4
Participants in the Coaching Class	107
Individual Information	1754
Career Seminar	1
Participants in Career Seminar	11

Details of Coaching Classes done by the University Employment Information & Guidance Bureau

No	Name of Coaching Class	Period	No. of Participants			Total
			Gen	SC/ST	P.H	
1	CC.01/08 UGC-CSIR/NET Paper I (Science)	07.05.08 to 22.05.08	18	1	2	21

2	CC.02/08	Bank Clerical Examination	23.06.08 to 11.07.08	24	3	1	28
3	CC.03/08	UGC-CSIR Paper I (Life Science)	16.10.08 to 06.11.08	24	3	-	27
4	CC.04/08	UGC-NET Humanities	21.11.08 to 06.12.08	22	9	-	31
Total No of Coaching Classes: 4							
No. Of Participants : <u>Gen.</u> <u>SC/ST</u> <u>P.H.</u> <u>Total</u>							
88 16 3 107							

38. Placement services provided to students

Details of Placement service provided to students from training and placement cell:

No. of companies visited: 36

No. of job offers: 625

No. of students placed: 461

The maximum annual salary offered to students is Rs. 8 lakhs, and the minimum offer is Rs. 3 lakhs.

The individual departments also conduct campus recruitment programmes in addition to that of placement Cell of the University.

39. Development programmes for non-teaching staff

- a) A one week training programme on Continuing education and updating the knowledge of the library professionals was conducted by the Centre for Adult Continuing Education and Extension (CACEE)
- b) Training programme on D-Space digital repository system conducted in association with University Library by Centre for Resource Management (CIRM)

40. Good practices of the institution

- ⌚ The University follows credit system for all PG programmes. Students an opportunity to enhance and improve his/her knowledge on the basis of elective(s).
- ⌚ The university follows 100% internal assessment for higher post graduate programmes. Moreover, the results can be declared without any delay.
- ⌚ Strict but required transparency in evaluation process is ensured.
- ⌚ A well-planned calendar of events at the beginning of the academic year is drawn up and adherence is maintained.
- ⌚ The University conducts an all India level Common Admission Test.

- ⌚ The University has academic links and exchange programmes with several Institutions/Universities in almost all Continents of the globe.

41. Linkages developed with National/ International, academic/research bodies

The University departments have developed linkages with many national and international agencies through collaborative research programmes, research projects and consultancy services. Also have linkages with many industries by sending students for their course project.

Some of them are,

- ⌚ The School of Industrial Fisheries has started collaborative research with Swansea University, U.K.
- ⌚ International School of Photonics aims to conduct an Indo –UK Joint workshop
- ⌚ Dept of Statistics has established linkages Indian Statistical Institute, Kolkata

42. Action Taken Report on the AQAR of the previous year:

Considered positively at the budget meeting

43. Any other relevant information the institution wishes to add.

- ⌚ The Indo-UK Education & Research Initiative (UKIERI) has selected CUSAT for joint research project in developing high frequency radar in the area of modern telecommunication.
- ⌚ The University hosted the Second National Conference on Free & Open source software (FOSS) during November 2008, in which about 850 delegates from various parts of the country participated
- ⌚ During 2008-09, the university has awarded 89 PhD Degrees.

SECTION C

Outcomes achieved by the end of the year

- ⌚ Started two new programmes: M.Tech in Marine Biotechnology and M.Phil in Fisheries Science

- ⌚ The Department of Physics received a financial assistance of Rs.3.29 crores from DST for the conduct of research on Nano structured materials & its applications
- ⌚ University received Rs.2.00 crores from the Kerala State Govt. towards ACA (Additional Central Assistance) mainly for construction of a Students Amenity Centre.
- ⌚ University received an amount of Rs.1.00 crore from the UGC towards financial assistance for Infrastructure Augmentation for the various teaching departments.
- ⌚ University also received from the UGC an amount of Rs.57.80 lakhs towards thr 4th installment of General development Assistance (XIth plan)
- ⌚ Arranged special facilities for visiting women and girl participants in the Centre for Science in Society (C-SIS) which include women rest room, lunchroom, additional ladies toilet, also established an “Equipment for Housewives Science and Technology Centre” and a “Women’s Multifarious Activity Centre”
- ⌚ Instituted “Best Teacher” awards of Rs.1 lakh.
- ⌚ University PDF has been enhanced to Rs.10,000/- per month along with an annual contingency grant of Rs.20,000/-

SECTION- D

Plans of the University for the next year

The detailed plans of action of the University for the year 2009-10 are:

- ⌚ Establishing a Centre for Nano-Technology
- ⌚ Establishment of a Centre for Advanced Materials
- ⌚ Establishment of a Inter University Centre for Marine Biotechnology
- ⌚ Amount for M.Phil Scholarship to be increased from Rs.600 to Rs.1000
- ⌚ University Research Fellowship to be increased from 120 to 150 numbers
- ⌚ Alumni relations to be strengthened at dept level and an apex body at University level also to be formed for this
- ⌚ An Examination Manual to be released and implemented

- ⌚ Training to be given for faculty members, Examiners and nonteaching staff
- ⌚ To add more space to Examination wing by completing of the vertical extension to the Administrative office
- ⌚ Roofing of the Open air Auditorium for holding programs

Dr.A.N.BALCHAND
Director, IQAC

DR.K.POULOSE JACOB
Chairperson, IQAC
&
Pro-Vice-Chancellor
(i/c of Vice-Chancellor)