

## Action Taken Report on AAA

The Academic & Administrative Audit of the Department of Mathematics University of Calicut was conducted by Professor Raghavan K.N., the Institute of Mathematical Sciences, Chennai. His overall remarks is given below:

*“The facilities and opportunities available are good but the overall quality of mathematics being taught at the PG level in Universities in India is very poor and UoC is unfortunately no exception. It can however make a serious attempt to change this by seeking expert advice (rather than rely on metrics such as number of papers published) and taking advantage of the presence of KSoM (which is regularly visited by eminent scholars and researchers from around the world and now offers a high-quality integrated Masters—PhD programme).”*

It may please be noted that he compared the Universities in India with leading Institutes like TIFR, Institute of Mathematical Sciences, IIT's etc..Each institution has its own limitations. Hence there is no relevance in comparing Universities with leading institutions like institute of Mathematical Sciences. Note that Universities in Kerala strictly follow state government reservation policy in admissions. At present 27.5% of the seats are reserved for socially and economically backward (SEBC) and 22.5% seats for SC/ST categories. The common policy of all universities in Kerala is to frame the syllabus which is digestible to advanced learners as well as slow learners. If we adopt the syllabus of the institutions like institute of Mathematical Sciences or Kerala School of Mathematics, the percentage of pass will be below 20%. Also note that facilities available in University departments and Colleges are not the same. That is, why UGC regulation for colleges and Universities are slightly different. The Department will definitely try to implement the suggestions made by him as far as possible.

His comments and suggestions on each item AAA report and the action taken by the Department is furnished below:

Sl. No	Grade	Auditor's		Action taken by the Department
		Comments	Suggestions for improvement	
I	Programmes Offered	M.Phil can be scrapped. In mathematics, it adds no value. The NEP advises scrapping of M.Phil, if I understand correctly.	M. Phil be scrapped.	CU decided to stop M.Phil Programme from 2022 onwards as per UGC regulation.
1	Relevance, adequacy, innovativeness etc. (3-8)	C	Certificate courses offered by NPTEL should be considered in lieu of courses offered by the	The DC decided to register one course offered by NPTEL/SWAYAM in future. Courses offered by the

  
**Dr. ANIL KUMAR V.**  
 Professor & Head  
 Department of Mathematics  
 University of Calicut  
 Kerala - 673 635

			Department because they are likely to be of a much higher standard.		department are not of lower standard than that offered by NPTEL
2	Demand ratio of courses (33,35,36)	A	Why is the number of men taking up M.Sc. so small? This is a symptom of some serious problem with the programme.		The university has a well-defined regulation for enrolling students. The Department is admitting students strictly based on the regulation. There is no gender discrimination in Kerala and also no restriction for girls to go for higher studies. However detailed studies are needed for finding the reason.
3	Syllabus & curriculum (10,11, 46)	C	Faculty having freedom is good. But how effectively this can be used is the question. Most M.Sc. Level courses in India (in maths especially) are of poor quality. Is the UoC an exception? It should strive to be	Is there emphasis on problem solving? Most students---even those who do well in University Masters programmes--- have no understanding of Mathematics because the courses are of poor quality. Students should be encouraged to take online courses offered elsewhere	For each course there is a tutorial session of one hour duration. This session is mainly for problem solving. The Department encourages the students to take online courses & online classes offered by NPTEL/SWAYAM etc
4	Examination & Results (9, 34, 37)	B	The data in 9, 34, 37 are irrelevant for the quality of the programmes.	Programme should be judged by how many students pass national tests CSIR / NBHM etc. And the placement profile.	The Department agree with him. The Department revised the syllabus in par with CSIR/NBHM etc. Moreover, the department offering classes for NET/JRF/CSIR/NBHM exams and conducts skill development courses for placement.
II					

  
**Dr. ANIL KUMAR V.**  
 Professor & Head  
 Department of Mathematics  
 University of Calicut  
 Kerala - 673 635




1	Faculty Strength (12, 14, 15)	B	Why suddenly 40% of the course are being taught by temporary faculty in 2019-20?		Due to retirement of faculty members. Now the University has posted 2 permanent faculty members in the Department
2	Student teacher ratio (16)	C	8:1 is good for M.Sc. 23:5 for Ph.D. is likely to mean that the quality of the research being done is low		More students are enrolled for Ph.D programme from 2021 onwards
3	Qualification, experience diversity, performance etc. (13, 41, 48)	B	The new hires are a good sign. 50% faculty from own university is not a good sign.		Agree with him. There is no such restriction in UGC regulations. This comment will bring the notice of the authorities of University of Calicut.
4	Participation of faculty in Professional development programmes, Seminars, Workshops etc. (26-27)	B	Good. However, one can just bodily attend several programmes without it having one bit of effect on one's teaching or research		His comments is absolutely right. As per UGC regulation for getting CAS promotion stipulated number of seminars/Workshops are necessary. So faculties compel to attend the programmes without it having one bit of effect on one's teaching or research
III	Research				
1	Thrust area (18)	B	Ok. Now Geometry and Lie Groups can be added.		Added
2	Facilities (21, 22)	A	The library which I have personally visited is maintained in an excellent condition. One of the best in the country. What about programming courses and computing facilities? No mention is made.		A core course viz "Scientific programming using Python 3" is included in the revised syllabus. In future we will include more programming courses.
3	Publications (23)	B	There is too much emphasis on writing papers. The result is that papers are published that have	One should rely on feedback from experts rather than merely on	We are trying to improve the quality of publications. Now faculty members and research scholars are

Dr. ANIL KUMAR V.  
 Professor & Head  
 Department of Mathematics  
 University of Calicut  
 Kerala - 673 009

			absolutely no content.	statistics (especially, count of papers). Only a very small percentage of the papers published in mathematics are of reasonable quality. Most are junk	communicating their research papers in high reputed journals. The problem is that many high reputed journals in mathematics take long time for review process. It may please be noted that duration of a Ph.D programme in the University of Calicut is minimum 3 years and the minimum criteria for submitting the thesis is two published papers in UGC care list. So, many research scholars cannot submit the thesis within the stipulated time. There is a pressure for guides to complete Ph.D work of student on time because of demand ratios of PhD scholars and shortage of faculty. It is also noted that there are many reputed journals in Mathematics publish research articles without any publication charges. Unfortunately these journals are not included in the UGC care list. Again, there are fast publication journals in mathematics in the UGC care list(Scoped indexed) with article processing charges of huge amount.
4	Patents (24)		These are difficult in mathematics.		
5	Consultancy (25)		This again is difficult in mathematics		
6	External Funding (all funds secured by faculty other than	B	I know for a fact that the dept received from NBHM 9 lakhs for the library in jan 2017 and again	Many places get FIST grant. UoC should be able to get such grants.	The DC decided to apply for FIST. Now one of our faculty member awarded SERB MATRICS grant

	normal grants received by the University) (20)		4.9 lakhs in March 2019. Why are these not even mentioned? [Correction: This is mentioned in item 52.] Doesn't the dept get a FIST grant?		(MTR/2021/000373). Faculty members are seriously preparing for external project fund.
IV	Students				
1	Student achievements (state, national, international) ( 31)	C	The success of an M.Sc. Program is reflected in what the students go on to do (whether it is a job or for a PhD). CUSAT students regularly feature in CSIR-UGC and NBHM Doctoral Scholarship selections. Is not UoC aspiring for something similar?		Agree with him. The department is providing coaching to students with the help of faculty members and research scholars for UGC/CSIR/NBHM. One student in 2019-21 batch received INSPIRE Scholarship for Ph.D. Also, 8 students qualified GATE 21 & GATE 22. Moreover, 2 students qualified NET examination.
2	Diversity (male female ratio, from within the state, outside the state and international) (33, 38)	C	As noted elsewhere, the question arises of why males are so few in the M.Sc. programme? There being very few students from outside the state is a reflection on the poor quality of the programme.		The enrolments of males in PG programmes are few not only in University of Calicut but also in all Universities in Kerala. A thorough research is absolutely necessary for finding the reasons. In future we will conduct a survey for analysing the issue. It may be noted that students from outside Kerala are enrolled in PG programme from 2020 onwards.
3	Student Progression (39, 40, 49)	C	Please mention the years in which the distinguished alumni graduated. The list is impressive all right.		
4	Financial support to	A	Good percentage seem to be		

  
**DR. ANIL KUMAR V.**  
 Professor  
 Department of ...  
 University of Calicut  
 Kerala

	Students (45)		getting support.		
V	Support Staff (Strength, Adequacy etc.)				
VI	Teaching- learning & Evaluation (47)	B			
VII	Feedback Mechanism	B	Data not provided		
VIII	Activities of the Department (conduct of seminar, workshops, student enrichment programmes, extension activities and other beyond scholarly activities) (32, 50, 55)	B	There seem to be several opportunities for students to be exposed to ideas. The question however is this: how many students actively participate and take advantage of these? Just physically attending is not done.		At present there is no mechanism for finding how many students actively participate and take advantage.
IX	Infrastructural facilities of the Department (52)	B	No mention is made of computing facilities. Are students exposed to programming at all? Programming is an essential part of mathematical training.		The Department has a Computer Lab. Computing facilities are to be enhanced. In the revised syllabus one programming language included.
X	Uniqueness of the Department & Innovative practices (53-55)		Indeed the dept seems to have many seminars and talks. However, just having the students physically attending these is not good enough. They must actively participate. Otherwise what is the point?		Agree with him
XI	SWOC (56)				Agree with him
I	Strength	B	Good. About research output, one should worry about the content		

Dr. A. K. J. V.  
Dr. A. K. J. V.  
Dr. A. K. J. V.

			and quality of the papers, not just the number.		
1	Weakness				
2	Opportunity				
3	Challenges				
XII	Future plans ( 57)		Before starting a integrated B.Sc.-- M.Sc. Program, do the necessary market survey. CUSAT already has such a program and does the state have the capacity for such another program?		It is understood that M.Sc(Applied Mathematics with specialization in computing) course has more job opportunities and hence planning to commence the same.



*Anil Kumar V.*

Dr. ANIL KUMAR V.  
 Professor & Head  
 Department of Mathematics  
 University of Calicut  
 Kerala - 673 635