

**Report
of the
Expert Committee
on
introduction of
new programmes for the
Affiliated Colleges**

(Constituted vide GO (Rt) No. 758/2020/HEDN dated 10/06/2020)

Committee

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Introduction

Any thinking about undergraduate programmes in Kerala would invoke the refrain of job-oriented programmes, market friendliness, employability and industry tie up, among others. There is no doubt about the fact that we need to address these concerns. However, it is true that not all disciplines and specializations would follow the same route.

Therefore, it is to be stated that market adaptability or tie up with industries may not be the primary concern of many social science disciplines. However, we could identify exceptions in the case of Economics and different specializations within it. Certain variants of sociology, anthropology, psychology among others might compete for a space in this particular scheme of things. Economics offers a wide variety of careers for economists both in the Government and in the Corporate sector. A good postgraduate in economics could be absorbed in a range of careers in India as well as abroad. Sociologists and Anthropologists work in the areas of development along with economists. Similarly, psychologists too work in different specialised areas and institutions. The current situation demands imaginatively reorganising both the Undergraduate and Postgraduate programmes in Social Sciences thinking critically about the nature of the disciplines and the intellectual and practical training they offer.

We wish to point out the very different intellectual persuasion that sustains a discipline like history that engages with the past of human societies. Like in other social sciences, critical thinking would be central to history. The project of historians would be to analyse

the long-term trends of transformation of human societies, social and political structures, economies and systems of thought.

This in fact depends on the critical orientation entailed in the practice of historians such as evidence based rational arguments, effective communication skills both written and oral, and a mindset to search for evidences. These qualities are in many ways common to all social sciences and other streams of knowledge. Therefore, one could say that if an undergraduate student is properly trained in history she could land up in good careers.

When one thinks about the new academic programmes in Social Sciences, we also need to identify the current problems that students and teachers face in their academic pursuits. In our interaction with teachers in different social science disciplines, one major issue that they had identified was the inadequacy of the curriculum followed in many universities in Kerala to understand the most recent developments in the discipline. This is true for most social science disciplines. It was specifically pointed out that at the plus two level most social science courses follow NCERT text books that are prepared by reputed scholars. In the case of some disciplines at the Undergraduate level in Kerala we see the woeful practice of repeating what is offered at the plus two level. Therefore, a substantial part of the undergraduate years ends up adding nothing new. This has been identified as a problem in Economics, History, and Sociology among others.

In fact, we need discuss this problem in the context of each of the disciplines. The way to overcome this is to sync the research of teachers with their teaching. However, the current

situation in Kerala where undergraduate teaching takes place in colleges there is an absolute disconnect between research and teaching. We think this is the main reason why the teachers are not able to offer new courses that should ideally be based on their research. In addition to this, often times students are not made familiar with research-based books and articles as course materials. Instead of that both teachers and students use cheap market guides as study materials. The dependence on question banks and other outmoded practices of examination and evaluation encourages students and teachers to resort to practices that defeat the very aim of higher education itself.

It is in this larger context that specific suggestions regarding new courses are to be discussed. Our consultations with teachers and researchers in Economics, for example, brought out the possibility of introducing courses with econometrics/mathematics as a significant part of the undergraduate programme in economics. Alongside this, they feel that there should be courses in sociology, anthropology and history. This will make an undergraduate programme in economics on a par with the programmes in other institutions in India or abroad. Colleagues in Economics specifically referred to institutions in India such as Delhi School of Economics, ISI and JNU, CDS, IGIDR where they provide different kind of programmes at the Master's level. They pointed out that students from institutions in Kerala find it difficult to secure admission in such institutions.

In addition to this, it was also pointed out that at the plus two level Mathematics is taught along with economics only in a very few institutions. Therefore, we may have to continue with undergraduate programmes in economics with much less mathematics components as

it is happening now. It has been pointed out that courses in Economics with Econometrics and other social science components prepare students for a different career path including better research.

History, as mentioned earlier, should prepare students for careers where critical analysis and explanation based on facts and sources of information are important. However, what is needed is to train students in critical thinking and reading sources and synthesizing data and interpreting them. This should reorient the attitudes of students doing undergraduate programme in History. In the current system students hardly get an idea of the manner in which historians practice their craft. Undergraduate programme in History has to be interdisciplinary with exposure to the methods and practices of sociology, economics and archaeology/material culture studies. That would make history much more promising including in terms of careers. We might also think about emerging areas such as Global History which is not a rehash of the earlier World History. In the current situation the analytical skills of students are not emphasized.

In the case of disciplines such as sociology and anthropology we need to move in a critical manner trying to incorporate the changes in the disciplines in the last few decades that witnessed new research questions emerging. Globalization and neo liberal capitalism and digital economies are the defining aspects of contemporary economic and social life. I am not forgetting the fact that there are large chunks of human activities outside these specific areas. Therefore, academic programmes in social sciences need to address these issues. Another significant factor is the rise of global cultures and the need to study them. To my

mind social sciences have to engage with these questions. Given the fact that there are interdisciplinary areas such as cultural studies, we can think of introducing courses dealing with such issues in most social sciences.

Alongside this, we think one area that needs to be addressed seriously is the reading and writing skills of students. At the undergraduate level itself they should be trained in critical reading of texts. In the current system they hardly engage with authors/scholars. Likewise, we need to properly train them in academic writing. We suggest institutional facilities for supporting students in academic writing. In other words, the idea is to train students in research-based writing. This will ensure that students will develop their critical faculties and evolve as properly trained individuals.

We need to change the current learning practices where students are mere recipients of knowledge and teachers act as mere providers. In the new programmes, both teachers and students are to be co-learners. Some courses at the undergraduate level could be framed as seminar courses that will be adopted considering the requirements of the undergraduate programmes. In the current context, cutting edge economics Undergraduate course is essential for shaping economics education in Kerala. While Kerala has the required resources for tailoring a globally competitive and rigorous UG programme, the majority of the current Economics UG programmes in Kerala lacks rigorous economics as offered in places like Delhi University, Kolkata, Mumbai, Chennai etc. It is essential to develop an internationally competitive UG course in Economics in Kerala, first to sustain Kerala's brilliant minds who flock to other states for doing a rigorous Economics UG course, and

secondly to make Kerala a hub of Economics discipline by attracting talents to Kerala. It is also imperative to develop a job oriented course in this current global scene where data analytics grounded with economic reasoning offers one of most prospective jobs around the world. Moreover rigorous research orientation is also essential to be developed at the undergraduate level where students have an option to stick on to academic research field or employment in other sectors.

Given the huge demand for Economics degrees from the students and corporate sector's demand for experts, economic graduates with specialisation in data analytics and mathematics, we propose to have an honours degree in economics in Kerala which would increase the employment opportunities of graduates too. In most institutions in India and abroad, Economics comes along with a substantial content of Mathematics and computational skills. In addition to this they also provide opportunities to develop the soft skills of the students trained in Economics. More importantly they also get training in Big data analysis.

Terms of Reference

To submit a report to the Government on the new programmes to be introduced in the colleges affiliated to the Universities in the State.

Context

This report has been prepared for suggesting new programmes in affiliated colleges following a directive from the Government of Kerala vide GO (Rt) No. 758/2020/HEDN dated 10/06/2020. Following the announcement in the State Budget for the year 2020-21, the Committee was assigned to suggest some Under Graduate and Post Graduate programmes for the affiliated colleges in the State, and of preparing a report for submission to the Government. The two issues of significant interest that currently loom over the higher education scenario in India are the phenomenal numbers of high school graduates produced by the country annually and the relevance of what we provide to them in terms of higher education. The enrolment numbers have been steadily rising. There are no formal records or data that can tell us what happens to the students who graduate from any of the programmes presently being offered in the affiliated colleges. The way it is run, the sole purpose seems to be to seemingly keep the teachers in employment. What remains unasked is the question of the need and relevance of teaching various subjects to such large numbers of students. Hence, there is a strong need to introduce new programmes in the affiliated colleges that would bring in a systematic change in favour of the students. When we offer an interdisciplinary undergraduate programme in Economics, the idea is that the students would get a good grasp of the economic phenomena in their proper context. In other words, there should be equal emphasis on the mathematical part as well as social theory components. They will also acquire Basic economic theory, analytical and logical reasoning, and the conceptual

language and the philosophy of the subject with adequate scientific rigour. These are necessary parts of scientific thinking which are fundamental to knowledge production.

The new courses should not be a stopgap arrangement. It is not like introducing a course to the already existing ones. Instead it is fundamentally a different academic project of introducing a new programme that would demand specialist teachers and a good library.

Findings

1. Affiliated Colleges in the State are now offering a vast number of conventional programmes and a considerable number of new generation programmes.
2. For the past ten years, there have been huge inflow to arts, science and commerce colleges.
3. Though, programmes with specialization in the emerging areas and new generation programmes have been introduced, such programmes could not sustain either due to lack of vertical movement or due to lack of placement opportunities.
4. The three year degree programmes which lack the research component are rarely recognized by the foreign Universities and therefore, students find it difficult to secure admission for higher degrees in the foreign universities.
5. Information Technology programmes like BCA, B Sc Computer Science/IT etc and B Sc Mathematics were earlier preferred by the students who could not secure admission to the engineering programmes. Since the engineering programmes are not being opted by many during these days, the applicants to these programmes have also come down.
6. New generation programmes like B Sc Microbiology, Biotechnology, Biochemistry, Biostatistics, Bioinformatics, Hotel Management, BTS, BBA, BBM etc are mostly offered in the self financing sector. Since the job opportunities for these programmes as projected initially have not been the same when it comes to reality, the demand came down to near zero in many colleges and some courses have been ceased for

want of applicants. The failure of the proliferation of specialized courses like those in biotechnology areas because of the predicted opportunities did not pan out is a case in point to be kept in mind when considering new courses.

7. B Voc programmes offered by the UGC also have a cold response from the students as the employability projected for these skill development programmes have not met the expectations. The vertical movement for these programmes also have been limited.
8. The most important factor for the failure of specialized programmes have been lack of opportunities and least scope of vertical movement for higher studies. Conventional programmes have scope for vertical movement and more options for higher studies they seem to be advantageous than the new generation programmes.
9. There have been a question of equivalency of new generation programmes as far as the existing academic scenario of Universities are concerned.
10. The colleges offer class room routine academics only with less focus on research and skill development. Placement cells have been either nonperforming or substandard.
11. The popularity of commerce and economics courses clearly indicate that a steady job after the degree is the prime focus of the students typically enrolling in these courses.
12. While introducing new programmes, the role of colleges and universities in the new millennium, and emerging scientific research on how people learn are factors that need attention.

13. As higher education systems grow and diversify, society is increasingly concerned about the quality of programmes, public assessments and international rankings of higher education institutions.
14. GER in higher education in Kerala is 37% which is far behind the neighboring Tamil Nadu for which the figure is 48.6%.
15. As envisaged by Kerala State Higher Education Council "In Kerala, the target of increasing the gross enrolment ratio (GER) in higher education to 48 per cent by 2030 can be accomplished by a collective approach of all stakeholders of the HE sector in Kerala".
16. Fewer Institutions of Higher education within the reach, lack of variety of courses which offer higher employability and better career prospects, fewer resources for research, lack of international recognition for Indian courses etc. are few of the reasons which influence the lower GER.
17. Creating opportunities & world class institutions for Higher education has been one of the priorities during the early years of Indian independence. However, over the years, both the quality as well as the reach has not kept up with the growing needs.
18. The skill set of the youngsters will have a great influence in the development of the state, hence it is imperative that this section of the population needs to have the right skills.
19. The new programmes should help in improving the quality of higher education, and pave way for new avenues.

20. The job landscape is changing so rapidly that it is almost impossible to predict the skills in demand after a few years.

21. A well rounded education with a strong platform for embracing new skill quickly seems to be the requirement of the day in this scenario. Emphasis on soft skills including effective communication across all programs and degrees is another priority. Increasing the number and a variety of degree programs seems to be counterproductive in that neither prospective employers are sure of the skills that a graduate possesses nor is the candidate herself able to put it across with clarity.

22. It is therefore desirable to cut down on the proliferation of different courses at the bachelors level and place the focus back on a very conservative list of traditional and easily recognizable courses. These immediately categorize each graduate into broad and easily recognizable bins based on their background but at the same time attesting to a minimum capability in terms of their ability to grasp new things and learn new skills.

Suggestions and Recommendations

I. Under Graduate Programmes

1. Degree with Honors: Several foreign universities do not recognize a three-year undergraduate degree thereby diminishing an Indian student's opportunity to pursue higher education abroad. The four-year programme aims to clear this roadblock to an aspirant apply for master's and other higher education courses in a foreign varsity. The four-year programme, in the chosen major and minors, will provide students the opportunity to experience the full range of liberal arts education. The three-year programme will lead to a Bachelors degree. Both programmes may lead to a degree "with Research", if the student completes a rigorous research project as specified by the Higher Education Institute. The caveat is that this can fail miserably in institutions/colleges with no proven practice of research. These courses should be strictly limited to institutions with palpable research output for students to be exposed. It is therefore, recommended that the 4 year Honors degree programmes be initially introduced in Universities/affiliated colleges with NAAC grade - A or above or those affiliated institutions that fall within the first hundred in the NIRF ranking 2020/Universities that fall within the first fifty in the NIRF ranking 2020. Some of the suggested subjects for Honors programmes are as detailed below:

- a. Economics/Econometrics
- b. Statistics

- c. Physics
- d. Chemistry
- e. Psychology
- f. Geology
- g. English
- h. Commerce
- i. Biological Sciences
- j. History
- k. Sociology
- l. Anthropology

2. Three/triple main programmes: Introduction of three/triple main programmes with equal weightage for each major may mitigate the problem of equivalence. Students get the opportunity to opt any of the majors for their higher studies as well. One of the main/major/core could be any of the new generation programme.

Some suggestions are:

- a. **B Sc Chemical Biology/System Biology/Computational Biology** (Chemistry, Zoology, Botany/Genetics/Molecular Biology/Biotechnology/Computational Biology/Bioinformatics/Computer Science and Statistics)
- b. **B Sc Biological Sciences/Modern Biology** (Zoology, Botany, Microbiology/Biochemistry/Biotechnology/Bioinformatics)

c. **B Sc. Chemistry, Physics, Mathematics/Nanoscience/Astrophysics/Astronomy/Space Science**

d. **B Sc Mathematical Sciences** (Mathematics, Statistics, Data Analytics/Economics/Computer Science)

e. **B Sc Disaster Management, Environmental Studies and Sustainability Science**

f. **B Sc Psychological and Behavioural Sciences** (Psychology, Behavioural Science, Counseling)

g. **B A Foreign Languages** (English, French, German/Russian/Japanese/Chinese/American sign Language)

h. **B A Social Sciences** (History, Political Science, Economics/Geography/Sociology/Philosophy/Gender Studies, Anthropology)

i. **B A International Relations** (Internationals Relations, Political Science, History/Economics/ West Asian Studies)

3. Rather than going in for expansion of the variety of degrees particularly at the bachelor's level, consolidation may be the order of the day. Even the two bachelors in Zoology and Botany are outdated in the context of modern Biology and a single degree in Biology may be more successful with avenues for specialization.

4. **Four Year Programmes with facility to opt for a specialization in the fourth year:** To address the immediate need to train the young population with skills that

are topical and relevant to the rapidly changing world of today, the following options may be considered.

Convert the existing conventional bachelor's degrees into four year programs with the fourth year dedicated to a specialization chosen from a wide possible list. Like the proverbial icing on the cake, these are extras that a prospective employer can look for on top of a solid and well defined bases skill and knowledge set. This has the additional advantage of the students being able to vie for a PhD position elsewhere and even abroad (a great draw for Kerala students) right after bachelors. Moreover, the students opting for this programme will have to undergo one year training in one of the reputed research institutions in the country or abroad in the specialised subject they have opted.

Some of the specialization subjects are detailed below:

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| 1. Epidemiology | 8. Plantation Management |
| 2. Virology | 9. Food Quality Assurance |
| 3. Fish Farm Management | 10. Natural Resource Management |
| 4. Immunology | 11. Tropical Ecosystem Management |
| 5. Biological Data Management | 12. Organic Farming |
| 6. Medical Documentation | 13. Petrochemical Sciences |
| 7. Climate Monitoring and Flood Management | 14. Nanosciences |

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|--|---------------------------------------|
| 15. Pollution Control | 32. Government Studies |
| 16. Health, Safety,
Environmental (HSE)
Management | 33. Public Policy Studies |
| 17. Fire & Safety
Management | 34. Local Governance |
| 18. Forensic Sciences | 35. Museology |
| 19. Science Policy Studies | 36. Material Culture Studies |
| 20. Energy Conservation | 37. Critical Heritage Studies. |
| 21. Robotics | 38. Social Informatics |
| 22. Bioinformatics | 39. Archival Studies |
| 23. Artificial Intelligence | 40. Science Policy |
| 24. Disaster Management | 41. Social Exclusion Studies |
| 25. Criminology | 42. NGO Management |
| 26. Information Sciences | 43. Social Medicine/ Public
Health |
| 27. Planning and Budget
Studies | 44. Social Media Journalism |
| 28. Social Statistics | 45. Visual Cultural Studies |
| 29. Developments Studies | 46. Business Communication |
| 30. Rural Management | 47. Urban Planning and
Design |
| 31. Migration Studies | 48. Hospital Administration |
| | 49. Company Law/ Maritime
Law |

5. **Optional Minor:** In addition to pursuing a major degree, students may also learn about another academic field by attending the relevant courses. The students may be free to attend those courses out of your own interest purely to gain knowledge, or can take them up as "additional" courses - meaning that the student intend to write the exams for the course, which allows for the course to show up on their grade card which leading to a minor degree. Such minor degrees programmes which have already been implemented in IITs may be implemented in the affiliated colleges also.
6. **Job oriented / skill development programmes:** Since re-skilling is emerging as an important requirement for keeping the workforce dynamic and capable, the affiliated colleges may put emphasis on short term “executive development” type courses. These can very well be run in conjunction with the fourth year specializations mentioned earlier providing a revenue stream for the colleges that will enable, in turn, induction of resource persons to run even wider variety of specializations.
7. **Course based Undergraduate Research:** Course-based research experiences (CREs; also known as Course-based Undergraduate Research Experiences or CUREs) have dramatically improved the reach and impact of research experiences for undergraduates, especially for freshmen and

sophomores. CREs could be implemented in atleast colleges with A++ grade in the NAAC accreditation.

8. New Programmes in innovative areas: The following programmes are suggested for the colleges that excel in the respective areas/specialised departments.

- a. Bachelor of Design (Digital & Interactive Design)
- b. B.A. Rural Development and Development Studies
- c. Bachelor of Sports Management (BSM)
- d. BA Applied Linguistics and Language Teaching
- e. BA Modern Languages
- f. Bachelor of Financial Markets (BFM)
- g. B. Sc Anthropology / Visual, Material and Museum Anthropology
- h. BA in Archeology and Material Culture Studies
- i. Bachelor of Audiology & Speech Language Pathology (BASLP)
- j. Bachelor of Multimedia Communication (BMMC)
- k. B Sc Food Science and Quality Control

II. Post Graduate Programmes

1. Integrated MA/M Sc Programmes: Selected colleges with atleast A++ grade in NAAC or placed within first fifty ranks in NIRF may be granted integrated MA/M Sc programmes with no exit option. Such programmes may be

designed incorporating the existing academic departments so that the infrastructure and manpower available may be effectively utilised. Some of the programmes suggested are detailed below:

- a. Integrated M Sc Programme in Basic Sciences (Chemistry, Physics, Mathematics/Biology/Statistics)
 - b. Integrated M A Programme in Social Sciences (Economics, Political Science, History/Philosophy/Sociology/Anthropology/ Archaeology /Culture Studies/Development Studies)
 - c. Integrated MA programme in Languages (English, Malayalam, Linguistics, Theatre Arts, Arabic/Hindi/Any Indian Language/Foreign Language)
2. Some of the conventional PG programmes are being offered in very few colleges across the state which causes immense demand for such programmes. Such programmes may be considered in the current scenario.

Some Suggestions are:

- a. M Sc Geology/Petroleum Geology/Geography
- b. M Sc Psychology
- c. M Sc Statistics/Data Analytics
- d. M Sc Artificial Intelligence and Robotics
- e. M Sc Space Science
- f. M Sc Forensic Science

- g. MA Economics/Econometrics
- h. M A International Relations and Politics
- i. MA Historical Studies /Anthropology
- j. MA Archeology and Material Culture Studies
- k. MA Global History
- l. MSW Disaster Management

III. Engineering Programmes (M Tech)

Noting that the fourth industrial revolution refers to how technologies such as artificial intelligence, autonomous vehicles and the internet of things are merging with the physical lives of citizens and since emerging technologies can drive future solutions for India's large- scale developmental challenges following programmes are proposed:

- a. Educational Technology
- b. Financial Technology (FinTech)
- c. Health Sciences Technology
- d. Agricultural Engineering
- e. Human - Machine Interaction
- f. Autonomous Systems
- g. Smart Sustainable Development
- h. Next Generation Infrastructure
- i. Product & System Design

- j. Energy & Environmental Engineering
- k. Engineering Innovation & Entrepreneurship
- l. Media Engineering & Technology

IV. University academic Departments

It has come to the notice of the committee that certain post graduate programmes shall have greater scope in University Academic Departments. Hence, the following programmes are suggested for the University Departments.

1. M Tech Nanoscience and Nanotechnology
2. M Tech Food Science and Technology
3. M Sc Artificial Intelligence and Robotics
4. M Sc Data Analytics
5. M Sc Gender Studies and Sexuality
6. M Sc Space Science
7. M Sc Energy Materials and Sustainable Development
8. M Sc Disaster Management and Resilience
9. MA Archeology and Material Culture Studies
10. MA Comparative Literature
11. MA Comparative Social Research
12. MA Population Studies

Extremely mobile PG programmes may be conducted with the participation of three or more Universities in running the programme. These sorts of programmes are being offered in many of the foreign Universities. The students can enjoy campus life of all the participating Universities along with taking advantage of infrastructural facilities and faculty expertise. The fourth semester of the programme shall be dedicated to project work in any of the internationally acclaimed Universities/research institutions. The degree shall be awarded jointly by all the participating Universities.

VI. Suggestions on Examination and Evaluation

Along with the introduction of the new programmes at the Undergraduate level, the current structure of the examinations should change. Instead of the heavy focus on end semester of written examinations, students should be encouraged to learn thoroughly and the evaluation needs to be based on their critical engagement with the course readings expressed in the written submissions. In other words, we should not bring in the memory testing kind of examination that is the order of the day. Instead the emphasis should be on creative learning expressed through the assignments, presentations and writings that the students should present. In order to accomplish this, students should be trained in reading literature and academic writing at the undergraduate level itself. Considering the current scenario, the

component of online courses (from a prescribed list) participation can be added for credit (globally accepted online courses).

It has come to the notice of the Committee that as per the provisions in the Statutes of the major affiliating Universities, the last date for submission of application for affiliation of a course for the academic year 2020-21 is as detailed below:

1. University of Kerala – 31st August 19
2. Mahatma Gandhi University – 31st August 2019
3. University of Calicut – 31st October 2019, 31st December 2019 with fine
4. Kannur University - 30th November 2019 31st December 2019 with fine

In the above circumstances, it is recommended that the last date for inviting application for grant of affiliation for the academic year 2020-21 may be extended up to 31st July 2020 for all the above mentioned Universities.