

THE KERALA STATE HIGHER EDUCATION COUNCIL

RESTRUCTURING UNDERGRADUATE EDUCATION

REPORT

- A. Vision Statement
- B. Programme of Action
- C. Appendix
- D. New Nomenclature

Committee on Restructuring Undergraduate Education

1. *Dr. M. Vijayan, Molecular Bio Physics Unit, Indian Institute of Science, Bangalore, 560012 (Chairman)*
2. *Dr. V.C. Harris, Director, School of Letters, MG University, Kottayam*
3. *Dr. Ambika G, IISER, 900NCL Innovation Park, Dr.Homi Bhabha Road, Pune, 411008*
4. *Dr. M.A. Khader, Director, SCERT, Poojappura, Trivandrum, 695012*
5. *Prof.C.P. Chitra, Department of Malayalam, Government Sanskrit College, Pattambi, Palakkad*
6. *Dr. A. Razaludeen, Kochu Veedu, Utopian Gardens, Ashramam, Kollam -8*
7. *Dr. Achuth Sankar S Nair, Member, Higher Education Council (Convenor)*

REPORT ON RESTRUCTURING UNDERGRADUATE EDUCATION

A. Vision Statement

- 1. Comprehensive Reform:** Undergraduate education in Kerala requires major transformations, a transformation from rigid to flexible, from a set pattern to choice based structure, from exclusive summative evaluation to continuous assessment, from teacher-centred to student-centred approach, from year system to semester system, from talk-and-chalk to activity based education. These are indeed ambitious, exciting, and challenging transformations. Realities of resource limitations, of infrastructure, of permanent teachers, of finance, of appropriate regulatory frame work etc., which are well known, cannot obviously be wished away. But the transformation has to commence, by overcoming the constraints, as it is the need of the society and the need of the hour.
- 2. The Four Pillars of Learning:** Undergraduate education should delicately balance imparting intellectual skills, contemporary vocational skills of the student's choice and a compulsory set of social skills. Even as higher education should enable the learner to earn a decent living, either through wage employment or self employment, it should not degenerate into a mere training for global jobs. At no point of time should the vision of facilitating the growth of responsible citizens with knowledge, wisdom, creativity, life skills and social sensitivity should be forgotten. UNESCO's four pillars of general education— learning to know, learning to do, learning to live together, learning to be — are directly applicable to the undergraduate level of education also in many ways.
- 3. Three Functions:** The functions of teaching–learning, research and extension must get adequate attention in a comprehensive scheme of undergraduate education. There should be provision for training in methodology through self-learning, writing of term papers and project work. Extension could be integrated into the curriculum by giving some recognition for it in the scheme of assessment.

4. **Multi-disciplinarity:** The importance given to disciplinary boundaries are declining all over the world, based on long standing debates by academic community on changing skill requirements of new generation jobs, on multi-disciplinary approaches and as a result of the emergence of a large number of interdisciplinary subjects. The undergraduate education system needs to creatively respond to this development by providing access to multidisciplinary courses with an inter-disciplinary content.
5. **Modified CCS:** The practical realization of the above objectives would require the introduction of Course-Credit-Semester (CCS) system. Under CCS courses would be designed, taught and evaluated by the same teacher. It may not be feasible to switch over to the system in full immediately. The attempt should be to introduce a modified CCS initially and to move towards the full system progressively by incorporating changes incrementally. Initially courses would continue to be designed by the respective Boards of Studies (BOS). But individual colleges/ teachers will have the freedom to submit course proposals for the consideration of the BOS. However colleges would introduce only courses which are sanctioned by the universities. Yearly system may be replaced by semester system as early as possible. The existing practice of sharing teaching and evaluation by a team of teachers would continue for some more time.
6. **Four Streams:** There shall be four broad streams in undergraduate programme: Science, Social Science, Humanities and Business Studies. The conventional single Main/ two Main/ three Main/ restructured/vocational courses should give way to a system which would permit a student to graduate by accumulating specified credits in one or more than one area of specialization or without any specialization if he/she so desires.
7. **Integrated Masters Programme:** Apart from the regular undergraduate programme an integrated Masters programme of five years duration may also be introduced. The courses in this programme would be more advanced and more discipline specific than the regular undergraduate programmes. Students who join the programme would however be free to opt out after three years and earn a bachelor's degree.
8. **Common Core and Optional Courses:** The undergraduate system must provide for general liberal education and specialization at the same time. Every undergraduate, irrespective of his/her subjects of specialization, should undergo a minimal common core

of general education. The courses in the first semester should be common for every student covering language, informatics, study skills, academic writing and societal studies. In the second semester also two common courses covering the nature of academic enquiry and the complementarities among various disciplines could be introduced. These courses would prepare the ground for multi-disciplinary and holistic education and ensure that the students are not merely trained to perform certain functions, but undergo all round development. The remaining courses must be left to the choice of the students, based on their needs and interests, subject to the availability of courses. It must be emphasized that a student who wants to do higher studies in one discipline should accumulate a prescribed minimum number of credits in that discipline and a certain number in relevant related disciplines. The remaining can be chosen from the area of student's interest. The system of faculty advisor should be put in place so that the student is given guidance in the choice of courses according to his/her aptitude and interest. During the transition into the new system, faculty advisors should be alive to the limitations of the existing faculty and infrastructure and should ensure that they are effectively utilized.

9. **In-sem Assessment (IA) and End-sem Assessment (EA):** Semesterisation would substantially increase the burden of the universities, if all examinations are to be conducted by them. Hence it is essential that an alternative is evolved. A possible solution is continuous internal assessment. It may be introduced in stages. Any anxiety about the misuse of the system by victimization/favouritism may be eliminated by ensuring transparency through open In-sem Assessment and by evolving objective norms for assessment. A reliable mechanism for grievance redressal should also be put in place. Complete internal assessment must wait till the system gains wider acceptability. Till then, In-sem internal assessment must be combined with End-sem external assessment.
10. **Zero Semesters:** The undergraduate programme should be completed within a minimum of 6 semesters and a maximum of 10 semesters, with provision for zero semester. If a student does not clear a course within the regular schedule, he/she should repeat that course with other students when the course is again offered. If attendance requirements are fulfilled, the student need not attend the lectures again.
11. **Integration of ICT into the Curriculum:** Undergraduate education needs to consider the possibilities of using Information Communication Technologies (ICT) for improving

content, method and access. It should not however be perceived as a substitute for class room teaching. We need technology in addition to, not instead of, class room teaching. Faculty web pages need to be encouraged, if not made mandatory, to make the educational process visible. From mere use of ICT as means of communication and multimedia presentation aid, it has to be integrated into the teaching and learning of various subjects in a microscopic way. Teaching and learning of certain subjects can be revolutionized by integrating ICT tools. Mathematics is an excellent example. By using free software's like *Scilab*, mathematics can be presented visually and there is a great opportunity to completely revolutionize mathematics education (BOS in Mathematics should lead this transformation to visual mathematics). Chemistry is another instance where molecular visualization using free software *Rasmol* can be integrated into teaching. Language lab for English teaching is yet another example. This will require teacher training and expansion of ICT infrastructure.

12. **Student Feedback:** Student feedback on teaching is an integral part of In-sem Assessment. Mid-way through a course, student feedback should be collected, compiled, prioritized and utilized for self-improvement by the teachers. However, the student feedback should not be linked with general performance assessment and career advancement of teachers.
13. **Curriculum Design:** A properly designed curriculum should be able to ensure a creative and innovative educational experience, within the broad limits decided by the Boards of Studies. Curriculum design needs to be professionalized. A curriculum document must contain specific details such as regulation, syllabus and scheme of evaluation and guidelines for classroom and laboratory transactions, field activities, reading list, cyber learning resources, assignment, quiz questions, activities, projects, tutorials, seminar etc. The aims and objectives of the programme and of each course should be clearly specified.
14. **Pattern of Questions:** Examination reforms are absolutely essential to bring in desired effects of the proposed restructuring. Questions which require simple memory recall do not help in assessing the achievement of objectives. They do not test the ability of the student to apply knowledge in a new situation. The school education system in Kerala has already switched over to a creative assessment process and the higher education system needs to follow suit. A judicious mix of questions which assess (i) knowledge acquired (ii)

standard application of knowledge; (iii) application of knowledge in new situations (iv) critical evaluation of knowledge and (v) the ability to synthesize knowledge drawn from various sources would be required.

15. **Certification of Drop-outs:** No consideration is usually given to the fate of drop-outs from higher education. Even if a student fails in one paper in a 3-year course, he/she ends up with no certification of what has been achieved. Appropriate certification for those who earn 25%, 50%, and 75% credits of undergraduate programmes would be desirable. Also, zero-credit auditing of the courses should be permitted. Zero-credit audited courses should be open also to non-regular students at the discretion of the colleges, without affecting infrastructure availability for regular students.
16. **Permanent Faculty:** The hopes of the proposed restructuring will fall flat if a large part of teaching is conducted by “guest lecturers”. The Government/Universities should ensure that an approved staff pattern is put in place for all colleges, irrespective of the kind of management, Government/Aided/ Unaided and that permanent teachers are appointed according to the staff pattern. It is also necessary to ensure a clear separation of aided and unaided streams and regular and distance/private education streams. The number of students to be enrolled for each course should also be decided on the basis of academic rationale and infrastructure availability.
17. **Qualified Faculty:** Teacher’s qualification in emerging areas is a major concern. When emerging subjects are offered for the first time, teachers qualified in the concerned subject may not be available. However, this should not mean that the field is open to all. For 3-5 years, teachers holding P.G. qualifications in allied areas (as clearly identified by the relevant BOS jointly) may be permitted to teach, with mandatory teacher training designed by academic staff colleges. It will be ideal that the BOS give thought to teacher qualifications at the time of designing courses. This should be done for each course for inter-disciplinary subjects. All newly appointed teachers should undergo an orientation course, preferably of three months duration.

18. **Coverage of Reforms:** This report ideally should be applicable to all streams of education. However, professional courses such as engineering, medicine, nursing, music, fine arts etc do not come under the purview of these recommendations at this point of time. Nothing prevents the academic bodies from considering appropriate adoption, though.
19. **Responsibilities of Stakeholders:** The restructuring suggested represents a major change from the past and is likely to require readjustment from various stakeholders: the government, the universities, colleges, teachers, students and parents. As regards teachers, effective motivating sessions and course-wise workshops should be organized by the universities. Induction programme for students also must be organized by each college.
20. **Phased Implementation:** The above programme of restructuring undergraduate courses is recommended to be implemented in a phased manner in the course of the next two years, starting with 2008 admission. Proposals regarding the phasing and the responsibilities to be undertaken by the stakeholders at each stage are given in the section on Programme of Action.

B. Programme of Action

The changes envisaged in the proposed restructuring would cover pedagogy, content and structure of courses. The proposal is to introduce these changes in a phased manner, spread over two years, starting with some changes in pedagogy in 2008, and complete overhaul in pedagogy, content and structure in 2009.

2008-11 Batch

This batch should carry on with yearly pattern, but introduce Grading System and also In-sem Assessment (IA) of 25% through assessment components of assignment, seminar, group discussion, field visits, extension activities, assigned activities, test papers, projects etc.

2009-12 Batch

Introduction of modified Course- Credit - Semester (CCS) System should commence with this batch. Introduction of five- year integrated programme in selected colleges/college clusters should also begin from this year. The preparation for designing courses for credit and semester should be undertaken by the universities and colleges at least one year in advance.

Action Required from Government.

- Filling up of all existing vacancies in Government/ Aided Colleges on a permanent basis by June 2008.
- G.O. by June 2008, ensuring that there would be no change in the workload per subject/faculty due to the introduction of academic reforms and that the services of existing teachers would not be affected by the introduction of CCS.
- G.O. enforcing staff pattern as per U.G.C. norms in all unaided institutions by June 2008.
- Separation of aided and unaided streams. Unaided Courses in Government /Aided Colleges will have to be administratively de-linked and spatially relocated by June 2009.
- Separation of regular and distance education streams by June 2009. For this, an Open University may be set up in 2008. The students under Distance Education and Private Registration schemes can pursue their studies in the Open University. The revenue loss of the universities consequent on de-linking Distance Education/Private Registration should be compensated by the Govt.
- Universities should be permitted to appoint additional staff, if required.

Action Required from Universities

- Based on the broad outline of the reforms, universities may set up implementation committees by January 2008 and provide them adequate financial assistance and monitor the implementation of the scheme.
- The BOS of each subject should prepare courses for semester system.
- Special committees may be constituted for the preparation of common core courses by June 2008
- Regulation for staff pattern in unaided colleges to be put in place by June 2008.
- Regulation ensuring that the marginal increase would not exceed 10% of the sanctioned strength should be enforced from 2008 admissions.
- The examination wing should be computerized by June 2009.
- Examination reforms to be initiated immediately and finalized by June 2009.
- Other appropriate changes in regulations, ordinances etc to enable reforms at each stage should be introduced.
- Organize workshops for teachers on a massive scale from June 2008 for evolving the new curriculum through participatory mode.

Action Required from Higher Education Council

- Hold awareness and training programmes for teachers on a regular basis from Jan.2008.
- Prepare monograph on Grading and Internal Evaluation by May 2008 for training of teachers and students
- Prepare model course material for the common core for first year degree students and monographs on C.C.S and Examination Reforms by January 2009.

C. Appendix

1. The number of credits for courses would vary on the basis of the nature and content of courses. The maximum credit for a course should be 4 and this shall be so for majority of the courses. 3 and 2 credits should be considered wherever necessary. Students who proceed to a postgraduate programme in a particular discipline should earn prescribed number of credits in that and related disciplines. The minimum number of credits of the undergraduate programme and for qualifying for higher studies in a particular subject will have to be worked out. The Council would prepare a monograph on CCS by seeking expert assistance.
2. In-sem Assessment (IA) should be 25% initially and progressively increased to 100%. I.A. would be undertaken internally in the colleges concerned on the basis of common norms approved by the University. The following division for 25% In-sem Assessment is suggested for the 2008 batch:
 - Written assignment: 10%
 - Group Discussion/Field Visit/ Mini-project/other assigned activity: 5%
 - Class test: 10%.
 - There should also be one project or extension activity recognized by the university, the equivalent of one full course in the last year/semester, which should be evaluated internally.
3. The practice of giving grades instead of marks should be introduced from 2008 admission. The grades will be on a letter scale. The grades should be converted into value points and the Semester Grade Point Average (SGPA) calculated as follows: $SGPA = \frac{\sum (\text{credits} \times \text{value points})}{\sum (\text{credits})}$. The Cumulative Grade Point Average (CGPA) for the course will be the weighted average of the SGPA of all semesters. While a student can clear a course with any grade, the minimum overall grade required for qualifying for the degree would be specified. In calculating the grade for the course, the weightage of the In-sem and End-sem assessment should be given due consideration. For instance, if the In-sem Assessment is 25% of the course, the grade obtained for that segment will have one fourth weightage where as the other component, viz the external end semester examination will have three fourth weightage. The grades for the In-sem Assessment and End-sem Assessment shall be entered separately in the score sheet and

added together for the calculation of CGPA. The name of the institution which has conducted the In-sem Assessment will also be entered in the score sheet. The Council should bring out a detailed manual of assessment and grading.

4. In-sem Assessment is likely to bring up student grievances which need to be recognized. A mechanism should be evolved for addressing it. Transparency should be practiced at every stage of assessment. Student grievance should be addressed by the teacher concerned, in the first place. Student Grievance Committees should be formed at the department level and at the college level, for considering issues that are not resolved at the level of the teacher and department respectively. There should also be an appeal committee at the university level. Detailed guidelines and documentation of assessment process will greatly reduce student grievances.
5. A minimum of 18 working weeks should form one semester, with one month break between semesters. The minimum number of contact hours should be 90 working days (18 working weeks of 5 days x 5 hours =450 hours of theory /lab /seminar/ examinations). It should be possible for the student to keep apart 2-3 hours of self study/day. There should be centralized evaluation and computation of marks during the semester break. Since there would be two spells of vacation, one after each semester, the evaluation can be completed before the beginning of the next semester and the grades made available to the students. The registration for the next semester should be on the basis of the performance of the previous semester. A student can proceed to the next semester only if he/she scores a minimum grade, which would be decided when the scale of grading is finalized.

D. New Nomenclature

- **Assignment:** *An assessment strategy where a time-bound task is assigned to the learner to be completed outside the class, with clear indication of the work expected to be done to achieve each grade.*
- **Audit Courses:** *Courses which can be registered by students without earning credits and without the requirement to take exams. They shall have zero-credits. Credit courses can be registered as Zero-credit courses as per the student choice.*
- **Course:** *A reference to the individual subject of study in a particular semester (traditionally referred to as subject/paper)*
- **End-sem Assessment:** *A reference to an assessment done at the end of the semester (traditionally referred to as final exam/terminal exam)*
- **Faculty Advisor:** *A teacher who performs academic counselling to help students make choices in respect of courses. Ideally, all teachers are expected to do counselling work in addition to their regular teaching.*
- **In-sem Assessment:** *A reference to continuous assessment done during the semester (traditionally referred to as sessional)*
- **Programme:** *A reference to the entire course of study and examinations (traditionally referred to as course)*
- **Quiz:** *An assessment method which focuses on verification of achievement of specific knowledge/skills, often in the form of a multiple choice/ objective test*
- **Syllabus:** *A statement of aims, objectives, topics of study, reference books/resources, hours required for lecture, theory and practical, and assessment strategies for each course*
- **Tutorial:** *A teaching device employed as supplementary and subordinate to the lectures, the principal function of which is intellectual midwifery. This is facilitated by intimate interaction between the teacher and students and through peer discussion. To be effective, the strength of tutorial groups should not exceed ten.*
- **Zero Semester:** *A semester in which a student is permitted to opt out due to unforeseen reasons. He/she can do the courses of that semester in the subsequent semesters.*

* * * * *