KERALA STATE HIGHER EDUCATION CURRICULUM FRAMEWORK

for

UNDERGRADUATE PROGRAMMES

May 2023

Kerala State Curriculum Committee for Higher Education

(GO (Rt) No. 35/2023 Hedn. dated 06.01.2023)
Curriculum Development Committee
(Give the GO Appointing the Committee)

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Documentation Division

May 2023

Published by The Kerala State Higher Education Council

Science and Technology Museum Campus, Vikas Bhavan P.O.,

Thiruvananthapuram-695033, Kerala State, India

www.kshec.kerala.gov.in

Phone: 0471- 2301293 Fax: 0471 2301290

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Chairman's Introduction

The rapid and unprecedented changes being observed in all spheres of life in the 21st century are posing enormous challenges to the traditional ways of education. As the world becomes increasingly interconnected, it gives rise to a wide range of opportunities and challenges. Our education system must swiftly evolve to be able to inculcate 21st century skills to help students not just to survive but to thrive in such an environment. The higher education system needs to become more socially responsible and help to develop a knowledge society which can drive development through social and technological innovations in a sustainable manner. As the central objective of the Undergraduate Curriculum the Government of Kerala has envisioned building of a strong knowledge society which can help develop and sustain a knowledge economy.

The Gap

With the exception of a few premier national institutes, our present system relies more on regulations with a focus on discipline based syllabi which provides very few opportunities for interdisciplinary and multidisciplinary learning, lack of early-stage exposure to research, a weak ecosystem for innovation and low levels of industry engagement. The present higher education system is predominantly teaching centric, with the teachers' role being to provide facts and the role of the students being restricted to memorising these facts and reproducing them in examinations. Very little importance is given to develop conceptual understanding, relevance to real world situations, logical analysis and problem solving. Establishing precedence of learning over teaching requires a fundamental transformation of the existing system of higher education. Education in many countries is already learning centric and many others are moving fast towards it. Digital technologies and the internet today provide students access to web-based learning of enormous flexibility and choice, thanks to the vast body of open-source knowledge repositories across disciplines. Technologies empower students to enjoy the facility of learning, anytime, anywhere and at any level what they intend. Freedom of multiple entry and exit besides the Academic Bank of Credits facilitates their mobility from University to University even

globally. Students now form part of the worldwide community of learners capable of wider interaction, networking, and collaboration.

In recognition of this gap and the view of the Government to develop Kerala as a knowledge society, it becomes necessary that we strengthen undergraduate programmes with curricula that can equip students with the knowledge base, intellectual abilities, a worldview, flexible skill sets and the basic expertise that will make them effective citizens in a knowledge society and offer them multiple employment options. Undergraduate studies should ideally lay the foundation for the development of broad intellectual skills and other competences that enable transfer and application in a wide range of practice. The disciplinary training at the undergraduate level (as the word 'discipline' connotes) is more to develop structures of thought, inquiry, exploration, expression, attitudes, sensibilities, habits, and abilities associated with teamwork, than to commit to memory a large array of information, often in a disconnected manner.

Task of the Present Committee

The task reposed on this Committee is to draw the Curriculum Implementation Plan (CIP) for the successful translation of recommendations provided for in the Higher Education Commission Report of Professor Shyam Menon. Chapter IV of his Report is on 'Curriculum Revision', which provides several recommendations for revamping the Higher Education in Kerala. Adhering to the perspective (the set of values and criteria that guided the process of developing a curriculum) laid down in the Report and the UGC Guidelines, the Commission had recommended: ---- "the immediate task is to design the broad curriculum structure for the adoption by the same with modification by the universities. Subsequently, the priority will be to complete all preparations at the university and college levels for the first year and to begin the preparations for the second year i.e., on the foundation baskets of courses and the initial courses for the various pathways." At the outset there must be clarity of the basic prerequisites for the effective implementation of the Curriculum as prescribed by the Commission. A Scheme of implementation requires identification of underlying problems, making systemic changes, promulgating necessary rules, incorporating adaptation measures if necessary while ensuring that the intended transformation critically essential for academic growth are not affected.

The main task of the present committee is to see that the process of the design of the new Curriculum Framework ensures depth in knowledge and clearly articulates ways to attain it through active learning. Curriculum Framework refers to how syllabuses of Programmes are structured, Courses designed, and schemes of education prepared and translated into teaching and learning. The implementation, as an essential part of curriculum development, must bring into existence the reforms postulated in the Commission Report. It requires a detailed presentation of the Curriculum Framework and the statement of perspective.

The Commission Report contains a Curriculum Framework and pedagogical perspectives based on a detailed field assessment and contextualisation against the global as well as national developments. The Framework herein, briefly recommends Courses of study aimed to enable entry into indepth knowledge in the areas/fields concerned and ways to attain this through active learning. Hence, the Curriculum implementation plan, has to expand the curriculum perspective, articulate the pattern of Undergraduate Programmes, the structure of Courses, the extent of knowledge, practical skills, innovativeness and creativity the learner has to attain. It is important to note that the Commission has made its recommendations based on a social need assessment of its own, rendered plausible through extensive sitting with the stakeholders.

Dr. Suresh Das
Chairman, Curriculum Committee

I

The Kerala State Higher Education Curriculum Framework

Any curriculum document is at once a pedagogical cum social document, which visualises the extent of knowledge, domain specific skills, criticality and creativity the learner has to attain through Courses. It also visualises the specific context in which the learner achieves her capabilities which may vary according to space and time. While keeping in mind the internationally and nationally benchmarked extent of knowledge, it is equally important to be grounded to the regional historical and socio-economic context. In fact, any curriculum design will have to take into account the specific features of the educational development of the region concerned while the Curriculum Framework is prepared. A longish historical narrative of regional experiences in higher education is not relevant here since the new curriculum seeks to effect a break from the persisting system noted for historically contingent practices. Nevertheless, it is appropriate to appraise the socio-economic context in which we have to situate the higher education reforms.

Influences of free-market capitalism on the country's politics in the form of deregulation and reduction in public welfare expenditure and their impacts have been there as part of life in Kerala for more than two decades now. While these changes accounted for stresses and strains at the State level, they opened up new possibilities, like wider access to new technologies such as ICT, AI, Big Data, Quantum encrypting etc., advantageous to knowledge capital, biotechnology, tourism and new commodity chains. Negatively impacted, basic industries, agriculture and public sector amenities, the common people especially the downtrodden are able to survive only with the support by the Government support. Consequences in the higher education sector are obvious in the State where even the downtrodden have a long tradition of resorting to education for upward social mobility.

Damages in the ecologically sensitive coastal and lowland zones besides the highland tracts, badly hit by climate change and successive floods, have forced us to view disasters including the COVID pandemic through the lens of resilience and

sustainability. Coastal dweller's navigational skill and adaptability to the GPS driven cell phones saved many lives. But despite cell phones the digital divide in the absence of Online connectivity became a serious issue. All this accounted for the new perception of Rebuilding Kerala, presupposing the need for a technologically enabled and socially conscious workforce with optimal knowledge and skills of international standards. Affirmative action of the Government in progress, the education sector as a whole has been steadfastly holding its commitment to social well being, justice, equity, and access besides fostering scientific temper, secularism and democracy. It is important that the new Curriculum Framework provides for perpetuating and strengthening them.

Another avowed goal of the State Government is the strengthening of the knowledge society that consists of citizens to increase innovation, entrepreneurship and dynamism for strengthening the economy based on them. This requires higher education to design a curricular framework for nurturing capabilities to identify, produce, process, transform, disseminate and apply information to produce knowledge and translate it into solutions for human problems. Further the Curriculum Framework has to provide for empowering the knowledge society with social perception, multi-cultural adaptability, plurality, inclusiveness, solidarity and cooperation. All this transforms a society into the knowledge society. Digital technology enablement of higher education is integral to the process of transformation. To be empowered in the knowledge economy means to be proficient in the production of new knowledge and its translation into uses, products and intellectual property. How to maximise the number of curiosity driven researchers through appropriate higher education and increase social participation in the production of knowledge is the crucial question to be addressed by the Curriculum Framework for heading towards a people centred knowledge society. The basic perspective is universalisation of higher education implying democratisation of contemporary science, technology and human knowledge for empowering even the common people.

New Curriculum Framework shall give great importance in familiarizing all students with Courses enabling them with competence in using digital technologies, computational methods, order statistics, data analytics, and other skills essential to

participate in the knowledge economy. Foundation Courses shall be designed with the knowledge base and skills as learning outcomes. The UGC has made it mandatory and circulated a Curricular Framework and Credit System for the Four-Year Undergraduate Programme model course design with allocation of credits for all universities to adopt. Accordingly, we have provided in this document the necessary stipulations regarding the Foundation Courses.

a) Technology Enablement

Technology enabled learning provides enormous opportunities of flexibility and choice in learning through networks and collaboration with learners elsewhere. Technology provides them unprecedented mobility as well. Twinning enabling completion of a programme partly in India and partly outside India has been prevalent for over five years in several institutions. Multiple exit, transfer of credits and Academic Bank of Credits are essential for students to avail themselves of all this. The Curriculum design has to recognise that digital means are far more than mere information technology. It is not just a technology of multiple tools but a methodology rendering a fundamentally different perception, appreciation and sensibility in all branches of knowledge. Each discipline has a new version now created by the digital methodology of knowledge creation. Arguably digital influx has marked an epistemological turn. Digital Sciences, Digital Social Sciences, and Digital Humanities are examples. Today the prefix 'Computational' is added to any of the disciplines such as Physics, Chemistry and Biology besides Mathematics itself. All these fields are important in the context of employment.

b) Self-learning

In the transformed set up the teachers' role is to teach how to learn by accessing various repositories under ICT environment, which makes the students part of the global community of learners. Hence, the thrust of the new Curriculum Framework is mainly on learning by doing through self-engagements, tutorial assignments, seminars and interactive group sessions besides practicals, workshops and credited internships. This will demand students to take benefits out of all available sources for self-directed learning online in addition to interactive face to face learning under the scholarly guidance of teachers.

The new Curriculum Framework seeks to link self-directed or curiosity-driven learning with investigative or innovative learning, a process close to research in which the teacher becomes a guide and a co-learner rather than the sole deliverer of knowledge through sheduled speeches or lectures. It is indeed a antural process of learning based on inquiries, experimentation, and observation leading to discoveries and production of new knowledge. Students talented in such research based learning should be encouraged to do research based learning for the undergraduate degree and to continue with higher studies in the same way. Likewise, students showing talent in acquiring technical skills and applying them should be able to do such courses and take their undergraduate degree. In the New Curriculum Framework, investigatively acquired knowledge and theoretical scholarship are not to be treated mutually exclusive. Both the groups of learners shall be provided with training in the interface that combines theory and practice. This is particularly essential in the contemporary world characterised by the rise of science-tech hybrid fields rather than mutually exclusive fields of pure science or technology. It is equally important to sustain skills, competences, and capabilities necessary for responsible social life including critical thinking for engaging in public policy debates.

Quality in Higher Education rests with learning, not teaching because it is a personalised and self-directed enterprise of students monitored and assessed by teachers serving as facilitators for the learning process. All learners need to undergo academically challenging courses and assignments to develop competency. Hence, carefully planned academic challenges of learning are indispensable in order to help students gain higher levels of cognitive benefits. Cognitive benefits have to be determined in advance as learning outcomes tagged to the Course, learning exercises, teaching and evaluation. This is easier said than done. However, in any attempts at pedagogical reorientation through the precedence of learning over teaching, learners must be constrained to face cognitive challenges to maximise their potential. Outcome Based Education (OBE) is advised to be resorted to for the purpose of ensuring the benefits for the maximum number of students.

c) Active Learning

The student community is changing fast and their needs and goals are also widening. In order to cater the needs of students in a better way the teaching and assessment

strategies need to be changed considerably. Active learning, active processing of information, technology and real-world applications, professional practices etc should be the part of curriculum transactions. A ‘do-it-yourself attitude’ towards learning has arisen and many students are not willing to sit passively through lectures and demands for substantive and engaging class sessions. Unlike the traditional college students of the past many of our under graduate students are the first in their family to attend college. Many of them have to work and have caregiving responsibilities. They will seek an education that is flexible, relevant and career-focused. The assumption that students share common frames of reference or a common level of preparation are out of date.

In order to bring all students to success, one-size-fits-all pedagogy is not an ideal one. Continuously monitoring student learning and diagnosing gaps and confusions is essential. More over the skills that employers want from college graduates have changed. Along with technical expertise, employers value soft skills like critical thinking and problem-solving skills, oral and written communication skills, teamwork skills including the ability to negotiate and manage conflict and interact effectively and empathetically with people, digital fluency and leadership skills. Suitable pedagogical strategies that can make a big difference in student motivation, persistence, skills acquisition and their ability to remember, understand, apply, analyze, evaluate, synthesize and create.

A considerable shift in teaching away from direct instruction and rote memorization is required to bridge theory and practice. Students should be able to process information and make sense of what they learn should reflect on constructivism in learning and by which they should be able to absorb, retain and apply knowledge and skills in a better way. Apart from the traditional lecture method other pedagogical strategies like Case-based learning, collaborating and cooperative learning, critical and transformative learning ,Experiential learning, Field based learning, gamification, global learning ,immersive learning, enquiry based learning, research based learning, service learning ,public scholarship, Technology enhanced learning, earning by making and doing may be utilized. The learners should be encouraged for deep learning and courses should be designed constructively and aligned with clear learning outcomes. Both teaching and assessment activities should

engage students and stimulate their will to go beyond mere regurgitation of facts. They should actively create their own knowledge. Hence, OBE Approach is required in curriculum planning and transaction. The pedagogical approaches have to be oriented towards enabling students to attain the defined learning outcomes relating to the courses within a programme.

d) OBE Approach

As stated OBE is a student centric educational approach and a learning philosophy, focusing and organizing the entire academic programmes (curriculum) and instructional efforts around clearly defined 'outcomes.' It is a student-centered instruction model that focuses on measuring student performances through outcomes. Outcomes are usually expressed in terms of a mixture of knowledge, skills, abilities, attitudes and understanding that a student will attain as a result of his/her successful engagement in a particular set of higher education experience. The traditional system of education focuses on teachers' inputs and presume that learning has occurred. OBE is focusing on "what the students are capable of doing". There is clarity on what is to be achieved and that achievement (outcome) is pre-determined. OBE goes beyond usual 'structured tasks'. It demands the students to actively engaged in the learning process and demonstrate his/her skills through more challenging tasks and higher order of thinking. OBE provides a focus for assessment and help employers understand programme benefits.

OBE requires to design courses postulating carefully determined Learning Outcomes, which jointly ensure the attainment of Programme Outcomes or Graduate Attributes. Universities have to determine the Graduate Attributes and required Learning Outcomes involving the necessary amount of difficult and moderate cognitive tasks as attached to Courses in order to turn the students into accomplished graduates of competency. It necessitates adoption of appropriate teaching methods to help students attain the anticipated Learning Outcomes. It also necessitates the System of Continuous Evaluation of students' performance with reference to the required Learning Outcomes. The written examination system has to be based on OBE guided questions for the same reason. The OBE model measures the progress of graduates in three parameters, through:

- Programme Outcomes (PO) or Graduate Attributes which give a description of the qualities, skills, abilities and understandings, that an institutional community agrees as its students should develop as a consequence of the learning they engage with the programme of study in that institution. POs indicate what students are expected to know and be able to do by the time they graduate from the institution. POs are not directly connected to any specific academic disciplines.

- Programme Specific Outcomes or Programme Educational Outcomes (PEO) are the broad statements that describe the career and professional accomplishments that the programme is preparing the graduates to achieve what students are able to perform after the completion of the programme.

- Course Outcomes (CO) are the measurable parameters which evaluate each student's performance in Blooms taxonomy levels for each course that the student undertakes in every semester.

Accordingly. every programme of study lends itself to well-structured and sequenced acquisition of knowledge and skills. Practical skills, including an appreciation of the link between theory and practice, will constitute an important aspect of the teaching-learning process. Teaching methods, guided by such a framework, may include lectures supported by group tutorial work; practicum and field-based learning; the use of prescribed textbooks and e-learning resources and other self-study materials; field-based learning/project, open-ended project work, some of which may be team-based; activities designed to promote the development of generic/transferable and subject-specific skills; and internship and visits to field sites, and industrial or other research facilities etc.

For a successful implementation of the vision of this pedagogy the role of teachers are crucial. They should assume the role of a learning architect to engineer the experiences, activities and assessments of all students to bring the desired outcomes from them. The teachers should also be the mentors of undergraduate's students and should be responsible for students' cognitive growth as well as their professional development. The student teacher relations should be reconceptualized. Students should be treated as partners, collaborators, providers of fresh perspectives and creators of knowledge.

Teaching

In the new Curriculum Framework Teaching assumes different dimensions distinguished from what has been common, thanks to digital technology. One is conversion of Classroom Teaching into Active Learning through techno-pedagogy that enables students' effortless involvement and comprehension quicker. With learning becoming central in higher education, teaching shall be scholarly and confined to rendering theories accessible to learners. Theories shall be taught through concrete examples from real life situations in order to help learners to understand the applied context. Naturally, teaching shall be a deeper engagement with latest trends, new interpretations, research findings, discoveries, and inventions demonstrating the depth the learners should strive to fathom. Teaching oriented to questions and clarifications, shall be inevitably interactive.

What the students are able to perform after listening to a teacher's theoretical discussion shall be assessed through feedbacks. Teachers must organise periodic review discussion of the class during the course of the semester. Teachers must schedule brief meetings with the students to share the impressions about each other in the context of teaching and learning. There shall be regular assignments to assess the learner's theoretical comprehension by demanding her to apply knowledge to real-world problems and solve them. Teachers shall be bound to closely evaluate the students' assignment and to promptly return them with considered instructions revealing the strength and weakness of the performance. Teachers' assignments must be challenging even to the most brilliant student in the class. Students, who are slow learners must be given remedial support and extra learning material to cope, rather than stooping to their level and cause to stunt the development of the brilliant. Teachers must let the fast learners to go ahead on their own by listening to eminent lectures in the web, engaging in group discussions, and doing seminars.

Learning assessment

Generally the learning assessment through a written examination fails to capture the cognitive ability that a teacher seeks in the students unless the questions are crafted well. A term paper mode is equally insufficient if the task given is inappropriate. There are better modes of assessment, which can give a more valid and reliable measure

of how far the students can demonstrate their grasp of a particular knowledge and gripping skills. For instance, a peer assessment or a project-based assessment or a problem-solving task, in which the students provide proof of their constructive thinking, inquisitiveness, and creative ability.

It is very important that appropriate methods are used to assess the students' progress of competency in a given disciplinary/subject area and competence in a Programme of study with regard to the postulated Course/Programme Learning Outcomes. For these continuous evaluation through multiple tasks culminating in the terminal examination is essential. The universities/colleges should move to adopt new ways and means of students' learning assessment. A time tested method is observing performance in words and deed against the specific tasks demanding conceptual analysis, real life application, identification of causality, and creative solutions. More weightage should be given to assessment tasks requiring the students' direct engagement with knowledge than their recollection of it. Effective assessment strategies and tools can be developed out of best practices according to the teachers' targets influenced by the Learning Outcomes. All assessment modes need to be used to improve both the teaching and learning methods. In short the assessment should be viewed as a part of integrated and collaborative learning experience.

For each Course there should be continuous evaluation and end semester evaluation. Continuous evaluation may be up to 40% of the total evaluation. There should be library assignments as part of continuous evaluation that consists of class tests and mid-semester examination(s), as decided by the faculty in charge of the Courses of study. Progress towards achievement of Learning Outcomes shall be assessed using time-constrained tests like administering problem-based assignments and practical tasks enabling observation of skills. The end semester evaluation may be by written, computer-based, oral, practical examinations or by performance. They may be conducted in person or online. Examinations will be a minimum of one and a half hours and a maximum of two hours of duration. Student performance should be assessed by an assessor or group of assessors against predetermined standards and criteria. Assessments must be flexible and inclusive in order to ensure that all students have a consistent and fair opportunity to demonstrate their achievement of

Learning Outcomes. Universities to enrich higher education learning experiences of differently abled persons with appropriate learning and assessment methods.

Undergraduate Curriculum

The Commission has recommended a comprehensive reform in the Undergraduate curriculum. It recommends a four-year structure for the undergraduate programme with a single lateral exit option at the end of the third year. According to the Commission, “it implies that the present institutional structure of 3+2 does not have to be transformed drastically and suddenly. Transition to a new structure could be done in stages. There is always an advantage to trying the efficacy of a model in a limited context as a pilot. Based on the evidence that emerges from the pilot, mid-course corrections may be incorporated before launching the curriculum comprehensively.”

Accordingly, the Commission prescribes: “The pathways could be in terms of major minor options with complementary disciplines like Literature and Psychology, Law and Politics, Economics and Business, Physics and Economics, Life Sciences and Physics, Economics and Data Sciences and so on for a three-year model. The above combinations can also be offered as dual major programmes for those students who choose to stay the course for all four years of the programme. “Alternatively, tripos options within the four-year model can offer combinations of disciplines such as Economics, Statistics and Physics, Life Sciences, Physics and Mathematics, Law, Economics and Business, Literature, Psychology and Theatre, Life Sciences, Physics and Data Sciences and so on.”

It is important to recognize that we must prepare the youth for a future that is in the hands of the Knowledge Economy, a widely networked global system. The knowledge economy demands a greater focus on science, digital/information technology, engineering and mathematics at all levels of education as the basic essential literacy for innovation. Most jobs in the Knowledge Economy require skill sets in information technology-related fields. Keeping given the above requirement, we must equip the undergraduate students with the basics of what Knowledge Economy means by literacy.

The Commission recommends that all Disciplinary Courses of UG Programmes must fix the knowledge level consistently higher by avoiding repetition of the knowledge that students are supposed to have acquired at the Plus Two Stage. All Optional Courses of Cognate Disciplines also must follow the same principle. All Optional Courses should be grouped into basic and advanced categories. Students from the same faculty should be allowed to do only Courses in the advanced category. Basic Courses are meant for students from another faculty. Language teaching must be included under the Optional Categories and the principle applies to the Language Courses too. Differentiation between the First Language and Second Language will cease to exist. Excess Teaching Faculty should offer specialised Courses of their competence to adjust the Workload and the rules regarding the minimum number of students per Course should go null and void.

All the Advanced Category Optional Courses must fix Learning Outcomes of Cognitive Levels such as Conceptual/Theoretical understanding, Applying, Analysing, and Evaluating. All Courses of the Basic Category must stress the cognitive benefits of remembering, Understanding and Applying. While the Basic Category is teacher intensive, the Advanced Category is Self-learning intensive. The Commission recommends: “the students must have the option to pursue interesting and unconventional combinations of courses drawn from different disciplinary areas, like the sciences and the social sciences/humanities. The Undergraduate programme structure must have the built-in flexibility to allow students to exercise these options as they progress through the programme, say by the end of the third or the fourth semester.”

It recommends that Undergraduate studies should ideally lay the foundation for the development of broad intellectual skills and other competencies that enable transfer and application in a wide range of practices. Hence, disciplinary training at the Undergraduate level is “more to develop structures of thought, inquiry, exploration, expression, attitudes, sensibilities, habits, and abilities associated with teamwork, than to commit to memory a large array of information, often in a disconnected manner.” With this in view, students irrespective of what they choose as majors must have at least a reasonable understanding of the history and philosophy of science/technology with basic ideas and operational skills in

Computational Statistics/Mathematics. Other interconnected fields in which they must acquire basic knowledge are Environmental Science and Sustainable Development. These must be included under Foundation Courses.

Ideally the Undergraduate Programme should be of the 4-year duration but with an exit option after the successful completion of the third year. The four year pattern is nationally recommended in order to be to par with the Undergraduate Programmes of Universities abroad. The Commission has also emphasised the care required in determining the competencies the students (who constitute more than two-thirds of the total entrants in higher education) acquire by the third year. Since most students who pass out the third year take the exit option it is essential to provide them with competencies enhancing their employability. Hence, the Commission has recommends "to strengthen undergraduate programmes with curricula that can equip students with the knowledge base, intellectual abilities, a worldview, flexible skill sets and the basic expertise that will make them effective citizens in a knowledge society as well as offer them multiple employment options." Through Core Courses, students must acquire communicative skills, analytical skills, criticality, creativity and knowledge-based skill in problem-solving.

According to the Commission, "The capstone should ideally be in the fifth and/or sixth semester and should have a basket of experiential learning credits equivalent to at least half of one semester. This curricular component is essential to ensure that the graduating standards are fully met at the time of lateral exit after three years. This will bring closure for those who are opting not to go on in the programme into their fourth year. Apart from tying the loose ends in the disciplinary training, the capstone must contain experiential learning opportunities associated with employability and entrepreneurship including some field exposure and, if possible, a short internship."

II

Guidelines for Foundation Courses

Constituted in the context of the implementation of the Higher Education Commission's Reforms, the Curriculum Committee's primary responsibility is the preparation of the Curriculum Framework (CF) to be approved by the University. In the specific context the CF is obliged to indicate the pattern of Undergraduate Programmes, the structure of Courses, and the extent of knowledge, practical skills, innovativeness and creativity the learner has to attain and the basic features of a global citizen that she has to assume. It is the prerogative of the University i.e. the responsibility of its faculty or the Boards of Studies, to design Courses in the areas of their professional expertise, and in alignment with the indications provided for in the CF.

In the case of the Foundation Courses (FC), there are UGC specifications for ensuring uniformity of structure, composition, standards and quality across the country. Hence the General Guidelines thereof have to be prepared keeping the nationally prescribed specifications in mind and the objective is assurance of State level uniformity. A certain amount of locally specific factors of diversity should be there in the FC. As in the case of other Courses, the Guidelines can only indicate the range of knowledge, skills, innovativeness and creativity, which has to be reflected in the learning outcomes. Accordingly, the following General Guidelines have been promulgated by the Curriculum Committee.

Universities have to design necessary Foundation Courses for two semesters. A Foundation Course must be made up of the relevant knowledge drawn from different disciplines as a combination in order to provide insights into issues of the contemporary life. These Courses must be appropriate for self-equipping students to see knowledge in life-related contexts. Hence, the challenge before designing the Foundation Course is how to meaningfully organise and render socially useful components of different disciplines as interconnected. Courses must enable undergraduates to become knowledgeable, competent and accomplished citizens influenced by ethics and social concerns. They must promote co-operative mentality

and volunteer spirit. The central objective of Foundation Courses at the Undergraduate level is to develop in the students aptitude to:

i. pursue higher learning in branches of their choice,

ii. continue lifelong education in response to the changing needs of society, and

iii. acquire necessary skills and competency adding to employability.

Out of these, the second and third shall be viewed indispensable for those who seeking exit at the end of the third year, while workplace competencies and skills add to their employability, understanding of how market demand has a role in their employability, and the taste for lifelong learning enhances their career mobility. The students intending to avail the exit option shall be free to take assignments that strengthen their employability. They shall be free to gain workplace skills through internship in lieu of assignments under skill oriented lessons. Likewise, the students planning for continuing their studies shall be free to choose assignments that strengthen their grip in the area of knowledge, which they intend to choose for doing the Masters Programme later.

Further, the Foundation Courses are meant to make undergraduates aware of their knowledge-gaps in:

a. fundamental questions of survival, basics of geology, earth's planetary boundaries, thermodynamics, entropy, and carrying capacity besides problems of environmental as and ecological sustainability;

b. social institutions, structures, practices and ideology perpetuating contradictory social relations, domination, divisiveness, marginalisation and uprooting with reference to class, caste, gender and child abuse;

c. political institutions, ideas, structures and relations of domination; divisiveness, marginalisation and annihilation besides Constitutional citizenry, concept of freedom, fundamental rights, legal framework, secularism, democracy, and socialism;

d. economic affairs in terms of systems, structures, relations, institutions, organisations, practices, forces and consequences local as well as global;

e. the contemporary and future knowledge (general sciences for non-science students and social science for science students).

f. the contemporary tools like computer, its operating systems, order statistics, data analytics, computational mathematics, and familiarity with digital technologies.

Foundation Courses, sorted into those belonging to compulsory and elective fields of knowledge, are common for all students. There shall be several Courses in the compulsory as well as elective baskets. Courses from both the baskets shall be offered in two semesters with credits as decided by the university.

Compulsory Courses must be capable of developing multidisciplinary adaptability in students (mandatorily good acquaintance with the basics of cognate disciplines, and desirably of other sciences as well), ability of academic collaboration, and creativity (the faculty to innovate).

One set of Compulsory Courses shall provide competency in logical reasoning and critical thinking, while another set shall provide competence in academic writing and engaging with texts. Courses combining these are also possible. Language teachers or whoever competent shall design Compulsory Courses serving the purpose. Courses on Environment, Climate Change, Gender and Social Equity, History of Thought, Society, Economy and Indian Constitution are other areas that Compulsory Courses must address. Most of these Courses, primarily dependent on the availability of expertise, shall be, in the given set up, a matter of institutional choice.

Learning Outcomes of the Compulsory Courses must give weightage to the cognitive benefits of conceptual understanding, analysis (the ability to discern the underlying and fundamental, i.e. the faculty to discover), critical thinking (ability to evaluate) and communication skill i.e. the faculty to articulate in the knowledge-language (the language of technical terms, algorithms and algebraic equations).

Elective Courses are meant for developing competence, competency, tastes, skills, and perspectives of personal preference. They can be in fine arts, theatre, music, cinema, literature and so on. Courses in such domains shall contribute to perspective building in students and help them develop creative thinking. Learning Outcome of Elective Courses should be relating to the cognitive development of creativity and criticality.

Although learning is a continuum, education as a system needs to conceive the process in terms of stages/levels for assessing progress. This accounts for a taxonomy of learning with each taxon denoting a level/stage of cognition, without which structuring intelligible Courses, determining measurable outcomes, and making sensible assessments are difficult. Bloom's taxonomy as revised by Anderson, approved of by cognitive science, is globally in use and nationally mandated by the UGC.

Outcome Based Education is not a matter of choice anymore. Nevertheless, universities/teachers in the country can certainly draw insights from teaching/learning theories of their choice and use taxa at will, but without forgetting the constraint to co-exist and operate under UGC Regulations, graded accreditation by NAAC, and National Institutional Ranking Framework.

Every university may not have facilities for providing Foundation Courses in all areas highlighted above. Hence, the students shall be free to take their Elective Courses from the competent HEI of their choice including Open Online Courses recognised by the mother institution. Anyway, the basket of Elective Courses shall not be constrained by the availability of the University concerned.

Universities may not have Boards of Studies competent to design most of the Foundation Courses both compulsory as well as elective. This problem can be overcome through ad hoc Expert Committees the Vice Chancellors constitute.

III

Curriculum Components and Credits Pattern

Graduate Attributes:

The graduate attributes reflect the particular quality and feature or characteristics of an individual, including the knowledge, skills, attitudes and values that are expected to be acquired by a graduate through studies at the higher education institution (HEI) such as a college or university. The graduate attributes include capabilities that help strengthen one's abilities for widening current knowledge base and skills, gaining new knowledge and skills, undertaking future studies, performing well in a chosen career and playing a constructive role as a responsible citizen in the society. The graduate attributes define the characteristics of a student's university degree programme(s), and describe a set of characteristics/competencies that are transferable beyond the study of a particular subject area and programme contexts in which they have been developed. Graduate attributes are fostered through meaningful learning experiences made available through the curriculum, the total college/university experiences and a process of critical and reflective thinking. The learning outcomes-based curriculum framework is based on the premise that every student and graduate is unique. Each student or graduate has his/her own characteristics in terms of previous learning levels and experiences, life experiences, learning styles and approaches to future career-related actions. The quality, depth and breadth of the learning experiences made available to the students while at the higher education institutions help develop their characteristic attributes. The graduate attributes reflect both disciplinary knowledge and understanding, generic skills, including global competencies that all students in different academic fields of study should acquire/attain and demonstrate.

Some of the expected graduate attributes as expected to be developed by every graduate are listed in the table .Universities may add /elaborate on these as per their vision

Graduate attribute	Academic Level	Personal Level	Professional Level
General	Critical thinking Scientific thinking Intellectual rigour Research-related Skills Creativity and innovation	Cultural Competency Gender sensitivity	Life Long Learning Ethical Awareness Team work
Work ready	Problem-Solving Knowledgeable Information and Digital Literacy	Multicultural Competence Social Intelligence Communication Skills	Leadership Qualities Co-operativeness Team Readiness
Success full	Autonomous Innovative Insightful Reflective Thinking	Analytical Reasoning Self-directed Learning	

Flexibility for synthesizing degrees

The curriculum proposed here aims at synthesizing degrees. Synthesizing degree is now an international standard adopted by the universities all across the world. Kerala has a legacy of providing quality education to its pupils, in order to maintain the higher standards of such education the committee feels that the degree to be synthesized as per the choices of the individual learner. While synthesizing their degrees, there shall be no bar or restriction on the subjects/courses across the disciplines. The integral education shall be the part of foundational skills. By implementing the concept of integral education a paradigm shift from education's failure, to education's potentials through Learner Centric Pedagogy is expected.

Semester, course and credit design:

Academic credit

Academic credit - An academic credit in this entire framework is defined both in terms of student efforts and teacher's efforts. A course which include one hour of lecture or tutorial or minimum 2 hrs of lab work/practical work/field work per week is given one credit hour.

Accordingly a one credit course in a semester should be designed for 15 hrs. Lecture/tutorials+30 hrs. of learner engagement in terms course related activities such as seminars preparation, submitting assignments etc.

Semester wise credit calculation

- An academic year should consist of 200 working days
- One semester is defined as 90 working days and an academic year is divided into two semesters and an optional summer fast track semester.
- 10 working days in a semester can be used for extracurricular activities of students
- One semester consisting of 18 weeks with 5 working days per week.
- In each semester 15 days (3 week) should be kept aside for exams including internal examinations evaluation and other academic activities.
- The maximum available weeks for curriculum transactions should be fixed as 15 in each semester.
- Minimum of 6 teaching/tutorial hours could be made available for a day in a 5 day week so that total of 450 teaching hours will be available for each semester.
- Maximum Number of credits that a student can take per semester may be restricted to 30.
- Courses up to 25 credits could be designed compulsory for each programme in each semester with this available teaching hours for each semester.
- A student should get an option /choice for acquiring a maximum of 150 credits for a 6 Semester UG programme.
- A student should get an option /choice for acquiring a maximum of 200 credits for a 4 year (8 semester UG programme)

- In the broad-based curriculum, the core component, consisting of the major discipline and a minor/allied discipline/vocational discipline, contributes to 70% while the multidisciplinary component accounts for the remaining 30% of the credits
- A 4-year Degree with (Honors/Research) programme shall have minimum credit requirement of 177.
- A 3-year exit option (Bachelor's Degree) is given to a student completing 133 credits.
- The curriculum of a 4-year programme, in the years 1-3, shall consist of four major components with the credit distributions suggested in brackets for an exit at the end of the 3rd year. All multidisciplinary credits must be completed within the first three years.

i. Core disciplinary courses (50%)*
ii. Minor disciplinary courses including Vocational minor (20%)
iii. Multidisciplinary Foundation courses (6%)*
iv. Common Foundation Language courses including Language ability (24%)

*if a student take a Multidisciplinary foundation course from the same major subject the credit of the same may be counted against the total 50% of credits required for obtaining the major.

(For example if a student from+2 science group joined for BA political Science he may be allowed to take the Multidisciplinary foundation courses offered by the political science department. In that case he may require to earn only the remaining credits from the core disciplinary courses from the political science department. In all cases a minimum of 50% credits should be from the respective discipline to obtain a major in that discipline.)

- In programmes that are more multidisciplinary in nature, the Minor component may be between 25% and 35% and the Major component is 35% - 45%. The overall fraction of Major and Minor components shall however be 70%.
- A student may opt for a certain number of extra credits over and above the requirements for the award of a degree. The modalities for these must be

worked out at the University level – including academic, infrastructural and financial constraints.

- By standardizing the credit hour with the existing approved work load of the courses, new courses can be offered
- Minimum credit of one course should be 2 credit and the maximum credit should be 4
- Each faculty may offer a maximum of 16 credits per semester.
- For a four credit lecture course 60 hrs of lecture/tutorial class should be ensured as a mandatory requirement for the completion of that course.

Structure of curricular contents

Teaching should be seen as a composite activity that includes construction of curriculum, syllabi and learning materials as well as assessment and evaluation. The teacher who teaches should also be the one who designs the courses and develops syllabi based on curricula developed by the Universities. The teacher who teaches must also be the person who assesses and evaluates. Furthermore, there should be enough flexibility for the teachers to facilitate courses that address the current advancement of knowledge in different areas. Accordingly the universities should decentralize the course design, syllabus development and evaluation must to the colleges/departments.

The proposed FYUGP curriculum essentially consist of Three Broad Parts.

1) Foundation Component
2) Discipline Specific Pathway components (Major/Minor)
3) Discipline Specific Capstone Components

1. Foundation component

The foundation component of the FYUGP curriculum consists of a set of General courses and a set of Discipline Specific Courses. General Foundation courses are common for all students which can be grouped in to 4 major baskets such as Ability Enhancement courses(AEC), Skill enhancement Courses(SEC) ,Value addition

courses(VAC) ,Multi-disciplinary courses(MDC) . Discipline Specific Courses along with this the introductory level Discipline Specific Pathway courses both in Major and minor stream which are intended for students to gain an understanding and basic knowledge about that discipline. Discipline Specific foundation courses these courses generally would focus on foundational theories, concepts, perspectives, principles, methods, and procedures of critical thinking in order to provide a broad basis for taking up more advanced courses. The students may be advised to complete the required foundation level courses by third or fourth semester.

1. (a) General foundation courses:

General foundation courses can be grouped in to 4 major course baskets such as Ability Enhancement courses (AEC), Skill enhancement Courses (SEC), Value addition courses (VAC) ,Multi-disciplinary courses(MDC) A brief description of these course baskets are given below

(i) Ability Enhancement Courses (AEC)

These are the courses designed specifically to achieve competency in a Modern Indian Language (MIL) and in the English language with special emphasis on language and communication skills. The courses aim at enabling the students to acquire and demonstrate the core linguistic skills, including critical reading and expository and academic writing skills, they would also enable students to acquaint themselves with the cultural and intellectual heritage of the chosen MIL and English language

- **Implementation AEC**: Language board of studies should design at least two courses of 3 credits which will enhance the language and communication ability of the student. Similarly the English board of studies should design at least two courses on language ability enhancement and one introductory course. Apart from this English department may designed 4 advanced course on advanced academic writing, business writing, translation, communication etc suitable for the fourth year students for earning their mandatory language minor credit.

(ii) Multi-Disciplinary Courses (MDC)

These are the courses intended to broaden the intellectual experience and to build conceptual foundation about arts, science, commerce, language and Social sciences among students. All UG students are required to undergo 3 introductory-level MDC relating to any of the broad disciplines other than they studied or presently studying.

- **Implementation of MDC**: Each board of studies have to design one introductory course in respective subjects meant. The syllabus of introductory paper of a subject should aim to develop a coherent view of essential concepts, structures, and intellectual methods that characterize the subject. The learning outcome of this paper would be to instill broad understanding and an appreciation of the subject. This includes basic level courses from the basket of the following major disciplines, not limited to *Natural and Physical Sciences, Mathematics, Statistics, and Computer Applications,* Library, Information, and Media Sciences, *Commerce and Management, Humanities and Social Sciences, Drama and other performing arts.* All students have to take one course mandatory from the humanities and other two are optional. Student those who studied the respective subjects during their +2 are not allowed to take the MDC in that subject.

(iii) Skill Enhancement Courses (SEC)

Skills are psychomotor as well as cognitive. They are about the abilities that students develop to perform various tasks. The 4Cs – Creativity, Critical Thinking, Communication and Collaboration – are known as the 21st century skills, which are important for students to survive and work in any local or global workplace. So the focus of the knowledge component should be on encouraging the abilities to apply the knowledge in real world situations, enhancing the 4C skills, awareness and skills for using the most modern and relevant technology for change. Along with this the development of self-learning skills and lifelong learning skills are also important for the students to cope up with the ever changing and demanding work challenges

- **Implementation**: Each BOS should design a set of courses based on the training need analysis, discuss with the generic employers, alumni and industrial experts to identify the gaps and emerging trends. Based on this, suitable syllabus need to

be designed for each courses. According to the content and target group, the appropriate pedagogical methods should be adopted in the curriculum. Laboratory courses in Science schools, soft skill courses etc. can also be considered for this.

(iv) Value Added Courses (VAC):

These are the courses meant for the personality development and perspective building and developing self-awareness of a graduate student. These courses will help the students to identify themselves and their true feelings, thoughts, abilities and actions. Which will empower them to recognize their strengths and gives insights to overcome the challenges. As a result the learner will be able to develop confidence, right mindset and emotional intelligence. Some of the possible courses under this category could be self and identity, theatre, music sports and games, Indian Constitution, Indian Society and Economy, Environment and Climate Change, Gender and Social Equity, History of thought. NSS/NCC related activities, Diversity, and Inclusion, Ethics and Values, IT Skills Science, Technology and Society

Implementation: BOS should design these courses or similar courses. Students in Social Sciences, Humanities, and the Arts may be asked to take IT Skills courses mandatorily, while students in the Sciences may be asked to take courses under Gender, diversity, Inclusion and Ethics and values mandatorily.

2. Discipline Specific Pathway Components (Major/Minor)

The Discipline Specific pathways provides the learner with an opportunity to pursue in-depth study of a particular subject or discipline and to develop competency in that subject. This includes Major courses, Minor courses and optional courses.

(i) Minor Component: These are a group of courses in a particular subject or theme that complement the main area of study. The Discipline specific core or discipline specific elective courses offered by the respective subjects can fall under this category. The minor can be related or unrelated to the main focus of study (major)

Implementation: Each BOS shall identify certain courses or baskets of courses offered by other BOS towards minor course credits in the curriculum. Students will have the option to choose courses from disciplinary/interdisciplinary minors and skill-based courses relating to a chosen vocational education programme. Students who take a sufficient number of courses in a discipline or an interdisciplinary area of study other than the chosen major will qualify for a minor in that discipline or in the chosen interdisciplinary area of study. A student may declare the choice of the minor and vocational stream at the end of the second semester, after exploring various courses.

(ii) Major Component:

The major is the subject that is the main focus of study .By selecting a major the student would be provide with an opportunity to pursue in-depth study of a particular subject or discipline. Students may be allowed to change major within the broad discipline at the end of the second semester by giving her/him sufficient time to explore interdisciplinary courses during the first year. .Major component consists of primarily three types of Discipline specific core or discipline specific elective courses research/laboratory/fieldwork.

Implementation: Core and elective courses are identified by each BOS from the courses Offered by them or from other BOS. These courses are clearly indicated in the programme curriculum document along with their prerequisites.

3. Capstone level courses

The capstone level courses allow students to demonstrate their cumulative knowledge in their field of study. It plays a vital role in preparing students for the world of work with practical applications with professional knowledge and skills. At this stage the student will understand how to use appropriate and relevant knowledge to ideas and products. Capstone level courses includes topics on specialized/advanced level, internships, community engagement and services, vocational training, professional training or other kinds of work experience.

(i) Advanced major (Specialisation):

Advanced major courses includes courses with a focused area of study attached to a specific major which are optional in nature. These courses includes courses on research methodology as well. These courses will help the graduates to deepen their knowledge on a particular area of study with more focus and direction.

(ii) Summer Internship /Apprenticeship

This promotes the induction into actual work situations**.** All students will also undergo internships / Apprenticeships in a firm, industry, or organization or Training in labs with faculty and researchers in their own or other HEIs/research institutions during the summer term. Students will be provided with opportunities for internships with local industry, business organizations, health and allied areas, local governments (such as panchayats, municipalities), Parliament or elected representatives, media organizations, artists, crafts persons, and Agricultural sector. so that students may actively engage with the practical side of their learning and, as a by-product, further improve their employability.

(iii) Field-based learning/minor project: provide opportunities for students to understand the different socio-economic contexts. It will aim at giving students exposure to development-related issues in rural and urban settings.

(iv) **Community engagement and service** seeks to expose students to the socio-economic issues in society so that the theoretical learnings can be supplemented by actual life experiences to generate solutions to real-life problems

(iv) Vocational Education and Training

The ever-changing global scenario makes the world more competitive and requires high levels of lateral thinking and the spirit of entrepreneurship to cope up with the emerging challenges. Many a times, the defined skill sets that are being imparted to students today with the Programme Specific Objectives in our educational institutions become redundant sooner than later due to rapid technological advancements. No university curriculum can adequately cover all areas of importance or relevance. It is important for higher education institutions to supplement the curriculum to make

students better prepared to meet industry demands as well as develop their own interests and aptitudes

The vocational and skill enhancement courses are designed to provide necessary skills to increase the employability quotient and equipping the students with essential skills to succeed in life. The main objectives of the Skill enhancement and vocational courses are to provide students an understanding of the expectations of industry, to improve employability skills of students, to bridge the skill gaps and make students industry ready, to provide an opportunity to students to develop inter-disciplinary skills, to mould students as job providers rather than job seekers.

Implementation: The vocational Education and training should be designed for a minimum of 10 credits which will include a Specific job oriented additional Skill Enhancement course and job-specific internship/apprenticeship. Student may opt this either as a minor stream course or as an additional skills-enhancement course at the exit level to ensure, job-ready competencies required to enter the workforce. A Student who wishes to exit after three years may be advised to complete the vocational training. The vocational courses would involve Workshop/field -based activities requiring engagement of students in hands-on activities related to work/vocation or professional practice. The institutions may have to identify government accredited agencies for providing vocational training and internships.

(v) Research Project / Dissertation

Students choosing a 4-Year Bachelor's degree (Honours with Research) are required to take up research projects under the guidance of a faculty member. The students are expected to complete the Research Project in the eighth semester. The research outcomes of their project work may be published in peer-reviewed journals or may be presented in conferences /seminars or may be patented.

(VI) Other Activities This component will include participation in activities related to National Service Scheme (NCC), National Cadet Corps (NCC), adult education/literacy initiatives, mentoring school students, and other similar activities.

4. Remote/blended learning modes*:* Options should be made available for students to earn credit by completing quality-assured remote learning modes, including online programmes offered on the Study Webs of Active Learning for Young Aspiring Minds (SWAYAM: www.swayam.gov.in) or other online educational platform approved by the competent body from time to time. Students may opt to earn credits from such courses up to 12 credits required for the award of Degree. Students should be advised to opt for such online/MOOC courses which will have a comprehensive graded evaluation with proper grades and grade points. Apart from this students can be allowed to bring relevant credits from other recognized institutions as well as from distance mode of learning.

Optimum hours per week/Semester suitable for Different category of courses:

All discipline-specific courses (major or minor) may be of 4 hrs. per week or as appropriate.

Tutorials may be arranged for all discipline specific Major/Minor course of 1 hr per week Practical's may be allotted either 2 or 4 hours per week

All courses under the Multi-disciplinary, Ability Enhancement (language), and Skill Enhancement categories may be given of 3 hrs. per week Summer Internship/ Apprenticeship/ Community outreach activities, etc., may be of 60 hours of engagement.

The category wise % of different courses for 3 year and 4 year UG programmes were shown in the table below.

SI No	Categorization of Courses for all programmes	Minimum % requirement of courses	
		3 year UG	4 year UG
1	Major (Core)	50%	50%
2	Minor	20%	20%
3	Multi-disciplinary	7.5%	6%
4	Skill Enhancement Courses (SEC)	7.5%	6%
5	Ability Enhancement Courses (AEC)	6%	5%
6	Value Added Courses common for all UG	6%	4%
7	Summer Internship ,field based learning etc	3%	1%
8	Research Project / Dissertation		8%
	Total	100%	100%

- For each programmes the required level of knowledge, skill, Ability, attributes, capstone, vocational training that could be achieved by a graduate could be determined first.
- Based on that the number courses, hours of courses per week etc. could be determined with in the % limits shown in the table.
- Based on the hours per week required for each course the credit should be assigned.

Sl No	Categorization of Courses for all programmes	Minimum Number of courses required	
		3 year UG	4 year UG
1	Major (Core)	17	22
2	Minor	6	9
3	Multi-disciplinary	3	3
4	Skill Enhancement Courses (SEC)	3	3
5	Ability Enhancement Courses (AEC)	3	3
6	Value Added Courses common for all UG	4	4
7	Summer Internship ,field based learning etc	1	1
8	Research Project / Dissertation		1 (3 courses)
	Total papers	36	4(47)

Features of the Kerala State Higher Education Curriculum Framework

- This Framework is formulated with a student centric approach and provides maximum flexibility in terms of choice of disciplines of study and it allows to move from one discipline of study to another.
- This framework has the options for developing various academic pathways by creative combinations of disciplines of study.
- The students are getting a chance to determine his/her own semester-wise academic load and will be allowed to learn at his/her pace, to the extent possible.
- It increases the number of choices of courses available to students and the students are getting an opportunity to choose the courses of their interest from all disciplines.
- This Framework provides multidisciplinary and holistic education with emphasize on research, skill development and higher order thinking,
- The framework promote innovation and employability of the student.

- The framework offers flexibility for the students to move from one institution to another as per their choice.
- The framework offer the flexibility to switch to alternative modes of learning (offline, ODL, and online learning, and hybrid modes of learning).

Possible Programme pathway options available for the students

(a) 3-year UG Degree: Students who wish to exit after 3 years of a 4 year degree programme then he will be awarded UG Degree in the Major discipline after successful completion of three years, securing specific number of credits (133 or above) and satisfying the minimum course requirement as given in tables.

(b) 4-year UG Degree (Honours): A four-year UG Honours degree in the major discipline will be awarded to those who complete a four-year degree programme with the specific number of credits (177 or above) and have satisfied the minimum course requirement as given in tables. Honors students not undertaking research project will do 3 courses for 12 credits in lieu of a research project / Dissertation

(c) 4-year UG Degree (Honours with Research): Students who are highly motivated to opt research as their career can choose honours with research stream in the fourth year. The selection criteria for this stream can be as per the guidelines of UGC/respective universities. They should do a research project or dissertation under the guidance of a faculty member of the University/College. The research project/dissertation will be in the major discipline. The students who secure 177 credits, including 12 credits from a research project/dissertation, are awarded UG Degree (Honours with Research).

Infrastructure Requirement for 4-year UG Degree (Honours with Research): The Departments offering a 4-year UG Degree (Honours with Research) must have the required infrastructure such as the library, access to journals, computer lab and software, laboratory facilities to carry out experimental research work, and at least two permanent faculty members who are recognized as Ph.D. supervisors. The Departments already recognized for conducting the Ph.D. programme are eligible to offer a 4-year UG Degree (Honors with Research) without any further approval.

(d) UG Degree Programmes with Single Major: A student has to secure a minimum of 50% credits from the major discipline for the 3-year/4-year UG degree to be awarded a single major. They should also satisfying the minimum course requirement as given in table below

(e) UG Degree Programmes with Double Major: A student has to secure a minimum of 40% credits each from the first and second major discipline for the 3-year/4-year UG degree to be awarded a double major degree. They should satisfy the mandatory minimum course requirement as given in the table. Appropriate relaxation could be given for other courses.

(f) Interdisciplinary UG Programmes: These are the programme to be offered jointly by two or three specific disciplines: The credits for core courses shall be distributed among the constituent disciplines/subjects so as to get core competence in the interdisciplinary programme. Suitable programmes should be identified as per the requirements (like micro biology (where life science and physical science is involved), Nano technology (Physical, mathematical and life science could be involved), bio technology, econometrics, material science etc)

(g) Multidisciplinary UG Programmes: In the case of students pursuing a multidisciplinary programme of study, the credits to core courses will be distributed among the broad disciplines such as Life sciences, Physical Sciences, Mathematical and Computer Sciences, Data science, Social Sciences, Humanities, etc.

Note: In programmes that are more multidisciplinary in nature, the Minor component may be between 25% and 30% and the Major component is 40% - 45%. The overall fraction of Major and Minor components shall however be 70% (excluding the credits for internship). In the case of honours programme the total credits including project should be come to 70%.

Proposed Minimum Credit requirements for Different pathways

Course	Major stream (A)		Minor stream (B/C/B&C)			MDC	SEC	VAC	AEC	Intern	Project	online courses	Total Credit
	DSC	DSE	DSC/ DSE	DSC/DSE	DSC/DSE								
	For 3 year Exit												
Single major	72	8	12			9	9	9	12	2	0		133
MDC Major	40	28	12	12		9	9	9	12	2	0		133
Major with Minor	40	28	20*	4		9*	9*	9*	12	2*	0		133
Major with Voc Minor	40	28	20*	4		9*	9*	9*	12	2*	0		133
Double Major #	24	24 **	48**			9**	9**	9**	12	2**	0		133
	Honours For 4 year Exit												
Single major	80	12 (24)	24(12)			9	9	9	12	2	12	8	177
MDC Major	48	32	12	12	12	9	9	9	12	2	12	8	177
Major with Minor	48	32	32*	4		9*	9*	9*	12	2*	12	8	177
Major with Voc Minor	48	32	32*	4		9*	9*	9*	12	2*	12	8	177
Double Major #	52$		56&			9&	9&	9&	12	2&	12&	8&	177

*Those who opt for minor /vocational minor programmes within three years/four years have to do at least one MDC course, One SEC one or two VAC and an internship from their minor discipline in order to obtain 25% credits from those disciplines.

**Those who opt for double major have to obtain 54 credit each from respective disciplines, accordingly they have to do MDC,SEC,VAC and an internship courses from these disciplines to earn 12 credits .

For double major courses one of the major can be from vocational stream as well.

& those who opt for double major with honours programme has to obtain at least 71 credits from respective disciplines. Accordingly they have to earn 34 credits from their respective MDC, SEC,VAC and internship, project and online courses

Example:

UG Programme with Single Major

1. A student Joined for BSc Physics programme may chose a path way and could exit with a BSC with Physics Major if he/she could secure 80 credits in physics from a minimum of 18 Discipline specific core courses (DSC) and 2 Discipline Specific Elective Courses from Physics . He/she should also secure 12 credits from DSC/DSE approved minor disciplines such as Mathematics, Chemistry, Electronics, Computer Science, Statistics, Zoology, Botany, English etc of his/her choice. The rest of the credits he/she should obtained from MDC, SEC, AEC, VAC courses etc as shown in the table above.

2. A student Joined for BSc Physics programme may chose a path way and could exit with a BSC Physics major with Mathematic and Chemistry(or any other approved combinations) if he/she could secure 68 credits in physics from a minimum of 10 Discipline specific core courses (DSC) and 7 Discipline Specific Elective Courses from Physics . He/she should also secure 12 credits each from DSC/DSE from the selected minor disciplines Mathematics, Chemistry (or any other approved combination). The rest of the credits he/she should obtained from MDC, SEC, AEC, VAC courses etc. as shown in the table above

3. A student Joined for BSc Physics programme may chose a path way and could exit with a BSC with Physics Major with a Minor in Chemistry, Mathematics (or any other approved Minor) if he/she could secure 68 credits in physics from a minimum of 10 Discipline specific core courses (DSC) and 5 Discipline Specific Elective Courses from Physics . He/she should also secure 12 credits each from DSC/DSE from the selected minor disciplines Mathematics, Chemistry (or any other approved combination). The rest of the credits he/she

should obtained from MDC, SEC, AEC, VAC courses etc as shown in the table above. Out of which 14 credits should be from the courses offered by the minor department including internship.

4. A student Joined for BSc Physics programme may chose a path way and could exit with a BSC with Physics Major with a Minor in vocational stream. if he/she could secure 68 credits in physics from a minimum of 10 Discipline specific core courses (DSC) and 5 Discipline Specific Elective Courses from Physics. He/she should also secure 12 credits each from DSC/DSE from the selected minor disciplines Mathematics, Chemistry (or any other approved combination). The rest of the credits he/she should obtained from MDC, SEC, AEC, VAC courses etc as shown in the table above. Out of which 14 credits should be from the courses offered from the vocational stream including internship.
5. **UG Degree Programmes with Double Major:** A student has to secure a minimum of 36% credits each from the first and second major discipline for the 3-year/4-year UG degree to be awarded a double major degree out of which 14% of credits should be from common approved discipline specific electives (DSE) which are interdisciplinary or cross disciplinary in nature. They should satisfy the mandatory minimum course requirement as given in table above appropriate relaxation could be given for other courses.

Levels of Courses:

Academic road map for each programme has to be designed and for that the required courses shall be coded based on the learning outcomes, level of difficulty, and academic rigour. The coding structure is as follows:

0-99: *Pre-requisite courses:* *these are the* introductory courses which will be a pass or fail course with no credits. It will replace the existing informal way of offering bridge courses that are conducted in some of the colleges/ universities. Pre requisite courses may be designed and implemented for all programmes and courses as required. This courses are to be designed to provide the students with a solid foundation in the basic academic skills and knowledge that they need for the successful completion of that

programme or course. These courses may typically be useful for those students who wish to do major in subjects which they have not studied during their +2 programme and need extra preparation.

100-199: ***Foundation or introductory courses:*** these are intended for students to gain an understanding and basic knowledge about the subjects and to help them to decide the subject or discipline of interest. These courses may also be prerequisites for courses in the major subject. These courses generally would focus on foundational theories, concepts, perspectives, principles, methods, and procedures of critical thinking in order to provide a broad basis for taking up more advanced courses

200-299: ***Intermediate-level courses*** including subject-specific courses which intended to meet the credit requirements for minor or major areas of learning. These courses can be part of a major and can be pre-requisite courses for advanced-level major courses.

300-399: ***Higher-level courses:*** which are required for majoring in a disciplinary/ interdisciplinary area of study for the award of a degree.

400-499: ***Advanced courses:*** which would include lecture courses with practicum, seminar-based course, term papers, research methodology, advanced laboratory experiments/software training, research projects, hands-on-training, internship/apprenticeship projects at the undergraduate level or First year Post-graduate theoretical and practical courses.

500-599: Courses at first-year Master's degree level for a 2-year Master's degree programme

600-699: Courses for second-year of 2-year Master's or 1-year Master's degree programme

Semester wise distribution of curricular components:

The undergraduate programme seeks to equip students with the capacities in fields across arts, humanities, languages, natural sciences, and social sciences; an ethic of social engagement; soft skills such as complex problem solving, critical thinking, creative thinking, and communication skills, along with rigorous specialization in a chosen disciplinary or interdisciplinary major and minor(s).

Semesters 1 & 2: The students will undergo courses in 4 broad disciplines (major stream, 2 minor stream, and 2 broad disciplines (multidisciplinary category) to have basic knowledge not only in major areas but also in two other disciplines broadly grouped under Natural and Physical Sciences, Mathematics, Statistics and Computer Applications, Library, Information and Media Sciences, Commerce and Management, and Social Sciences. Apart from this they have to opt some courses like ability enhancement (AEC), Skill enhancement (SEC) and Value Addition Courses (VAC)

Change of Major: Students can opt for a change of major within the broad discipline (Natural and Physical Sciences, Mathematical, Statistics, and Computational Sciences, Library, Information and Media Sciences, Commerce and Management, and Humanities and Social Sciences) at the end of the first year.

Additional Seats: The HEIs may create 10% additional seats over and above the sanctioned strength to accommodate the request for a change of major. Any unfilled or vacant seats may be filled with those seeking a change of Major. Preference will be given to those who have got highest CGPA with no arrears in the first year.

Semesters 3 & 4: Students will choose courses of their interest in major and minor to build a career pathway of their choice. They also pursue courses to strengthen their language skills and other skill-augmenting courses and vocational training.

Semesters 5 & 6: Students will undergo higher level courses and related courses during the 5th and 6th semesters in order to gain in-depth knowledge in the major and also in the related disciplines through the minor stream. Students will also gain work-related skills through courses in vocational education. The programme structure will enable the students to gain sufficient knowledge and skills to meet the industry/society requirements

Semesters 7 & 8: During the 4th and final year, students will undertake advanced level courses in both major and minor streams to get a UG Degree (Honours). ***The students need to complete all the required minimum number of foundation, introductory, intermediate and higher level courses successfully and should earn 133 credits from the previous six semesters for taking this advanced level courses. This will be the mandatory pre requisite condition for the honours programme.***

Students choose a research component with courses relating to research methodology, advanced courses in theory and applied areas, and seminar presentations. Students may be permitted to carry out a research project or dissertation in another department of the same institution or another institution provided the required facilities are available.

Benchmarking of the Infrastructure facilities

Infrastructural facilities are essential for the successful implementation of any framework and for improving the quality of education. Some of the basic infrastructure requirements need to be ensured in all higher education are listed below.

Digital infrastructure: Each higher education institutions should ensure the implementation of a paperless office system with automatic learning management system which should include the automatic digital information processing of all teaching, learning examination and evaluation activities. Educational ERP/LMS must be implemented in all educational institutions and the examination systems should be fully computerized with automatic software based question paper generation, transmission and facilities for digitalization of the answer papers after examination on screen evaluation, the student should be able to download all their digitally signed certificates and grade cards. A convenient and completely secure digital academic depository solutions must be implemented There should be studio class rooms for online video classes and online video conferencing facilities in all institutions. The institutions should ensure Wi fi connectivity to all students and staff and should ensure the availability of online study materials and digital library facilities. Institutions should have class rooms of different size with comfortable seating arrangements suitable for seating capacities 150, 100, 50 etc. State of art laboratories with research facilities and computer centres with sufficient number of computers. The institution should be able to provide / arrange hostel facilities for students.

Special facilities to augment the Educational Services for Differently abled Persons: Differently-abled persons need special arrangements in the campus environment for their mobility and independent functioning. The architectural barriers that disabled persons find difficult for their day-today functioning are to be restructured/ removed. The universities and colleges urgently need to address accessibility related issues, and ensure that all existing structures as well as future

construction projects in their campuses are made disabled friendly. The HEIs should create special facilities such as ramps, rails and special toilets, and make other necessary changes to suit the special needs of differently-abled persons. Guidelines on accessibility laid out by the office of the Chief Commissioner of Disabilities are to be followed. Differently-abled persons require special aids and appliances for their daily functioning. The universities and colleges may also ensure the availability of special learning and assessment devices to help differently-abled students enrolled for higher education. Availability of devices such as computers with screen reading software, low-vision aids, and readers Braille suitable for visually challenged students, scanners, mobility devices, etc.

Teaching Environment:

The existing format of teaching learning requires radical changes. First and foremost, universities/colleges must focus on the student engagement as a hallmark so that more personalised learning occur in the universities and colleges. Personalization does not mean replacing teachers with technology and individualized study. The new university/college landscape must be a socially inspiring and safe environment where all students can learn the social skills that they will need in their lives. Personalised learning and social education lead to more specialization. Less importance should be given to the traditional class room based lecture method of teaching and more importance should be given for tutorial based and activity(practical) based teaching. Developing customized and activity based learning eventually leads to a situation where people can learn most of what is now taught in college through shared knowledge and competencies that are becoming the part of modern learning. Less teaching can actually lead to more student learning if the circumstances are right and the solutions are smart. It is also important to have a customized individual learning plans for each students as students are having alternate ways like media, internet, social network etc. to learn basic things and as a result, they are finding teaching in universities and colleges sometimes irrelevant.

Letter Grades and Grade Points

The Semester Grade Point Average (SGPA) is computed from the grades as a measure of the student's performance in a given semester. The SGPA is based on

the grades of the current term, while the Cumulative GPA (CGPA) is based on the grades in all courses taken after joining the programme of study.

The HEIs may also mention marks obtained in each course and a weighted average of marks based on marks obtained in all the semesters taken together for the benefit of students.

Letter Grade	Grade Point
O (outstanding)	10
A+ (Excellent)	9
A (Very good)	8
B+ (Good)	7
B (Above average)	6
C (Average)	5
P (Pass)	4
F (Fail)	0
Ab (Absent)	0

When students take audit courses, they may be given pass (P) or fail (F) grade without any credits.

Computation of SGPA and CGPA

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

i. The SGPA is the ratio of the sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.

SGPA (Si) = Σ(Ci x Gi) / ΣCi

Where Ci is the number of credits of the ith course and Gi is the grade point scored by the student in the ith course.

Example for Computation of SGPA

Semester	Course	Credit	Letter Grade	Grade point	Credit Point (Credit x Grade)
I	Course 1	3	A	8	3 X 8 = 24
I	Course 2	4	B+	7	4 X 7 = 28
I	Course 3	3	B	6	3 X 6 = 18
I	Course 4	3	O	10	3 X 10 = 30
I	Course 5	3	C	5	3 X 5 = 15

I	Course 6	4	B	6	4 X 6 = 24
		20			139
	SGPA				139/20=**6.95**

ii. The Cumulative Grade Point Average (CGPA) is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

CGPA = Σ(Ci x Si) / Σ Ci

Where Si is the SGPA of the ith semester and Ci is the total number of credits in that semester.

Example for Computation of CGPA

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6
Credit: 21 SGPA:6.9	Credit: 21 SGPA:7.8	Credit:22 SGPA:5.6	Credit: 24 SGPA:6.0	Credit: 23 SGPA: 6.3	Credit 22 SGPA 8.0
CGPA= 6.74 (21 x 6.9 + 21 x 7.8 + 22 x 5.6 + 24 x 6.0 + 23 x 6.3 + 22 x 8.0)/133					

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

Transcript (Format): Based on the above recommendations on Letter grades, grade points and SGPA and CCPA, the HEIs may issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.

Credit transfer and Academic Bank of credits:

The process of accumulating Credits over a period of time, leads to the idea of a 'Credit Bank' Credit Banking, when practiced would go a long way in facilitating credit transfers and learner mobility. Along with the implementation of this curriculum framework the students will have the right and provisions for the inter departmental, inter faculty and inter university credit transfers between the institutions which follow this framework. Each Board of Studies have to identify and notify a set of courses offered by other Board of Studies from which the credits can be transferred while framing the syllabus. Separate guidelines and a broad framework for credit transfer system should be developed for facilitating the students who wish to bring the credits

from outside this framework. An Inter University Credit Transfer and Accumulation System (IUCTAS) may be developed as a tool which will facilitate the students to move between higher educational institutes and universities to have their academic qualifications, which enhances the flexibility of study programmers for students.

Important Notes:

- Students who have already enrolled and are pursuing UG programme as per Choice Based Credit System (CBCS) are eligible to pursue 4-year undergraduate programme and the university concerned may provide bridge courses (including online courses) to enable them for transition to FYUGP
- The idea of flexible timings should be implemented for the students and teachers.
- The curriculum transaction time should be flexible from 8.30 am to 5 pm six days a week. Library and Laboratory facilities should be accessible to the students for at least three more hours after the regular transaction.
- Faculty can opt their convenient time. They should be present in the campus at least 5 days in a week, for minimum campus presence of 35 hrs per week.
- The students will get the support of the campus facilities for a minimum of 48 hrs in a week out of which maximum 22 to 25 hrs should be devoted for contact classes and the rest of the time can be devoted for other activities.
- A Board of Studies network (BoSN) to be represented by the chairpersons of BoS of respective subjects of all the universities shall be established.
- Board of studies network (BoSN) will recommend the way by which the academic road map and design of each programme and the required courses for the same. These courses shall be coded based on the learning outcomes, level of difficulty, and academic rigor. The same coding structure should be followed by all universities within the state.
- The work load of an assistant professor per academic year should be fixed as 32 credit hours. An academic year consists of two semesters and the summer fast track semester.
- A teacher can offer regular courses during the summer on a fast-track mode to enable students to do additional courses or complete backlogs in coursework or to those student who wish to exit faster

- The courses may be kept open for enrolment by students including the students from other HEIs who wish to clear back logs / earn extra credits.
- Each of the faculty members are permitted to design and offer at least one course in every semester from his/her own area of expertise which can be offered as a discipline specific elective course.
- The evaluation of the foundation level courses, introductory level courses, and intermediate level courses, practical courses etc should be done at the college level itself.

Examples for Semester wise course designs and distribution of courses and credits for Different pathways

Example 1 Graduate in Major A / Graduate with Honours in Major A

Semester	Discipline Specific courses Major + Minor		Multi-disciplinary Stream (MDC) (General Elective)	Ability Enhancement courses (language) (AEC)	Skill Enhancement courses /Internship /Dissertation (SEC) 3C	Common Value-Added Courses (VAC) 3 C	Total Credits
	DSC	DSE					
I	DSC(A)-1 (100) -4C DSC(B)-1 (100)-4C DSC(C)-1 (100)-4C		MDC-1 (3c)	AEC-1 3 C AEC-2 3C			21
II	DSC(A)-2 (100) -4C DSC(A)- 3 (100)-4C DSC(B/C)-2 (100)-4C		MDC-2 (3C)	AEC-3 3C AEC-4 3C			21
III	DSC(A)-4 DSC(A)-5 DSC(A)-6 DSC(A)-7		MDC-3		VAC-1		22
IV	DSC(A)-8 DSC(A)-9 DSC(A)-10 DSC(A-)-11		-	SEC-1 3C	- (Internship	VAC-2	24
V	DSC(A)-12		-	-	SEC-2	-	23

<table>
<tr><td rowspan="3"></td><td>DSC(A)-13</td><td rowspan="3">DSE-1</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td>DSC(A)-14</td></tr>
<tr><td>DSC(A)-15</td></tr>
<tr><td rowspan="3">VI</td><td>DSC(A)-16</td><td rowspan="3">DSE-2</td><td rowspan="3">-</td><td rowspan="3">-</td><td rowspan="3">SEC-3</td><td rowspan="3">VAC-3</td><td rowspan="3">22</td></tr>
<tr><td>DSC(A)-17</td></tr>
<tr><td>DSC(A)- 18</td></tr>
<tr><td></td><td colspan="6">Students who want to exit after 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 133credits</td><td>133</td></tr>
<tr><td rowspan="4">VII</td><td>DSC(A)-19</td><td>DSE-3</td><td rowspan="4">Mooc-1 4c</td><td rowspan="4">-</td><td rowspan="4">-</td><td rowspan="4"></td><td rowspan="4">24</td></tr>
<tr><td>DSC(A)-20</td><td>DSE*-4</td></tr>
<tr><td>DSC(A/B/C)-21*</td><td>DSE*-5</td></tr>
<tr><td>DSC(A/B/C)-22*</td><td></td></tr>
<tr><td rowspan="5">VIII</td><td rowspan="2"></td><td>DSE*-6</td><td rowspan="2">-
Mooc-2 4C</td><td rowspan="5"></td><td rowspan="5">(Research Project/ Dissertation) 12C</td><td rowspan="5"></td><td rowspan="5">20</td></tr>
<tr><td rowspan="3"></td></tr>
<tr><td rowspan="3">DSC(A/B/C)-23*</td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td colspan="6">Students will be awarded UG Degree (Honours) or UG (Honors) with Research in the relevant field
*any one either core or elective paper as per choice</td><td>177</td></tr>
</table>

For example if a student starts the programme by opting A as Physics B as Chemistry and C as Mathematics in the first semester and he/she wishes to do Physics single major at the end of first semester/second semester then he or she can start study more papers from next semester onwards. He /she may opt one more paper from Mathematics/Chemistry as per his/her choice in the second semester and third semester onwards he/she will be taking papers from the Physics discipline only. At the end of sixth semester he/she might have completed 17/18 discipline specific core courses and two discipline specific elective courses. For honours programme he /she have to complete 2 more discipline specific core course and one discipline specific elective course in Physics at the advanced level (level 400/500).

He /she is permitted to take 3 more advanced level discipline specific electives from Physics or three discipline specific core courses at the advanced level from Physics/Mathematics/Chemistry as per his/her choice

Example 2: Undergraduate Programme Multidisciplinary with MajorPathway Graduate in Major A with B and C: Graduate (honours) in Major A with B and C

Semester	Discipline Specific courses Major + Minor		Multi-disciplinary Stream (MDC) (General Elective)	Ability Enhancement courses (language) (AEC)	Skill Enhancement courses /Internship /Dissertation (SEC) 3C	Common Value-Added Courses (VAC) 3C	Total Credits
	DSC	DSE					
I	DSC(A)-1 (100) -4C DSC(B)-1 (100)-4C DSC(C)-1 (100)-4C		MDC-1 (3c)	AEC-1 3 C AEC-2 3C			21
II	DSC(A)-2 (100) -4C DSC(B)- 2 (100)-4C DSC(C)- 2 (100)-4C		MDC-2 (3C)	AEC-3 3C AEC-4 3C			21
III	DSC(A)-3 DSC(A)-4 DSC(B)-3 DSC(C)-3		MDC-3		VAC-1		22
IV	DSC(A)-5 DSC(A)-6 DSC(A)-7* DSC(A-)-8*		-	SEC-1 3C	- (Internship	VAC-2	24
V	DSC(A)-9 DSC(A)-10 DSC(A)-11* DSC(A)-12*	DSE-1	-	-	SEC-2	-	23
VI	DSC(A)-13 DSC(A)-14* DSC(A)-15*	DSE-2	-	-	SEC-3	VAC-3	22

	Students who want to exit after 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 133credits *instead of these papers elective papers may be opted						133
VII	DSC(A)-16 DSC(A)-17 DSC(A/B/C)-18* DSC(A/B/C)-19*	DSE-3 DSE(E)-4 DSE(E)-5	Mooc-1 4c	-	-		24
VIII	DSC(A/B/C)-20*	DSE(E)-6	- Mooc-2 4C		(Research Project/ Dissertation) 12C		20
	Students will be awarded UG Degree (Honours) or UG (Honors) with Research in the relevant field *any one either core or elective paper as per choice						177

Example 3: Undergraduate Programme (Major with a minor)

Pathway Graduate in Major A with minor (B/C/Vocational): Graduate (honours) in Major A with minor (B/C/Vocational)

Semester	Discipline Specific courses Major + Minor		Multi-disciplinary Stream (MDC) (General Elective)	Ability Enhancement courses (language) (AEC)	Skill Enhancement courses /Internship /Dissertation (SEC) 3C	Common Value-Added Courses (VAC) 3C	Total Credits
	DSC	DSE					
I	DSC(A)-1 (100) -4C DSC(B)-1 (100)-4C DSC(B)-2 (100)-4C		MDC-1 (3c)	AEC-1 3 C AEC-2 3C			21
II	DSC(A)-2		MDC-2	AEC-3			21

	(100) -4C DSC(B)- 3 (100)-4C DSC(B)- 4 (100)-4C		(3C)	3C AEC-4 3C			
III	DSC(A)-3 DSC(A)-4 DSC(B)-5 DSC(B)-6		MDC-3		VAC-1		22
IV	DSC(A)-5 DSC(A)-6 DSC(A)-7* DSC(A-)-8*		-	SEC-1 3C	- (Internship	VAC-2	24
V	DSC(A)-9 DSC(A)-10 DSC(A)-11* DSC(B)-7	DSE-1	-	-	SEC-2	-	23
VI	DSC(A)-12 DSC(A)-13* DSC(B)-8*	DSE-2	-	-	SEC-3	VAC-3	22
	Students who want to exit after 3-year UG programme will be awarded UG Degree in the relevant Discipline /Subject upon securing 133credits *instead of these papers elective papers may be opted						133
VII	DSC(A)-14 DSC(A)-15 DSC(A/B/C)-16* DSC(A/B/C)-17*	DSE DSE(E) DSE(E)	Mooc-1 4c	-	-		24
VIII	DSC(A/B/C)-18*	DSE(E)	- Mooc-2 4C		(Research Project/ Dissertation) 12C		20

	Students will be awarded UG Degree (Honours) or UG (Honors) with Research in the relevant field *any one either core or elective paper as per choice						177

Examples for Ability Enhancement Courses (AEC)

SI NO	Ability Enhancement Courses	Implementation/Description
1	AEC -1 English Language and communication	Ability enhancement courses are the courses designed to improve the Language ability of the students. The course should include 2 courses from English and 2 course from modern Indian language. Special emphasis on language and communication skills. • To enable the students to acquire and demonstrate the core linguistic skills, including critical reading and expository and academic writing skills • To develop the ability to participate/conduct discussion and debate. • To acquaint with the cultural and intellectual heritage of the chosen MIL and English language These are 3 credit courses and Respective English and Language board of studies should develop these courses.
2	AEC-2 Modern Indian Language and Communication	
3	AEC-3 English Critical Reading and academic writing skills	
4	AEC-4 Cultural and intellectual heritage in English Language	
5	AEC-5 Cultural and intellectual heritage in Modern Indian Language	
6	AEC-6 Critical Reading and Academic Writing Skills Modern Indian Language	

Examples for Value Added Course:

SI NO	Value Added Courses VAC
1	VAC-1 Environmental Studies To study the effects of environmental degradation, climate change and pollution • Effective waste management • Conservation of biological diversity • Management of biological resources • Forest and wildlife conservation • Sustainable development and living • Understanding of India's environment in its totality • A unit in the context of kerala
2	VAC-2 Understanding of India with an emphasis on Kerala To enable the students to acquire and demonstrate the knowledge and understanding of contemporary India and Kerala with its historical perspective • basic framework of the goals and policies of national development • constitutional obligations with special emphasis on constitutional values and fundamental rights and duties. • Understanding of India's freedom struggle and of the values and ideals that it represented. • Roles and responsibilities as effective citizens of a democratic society. • A unit in the context of Kerala
3	VAC-3 Kerala Model for development Health and Education, Land Reforms, Decentralized planning, Social security, Devolution of powers, Housing, Tourism, Women empowerment, Social welfare Scheme, Transformation to a knowledge based society
4	VAC-4 Digital Education An overview of Computer System • Basic Hardware & Software • Operating System • Word Processing, Spread Sheets and Presentation • Internet • e-Governance Services • Digital Financial Tools & Applications • Cyber Security
5	VAC-5 : Mathematical Thinking & Computational Analysis To focus primarily on the mathematical and statistical tools used to support the study of natural and social sciences. • To focus on the methodology used to analyse quantitative information to make decisions • • To enable students for defining a problem by means of numerical or geometrical representations. • Deducing inferences, formulating alternatives, and predicting cause and effect relationships. • Organizing a data sets to reveal patterns that suggest relationships.
6	VAC-6 Global Citizenship Education & Education for Sustainable Development Aware of and Understanding of global, economic, environmental and sustainable issues • Active promoters of more peaceful, tolerant, inclusive, secure, and sustainable societies. • Universal human values and responsible global citizenship values. • To instil integrity and values to follow ethical practices at work.
7	VAC-7 Community Engagement & Service (NSS/ NCC/ Adult Education) Courses requiring students to participate in field-based learning/project • Activities that would expose students to the socioeconomic issues so that the theoretical learnings can be supplemented by actual life experiences • To instil the desire and ability to participate in activities/services that are undertaken in collaboration with community members for promoting the wellbeing of the society, • Participation in National Services Scheme (NSS), National Cadet Corps (NCC), adult literacy/education programmes, mentoring school students etc

SI NO	Value Added Courses VAC
8	VAC-8 Constitutional Values and Fundamental Duties Socialism, Secularism, Democracy, Republic,Federelisem , Justice, Liberty, Equality, Unity and integrity of the Nation, The dignity of the individual,Fraternity ,Fundemental duties
9	VAC-9 Culture and Communication Intercultural communication skills are becoming perhaps more important than ever before in this time of an increasingly diverse workforce and extensive travel for business and leisure. Definitions and reasons for intercultural communication, barriers to successful intercultural communication, culture shock, intercultural ethics, and strategies for resolving ethical dilemmas within cross-cultural contexts.
10	VAC-10 Emotional Intelligence
11	VAC-11Ethics and Culture
12	VAC-12Financial Literacy
13	VAC-13Science and Society
14	VAC-14 Social and Emotional Learning

Examples for Multidisciplinary Courses

Students have to take 3 introductory-level courses relating to any of the broad disciplines given below. These courses are intended to broaden the intellectual experience and form a part of liberal arts and science education Students are not allowed to choose or repeat courses which they have already undergone at the higher secondary level (12th class) in the proposed major and minor stream under this category

SI NO	Course Area	Course Name
1	Natural and Physical Sciences group	Biology, Botany, Zoology, Biotechnology, Biochemistry, Chemistry, Physics, Biophysics, Astronomy and Astrophysics, Earth and Environmental Sciences
2	Mathematics, Statistics, and Computer Applications	The course may include training in programming software like Python among others and applications software like STATA, SPSS, Tally, etc
3	Library, Information, and Media Sciences group	Suggested courses under this disciplines, universities may add more courses to this basket journalism, mass media, and communication etc
4	Commerce and Management group	Suggested courses under this disciplines, universities may add more courses to this basket business management, accountancy, finance, financial institutions, fintech, etc

SI NO	Course Area	Course Name
5	Humanities and Social Sciences group	Anthropology, Communication and Media, Economics, History, Linguistics, Political Science, Psychology, Social Work, Sociology, Archaeology, History, Comparative Literature, Arts & Creative expressions Cognitive Science, Environmental Science, Gender Studies, Global Environment & Health, International Relations, Political Economy and Development, Sustainable Development, Women's and Gender Studies

Examples for Skill Enhancement courses (SEC)

SI No	Course Name	Broad description for syllabus
1	SEC-1Big Data Analysis	Understand the Big Data Platform and its Use cases, Apply analytics on Structured, Unstructured Data, Exposure to Data Analytics , Identify Big Data and its Business Implications.
2	SEC-2 Business communication	Business Cases and Presentations, Letters within the Organizations, Letters from Top Management, Circulars and Memos, Business Presentations to Customers and other stakeholders, presenting a Positive Image through Verbal and Non-verbal Cues, Preparing and Delivering the Presentations, Use of Audio visual Aids, Report Writing.
3	SEC-3 Communication in Everyday life	Barriers to communication, Perspectives in Communication, Elements of Communication , Communication Styles , Basic Listening Skills, Effective Written Communication, Interview Skills, Giving Presentations, Group Discussion.
4	SEC-4 Digital Marketing	Introduction to digital marketing, website planning and creation, Search engine optimization ,Search engine marketing, social media marketing, content marketing strategies, online reputation management, mobile marketing etc.
5	SEC-5 Creative writing	Students in Creative Writing will write poems, short stories, plays, news stories, comic strips, children's books, an autobiography and other types of writing that express creativity. Students will also study writing samples from professional writers as well as student writers to guide student progress. They may be introduced to the meaning and Significance of Creative Writing, different forms of creative writing and new trends in creative writing
6	SEC-6 E-Tourism	The e-tourism course addresses the evolutionary steps of the tourism sector through the use of web technologies and technological innovation in general. Introduction to E-Tourism, Use of Information Technology in Tourism acquired

Sl No	Course Name	Broad description for syllabus
		the necessary tools and knowledge to describe and understand the key aspects of the e-tourism concept, the application of technologies in the various productive sectors related to tourism and the revolution of the tourist experience. Students will be able to master concepts related to tourism supply and demand through digital technologies. understand and master the tools and channels of marketing and promotion of the tourist destination; understand and classify the revolutions of the tourism enterprise sector including new technologies and social networks ;understand and know how to direct the tourist offer through the study of the tourist's behaviour and profile through the digital traces left on the web; Regarding online/Mooc courses
7	SEC-7 Prospecting E-waste for sustainability	To understand scenario of E-waste, Understand key terms associated with E- waste, Imparting life skills about E waste management in routine daily life to minimize the hazards and to understand the regulations to contribute in effective management throughout the society, Indian and global scenario of e-Waste, Growth of Electrical and Electronics industry, E-waste generation, Composition of e-waste, Possible hazardous substances present in ewaste, Environmental and Health implications. Regulatory regime for e-waste , Historic methods of waste disposal, Emerging recycling and recovery technologies.
8	SEC-8 Public Speaking in English language and leader ship	A Practical /Tutorial based Course which will enable the students to Plan and prepare speeches that inform, persuade, or fulfil the needs of a special occasion. which may include Introductory Speech, Informative Speech, Persuasive Speech, Special Occasion Speech, Final Speech /summative speech
9	SEC-9 Visual Communication and photography	A Practical /Tutorial based Course: Visual Communication-definition & concept, Evolution of visual communication through films and other forms
10	SEC-10 Personality Development and communication	Barriers to Communication, Improving Communication Skills, Preparation of Promotional Material, Non-verbal communication, Body language, Postures and gestures, Value of time, Organizational body language, Importance of Listening, Emotional Intelligence. Working individually and in a team, Leadership skills, Leadership Lessons, Team work and Team building, Feedback, Feed forward Interpersonal skills – Delegation, Humour, Trust, Expectations, Values, Status, Compatibility and their role in building team – work Conflict Management – Types of conflicts, how to cope with conflict. etc

Sl No	Course Name	Broad description for syllabus
11	SEC-11 Political leadership and communication	Articulate a core understanding of political communications and its primary functions, Demonstrate an example of effective political communications, Develop a comprehensive strategic communications, examining historical and modern examples of powerful messaging across politics, government, and issue-based organizations
12	SEC-12Health and nutrition	Fundamentals of Nutrition, Introduction to Food Safety, Nutrition and Fitness, Maternal & Child Nutrition, Current Concerns in Public Health Nutrition
13	SEC-13 Graphics design and animation	Art and Visual Perception, Drawing for Animation, Photoshop for Designers, 3D Animation, Motion Graphics
14	SEC-14 Personal Financial Planning	Understanding Personal Finance, Achieving Personal Financial Success, Economy that Affects the Personal Financial Success, Making Financial Decisions, The Time Value of Money, Financial Values, Goals, and Strategies
15	SEC-15 Customer care and marketing	Negotiation Skills, Types of Negotiation, Negotiation Strategies, Selling skills – Selling to customers, Selling to Superiors Selling to peer groups, team mates and subordinates, Conceptual selling, Strategic selling, Selling skills – Body language

Examples for Courses for Self Learning /online Course

Sl No	**Course Name**	**Description**
	MOOC course Self learning	A committee shall be constituted by the KSHEC for identifying MOOCs or online courses offered by SWAYAM or similar online platforms recognized by the UGC and other competent bodies. The committee shall recommend a list of MOOCs or online courses suitable for respective programmes that may be taken up by students in a particular semester/year

Examples for Vocational training Courses

These are the optional courses for the students to engage in hands on activities related to work/vocation or professional practice. The course is based on work based activities. 30 hours of work based activities is required for getting one credit. 15 hours of out-of-class activities include preparation for the work, completing assignments, and independent reading and study The total learner engaged time for a one credit-hour vocational training activity would be 45 hours. These courses may be also arranged jointly by the government accredited/approved vocational training centers

Proposed list of vocational training courses

1. Agriculture 2. Computer Hardware/Software 3. Translation 4. Interior Designing 5. Naturopathy 6. Organic Farming 7. Insurance sector 8. Fashion Designing 9. Handicraft 10. Foreign Language 11. Tally 12. Mobile Technology 13. Computer Network Management 14. Web Designing 15. Tourism 16. Event Management 17. Nutrition and Dietetics 18. Office Management 19. Advertising design.

Task for all Board of Studies (BoS):

To prepare syllabus of ONE Introductory Paper of each Subject. The syllabus of introductory paper of a subject should aim to develop a coherent view of essential concepts, structures, and intellectual methods that characterize the subject. The learning outcome of this paper would be to instill broad understanding and an appreciation of the subject. (There will be no practical in the introductory paper)

Language Board of Studies: Two papers on MIL (language and communication)

English Board of Studies	: Papers on (Language and communication) Common Course
Social Science/Humanities	: Understanding India • Global Citizenship Education Health & Wellness, Yoga Education
Science Department	: Environmental Studies • Digital Education • Mathematical & Computational Analysis

Core Subject Board of Studies

- Identify 25 papers from their existing core/Complementary papers that can be offered as major papers.
- Identify 10 papers from the available electives/Specializations papers /PG papers which can be offered as advanced major subject.
- These papers need to be arranged from levels 3 -5 major papers from level 3 onwards can be allowed as minor papers for other students.

IV
Recommendations

The Curriculum Framework is formulated with the distinct understanding that it should be a document as much pedagogical as social, which visualises the extent of knowledge, domain specific skills, criticality and creativity the learner has to attain through Courses.

It also visualises the specific context in which the learner achieves her capabilities. While addressing the contemporary international and national context of knowledge, the Curriculum Framework has to address the regional historical and socio-economic relevance as well.

This Curriculum Framework comprises a core educational principle – that students should learn predominantly through doing, critical search and issue-based enquiries, rather than by passively receiving the accepted knowledge.

To Universities

To take all the necessary preparations for the implementation of Shyam B Menon Commission Recommendations and the entailing Curriculum Framework with effect from 2023-24.

Implement the semester system in its true spirit with prominence for credits, rather than fixed duration, so that there can be variable lengths/durations for programmes; possibility for students to return to a programme after a break, within a stipulated time; courses and programmes made contemporary with a focus on critical thinking and innovation.

Decentralisation of the higher education system with curriculum broadly set by the university, and syllabi determined by teachers in colleges with provisions for regular revisions and updating of the syllabi in colleges and reported to the Board of Studies of the university; more elective courses that reflect the specialisations and interest of the teachers and students, factoring in the employment/professional potential in each discipline.

A system of course clusters and a minimum requirement of courses from each cluster so that students are encouraged to elect courses from other disciplines; a cross-listing of courses so that students are encouraged to take courses of their interest from other departments or programmes; flexible timings of classes to accommodate more class hours to enable more elective courses across departments or programmes.

Knowledge at many points is being counted as a mere articulation of the understanding concept. Since the thrust is to enhance the capability of a student to create new knowledge, the curriculum ensures flexibility to design Courses that enable to access knowledge from multiple disciplines.

Students are introduced to the concept of Philosophy, Social Psychology and many other fields in a single Course itself, which would bridge the gap between classroom-based teaching and community-based service learning and also should bridge the gap between learning rough printed text and other media.

Crossing all these boundaries offers opportunities to explore the complexity of the world and society. The curriculum should help to develop more democratic classrooms. It should promote the co-creation of knowledge where the students and teachers should be able to work collaboratively with one another.

In this context, a liberal approach has to be the basis of undergraduate education in all fields and disciplines at the undergraduate level, including professional education.

Undergraduate curriculum needs to be focused on creativity and innovation, critical thinking and higher-order thinking capacities, problem-solving abilities, teamwork, communication skills, more in-depth learning and mastery of curricula across fields.

The proposed curriculum framework endeavours to empower the students and help them in their pursuit of achieving overall excellence.

The proposed Four-year flexible and multidisciplinary undergraduate programmes are a fundamental transformation of the current undergraduate education and intend to replace the conventional undergraduate programmes of universities in the State.

Outcome Based Education (OBE) practices are to be used to design the curriculum. It is proposed to develop Graduate Attributes at the appropriate level which will act as a common denominator for curriculum across universities. The curriculum shall focus on critical thinking and problem-solving.

Universities have to provide the required expertise to the faculty members for effective curriculum transactions.

Equivalency and other eligibility issues of the new programmes with the conventional programmes should also be taken care of.

To Students

The programmes designed shall empower graduates as expert problem solvers using their disciplinary knowledge and collaborating in multi-disciplinary teams.

Higher education institutions intend to impact education and skill communicate with the vision of transforming the state into a knowledge economy.

There is need to generate adequate employment schemes/ opportunities to resolve the unemployment of the educated youth. This calls for restructuring the economic base of our state by strengthening the natural and human resource endowments.

Promote translation of new or existing knowledge into a new product, new process, a new form of organization or a new marketing method.

Incessant innovation needs to be made at all levels for the rapid growth of our state. More Startups need to be encouraged to transform the products coming from innovation promotion schemes into commercial ventures.

All this calls for restructuring of the higher education sector in Kerala. As part of this, the approach to teaching and research needs a paradigm shift and pave the way to transform our state into a knowledge-based economy.

To create a transformative educational experience for students focused on deep disciplinary knowledge; problem-solving; leadership, communication, interpersonal skills; and health and well-being.

Offer broad and balanced academic programmes that are mutually reinforcing and emphasize high-quality and creative instruction at the undergraduate level.

Generate new knowledge through a broad array of scholarly, research and creative endeavours, which provide a foundation for dealing with the immediate and long-term needs of the state.

Achieve leadership in each discipline, strengthen interdisciplinary studies, and pioneer new fields of learning.

Maintain a level of excellence and standards in all programmes that will give them, national and international significance.

To Teachers

To make a meaningful difference in our higher educational institutions the role of teachers is crucial. The teachers should be ready to revisit what and how they teach.

Teachers must get to know their learners better and they must be ready to change their roles from being faculty who is the sage on the stage to the designers of higher education who will craft significant, purposeful, enjoyable and relevant learning experiences for their students.

Teachers must inculcate the attitude of being the designers of the ‘university/college life of their students as well. So that the students can take on the world with confidence and bring about much-needed change.

Design thinking is an attitude which helps in finding creative solutions to problems. To date, the focus of education has been on the transfer of content and knowledge bytes. The focus has never really been learner-centric.

Using Design Thinking for curriculum creation is a game changer. The journey is all about moving from knowledge transfer to outcome-based and student-centred education.

In this system the teachers are expected to ensure that individual creativity, co-creativity, an ecosystem of learning and learning for development are encouraged and nurtured.

Conscious efforts to develop cognitive and non-cognitive problem-solving skills among the learners shall be part of the curriculum.

Getting students to enrol on the new pathway of courses

Acceptance of this new curricular approaches over the existing system. Ability to keep the New Curriculum in pace with knowledge and technology changes.

To the Government

The workload of teachers must be rationalised and not treated mechanically. Instead of the present system of counting mechanically just the teaching hours, it is necessary to take into account the hours spent for research guidance and independent research also

All the different functions and responsibilities implied in the new Curriculum Framework must be factored in.

Without deviating from the UGC norms that fix the workload of teachers as a minimum of forty hours a week for thirty working weeks in an academic year, the following stipulations have been made:

Evaluations are done primarily by the teacher who teaches the course, with adequate checks and balances, and grievance redressal facilities to ensure fairness. A change in the current system of mechanically calculating a department's workload in terms of the present fixed quota of 16 hours of work per teacher; Introduction of a system of "workload cushion", which leaves 10-20 per cent of each teacher's workload free to teach elective courses. Further, there should be appointments for more teachers.

In addition, the possibility of teaching elective courses can be factored in by providing each department with an extra "workload cushion" of 10-20 per cent of the total workload (depending on the size of the department) as a buffer.

Language teachers are permitted to offer 4-8 Elective Courses in order to protect them from the workload shortage due to the removal of the present mandatory status as first/second language.

The existing restriction about the minimum number of students for the Course is to be removed.

Further, the total teaching hours shall be exactly as the UGC stipulates and tutorial hours for continuous monitoring and evaluation of students' learning level will come under the teaching workload.

Require the universities to implement the Curriculum Framework from 2023-24.

To KSHEC

To advise universities to move fast the bodies statutorily ordained to take the necessary institutional policy decisions for implementing the higher education reforms recommended by the Commission with effect from 2023-24.

To urge the Vice Chancellors to move the Syndicate and the Academic Council to adopt decisions necessary for implementing the higher education Curriculum Framework with effect from 2023-24

To urge the Vice Chancellors to invite experts to complement the Boards of studies to frame the Foundation Courses and manage the content in alignment with the Guidelines in the Curriculum Framework.

To equip the faculty for the effective discharge of their transformed roles and functions through orientation programmes and hands-on trainings.

To provide the Boards of Studies training in Educational Theory and Practice necessary for determining objectives, writing Learning Outcomes, designing Courses, managing contents, planning effective learning experiences including the use of technology, and deciding methods of assessing the progress of learning.

To mobilise learning material and strengthen the open-source repositories for the teachers as well as students.

To accelerate the digital enablement activities, which equip colleges and universities in turning the institutional governance, teaching and learning into the ICT ecosystem.

To conscientise students in their rights, privileges, advantages and prospects opened up through the nationally and globally available student friendly opportunities, resources, avenues and platforms, which the new Curriculum Framework encourages to utilise.

To train them in the art and craft of maximising their capabilities through self-learning by depending on open source knowledge repositories.

Appendices

Appendix -I

Social and Historical Framework of Higher Education Curriculum
Dr. K.N.Ganesh

Any curriculum document is not only a pedagogical document but also a social document. The document visualizes the extent of knowledge, practical skills, the innovative and creative abilities to be achieved by the learner in a given course design. It also tries to outline the specific context in which the learner achieves her capabilities which may vary according to space and time. Even when we try to formulate a curriculum according to international requirements and global knowledge scenarios, it has to be grounded in the historical context in which the curriculum is to be implemented.

Higher Education in Kerala

The emergence of Higher education in Kerala had been within the British colonial context. The colonial state and subsidiary states like Travancore and Cochin required persons who received modern education to handle their administration, implement civil and criminal law, become teachers , doctors, organise public works including transport, communication and run business. The objective of forming a set of middle class functionaries was emphasized by Lord Curzon when he implemented the University reforms.

The first colleges in Kerala were opened by the Government and Christian Missionaries. A University Education Committee was constituted by Travancore Government in 1923, which recommended the establishment of a University in the State. The Travancore University was established in 1937, which came to have its own academic Departments, as per the Curzon reforms.

The emphasis on Higher Education shifted after Indian independence. India required a substantial number of intellectuals and functionaries to build a new nation, and Dr. Radhakrishnan Committee provided the foundations for what Nehru called 'Science, Technology and Adventure of Ideas. The education framework also incorporated within it the parameters introduced by the Indian constitution, such as citizen's rights, democracy, social justice and minority rights. A number of Universities and Colleges

appeared all over India, and a reasonable share was established in Kerala also, including Medical and Engineering Colleges. The University of Travancore was reorganised as Kerala University in 1957. After a decade ,University of Calicut was established specifically to address the educational backwardness of Malabar region. The number of colleges in Kerala leapfrogged after the introduction 10+2system of general education and the introduction if +2 as Pre degree in Colleges from 1964.This was a period when major changes were taking place in Kerala Society. With the introduction of land reforms, a number of tenant cultivators received permanent rights over their land and a number of settlers received occupancy rights over their homestead. The growth of public sector industries and government services also resulted in recruitment of a number of trained personnel. Children of labourers and tenant cultivators, including Dalits and Adivasis began to enter education on a large scale . Their entry and retention was abetted by introduction of free and compulsory education in schools and all promotion scheme, which also enhanced the possibility of their entry into higher education. Such a possibility also was instrumental in the upward mobility of sections of the downtrodden people. By the end of 1970sa large number of them began entering the colleges, which resulted in the doubling of preferred batches, enhancement of seats for degree education and allocation of more courses and colleges in Kerala. Thus, the academic elitism of the colonial period was giving way to a more inclusive system of education during the post-independence era. The university reforms of 1968 ensured that this system would be more democratic, with adequate representation of teachers and students in administration and a more transparent form. However, the economic development in Kerala did not keep pace with the growth in education. Although an educated workforce was being created they could not be absorbed fully in industry, agriculture or in services. Those entering higher education sought middle class employment, which could not be provided to all. A number of the workforce sought employment in other parts of India or abroad, a number finding work in the newly developing Gulf Emirates.

This mismatch between education and employment resulted in general disenchantment with the type of school and higher education, and demand arose for reforms in education, or the founding of new education institutions that will cater to the emerging demand for gainful middle class employment. With the introduction of the new education policy under the Rajiv Gandhi Government during 1986, and

setting up of new central apex bodies such as CBSE, AICTE, IMC, NCVT and NCTE the shift to new education institutions originally supported by the middle classes began to make an impact.

This shift became a general trend during the 1990s when the Government of India began introducing the neo-liberal economic reforms. The opening up of the global labour market and privatisation created new employment opportunities for the workforce in Kerala, and the demand arose for the opening of new institutions and courses that catered to the work needs. There was emphasis on technology. commerce and management courses. There was hue and cry about learners seeking education outside Kerala and the necessity for starting educational institutions here. The policy of granting no objection certificates to such self financing institutions was adopted. Within a decade, such institutions had an exponential growth and about 80%of the total number of higher education institutions in Kerala became self financing.

The growth of the new set of institutions was saddled with another set of problems, both institutional and social. Although the new institutions were required to be formally affiliated to a University, the regulations regarding access, pedagogy, appointment of teachers and fee structure were not to be applied to them, and this resulted in a number of litigations, with the courts coming out in favour of the new institutions. The Government of Kerala introduced a legislation for bringing these institutions under a semblance of social accountability during 2009, but the crucial elements of the legislation were rendered inoperative through judicial intervention. The refusal of the Government of India to enforce appropriate rules and regulations to enforce democracy and social justice also added to the problem of accountability. It is true that the new educational institutions have been to provide access to a number of students and thus cater to the increasing demand for higher education. But there is no evidence that they have been instrumental in enhancing the quality of education, bringing it to the levels required by the current social needs. As a result, those who require quality education continue to flock towards premier institutions in India or abroad.

The need to build a new Kerala

The transition to a neo-liberal economic framework at the national level has introduced new possibilities, as well as new stresses and strains on Kerala society. The new possibilities include access to new technologies such as ICT, AI. Big Data , Quantum encrypting that are related to 'knowledge capital', biotechnology, tourism and new commodity chains. The liquid cash flow that has been the result of overseas returns has facilitated major finance markets and consumer economy, facilitating expenditure in building complexes, malls, convention centres, joints for partying and enjoyment, resorts and home stays and so on. At the same time, basic industries and agriculture and major public sector amenities still struggle for survival and put additional burden on large sections of population , particularly the downtrodden. Large sections of the population are unable to survive without adequate state support. The flow of cash has shown tendencies of a skewed distribution, privileging the already rich and going against the poor. It is not surprising that even sections of the downtrodden classes are viewing education as the means of ensuring their upward social mobility and demand even better education institutions.

The preference for English medium institutions shown even by the downtrodden is the result of such a demand. The stresses and strains on the society became manifest during the past few years when the state was hit by two successive floods and then by a long bout of COVID pandemic. The downtrodden people living in ecologically fragile zones subject to landslides and large scale inundation were affected the most by floods, but the floods did not spare the urban population on the banks of Periyar and Pamba also. It was the sturdiness and skill of the labourers particularly the coastal fishers that saved the lives of hundreds affected by floods. The impact of the pandemic cut across all the conventional boundaries of social divisions. It also demonstrated the impact of social divisions in another form in the education sector. When online learning became the only option for keeping the education sector alive, the stresses on the population lacking technological access became exposed. Universalisation of digital literacy became a matter of priority for the Government.

It was in this context that the perspective for building a new Kerala was proposed. It was clear that any revival of an economy in the present context would require a technologically capable workforce with optimal knowledge and skills that would have

international standards, and with a definite social perspective that would address the well being of the people, equity, social justice and with a commitment to scientific temper, secularism and democracy. The development of such a workforce is possible only when a thorough reorganization of the existing higher education framework is attempted. The reorganization does not imply that the existing framework has become redundant and will have to be replaced. It simply means that elements of the present education that can assist the achievement of the above perspective will have to be retained , but others that can further this perspective will have to be incorporated.

People centered knowledge society

The following subjective and objective factors are significant here. Kerala has achieved near universal enrolment in the school education and majority of them are retained up to the higher secondary level! According to the UGC estimates 43%of the relevant age group population are enrolled in higher education. If one includes out migrations also then the number may go above50%. Shyam B Menon committee report has recommended that Kerala should achieve GER of 75% of the relevant age group population by 2036, which would imply near universal enrolment in higher education also. This would also mean that all learners , irrespective of social divisions and other handicaps, should be able to acquire knowledge and skills equivalent to world standards in their chosen fields of study. We should aim at a people centered knowledge society in our curriculum design for higher education.

The following objective factors also will have to be taken into consideration. The NEP 2020promulgated by the Government of India and the subsequent stipulations by the UGC on higher education curriculum have introduced meritocratic criteria on higher education combined with commercial goals and ideological emphasis on Indian culture and tradition. This implies that meritorious students, that is those acquiring more than 75%of the marks in the requisite examinations. Courses related to research, innovation, management and others are ko to be provided with skills that would enable them to join the workforce as required by an Industry. All students would be provided with foundation courses related to linguistic, computational and other abilities, social values and a commitment to Indian culture and tradition. Curricular format on the basis of these stipulations have already been circulated. Any curriculum framework devised for higher education will have to take into account these

instructions by the Government of India. More importantly ,the GOI has already circulated a model course design with allocation of credits, which is expected to be followed. Any curriculum design adopted by a specific region such as the Kerala State , or a University functioning within the state will have to also consider the specificities of the education development of the state while discussing the general framework. Kerala has made its achievements in education not only as a result of concrete state intervention but also as a democratic process in which all sectors of society have participated. Majority of the education institutions of the State, with the exception of the recent self-financing colleges have been the result of this democratic process. This implies a social need assessment that would be the basis for the demand for new courses or institutions , which would be met by a social institution or the Government. Thus any new institution or a new resource would require the assessment of social needs and also the capabilities that the society has in meeting these needs.

The social need has already been broadly stated. It implies the acquisition of capabilities of science, technology, human and social knowledge, creative, performative ,aesthetic and kinesthetic ability, their practical as well as innovative skills, and ability to produce new knowledge and skills whenever required. These capabilities will have to be absorbed in industrial and agricultural production, public, private, cooperative or social utilities and services,and all other forms of satisfaction of human needs, social, cultural, aesthetic, kinesthetic or personal. Since we live in society where the information on all the requisite knowledge and skills are accessible by means of the ICT, which can be potentially accessed by all human beings, the role of an institution of learning would be to provide a congenial learning environment that would enable all learners to acquire the requisite knowledge and skills in a chosen area within a stipulated time interval.

The choice or place of the employment selection of the learner cannot be determined by an education institution. If such a position is adopted, the institution would be transformed into aplacement agency, that would also provide the necessary skills. The education institutions of Kerala have so far concentrated on the construction of knowledge and skills, enhancement of the capabilities of the learner to find employment or meet the challenges of life as one deems fit.

It is this democratic nature of education Institutions that has encouraged students from diverse social backgrounds to enter education institutions. It is because of the same reason that collegiate education has spread to nearly all localities , with the possible exception of some parts of Western Ghats. It is the democratic character of higher education institutions, their functional autonomy in the selection of their knowledge areas and the autonomy of the learner to choose their knowledge area and employment, irrespective of class, caste, religion or gender that have to be preserved.

However, huge gaps exist between the capabilities of the present day learner in our institutions and the optimum knowledge or skill requirements expected from learners undergoing a similar programme elsewhere in the world. It is not only the social divisions, discrimination or injustice meted out to the learner that is the major culprit, but the way in which we design our curriculum and organise our teaching learning schedules. In the contemporary world where some learners may have multiple accesses of learning ,which another set of students may lack, it will not be proper to assume uniform standards among a set of learners, as is usually done in lectures or seminars, but to adopt interactive teaching learning processes where the teacher becomes more a facilitator, guide and often a co-learner. Thus the interactive, tutorial sessions with learners, assignment of tasks and providing facilities for them to be carried out, will have the same level of importance as the lectures or seminars. This is an area where the research, investigative and innovative experience of the teacher , rather than her acumen in oratory and organised speech delivery comes to play a major role. Since the learning process through experiment, observation, investigation, study and actual physical or mental labour comes to play the significant role, it becomes necessary for institutions to work 24×7 hours per week as far as the learners are concerned. It also becomes important that the knowledge constructed and the skills acquired becomes truly reciprocal. The learner acquires the particular knowledge area both in theory and practice, so that the distinction between pure science and pure technology disappears in the process of knowledge production.

It is in this sense that twinning, blended learning, and transfer of credits from other Universities become relevant. The objective is to develop a scientifically and technologically capable group of social persons who are contributing to the

multifarious tasks of social and economic development of Kerala. Such tasks will be social, economic, scientific technological,

administrative, cultural, aesthetic, political or physical. The present neoliberal worldview tries to organise the entire social tasks under the one-dimensional perspective of the market. Our forms of knowledge, skills and technologies have not always corresponded to needs of the market ,but to satisfy human requirements. The market forces have simply tried to make use of them for their profit. The objective of education is the production of capabilities the humans would utilise in ways that they consider as fit, which will definitely include production for the market. But it is unscientific and undemocratic to surrender the autonomy of learners to the whims of the market alone.

Hence. Online courses, blended learning, twinning and transfer of credits should be based on the optimum capabilities that the learner would like to acquire in given knowledge area, along with all the skills and capabilities , including performative, aesthetic and kinesthetic. They should not include such courses that have an immediate market value alone. For example, a language course should not be stuffed with half a dozen functional language courses, unless the knowledge area requires the study of a requisite number of languages, such as Linguistics or Comparative literature. A student of nursing has to learn nursing and not a course in Japanese to work in Japan. Blending with online courses will have to be based not on the basis of some absolute criteria of proportionality, but on the requirements of the knowledge area. Credits can be transferred on courses that contribute to the knowledge area, and enhances the capabilities the learner, and not on the basis of the ranking of the University that offers the course. Twinning can be done only on the basis of requirements of knowledge production and the external institution should not be allowed to browbeat it's way into the curriculum. Similarly, the present technologies of AI, machine learning ,block chains and encrypting definitely provide modes of gathering data and knowledge production, but how they are to be integrated into the learning process will depend on the knowledge area itself and the capabilities required to be developed.

This cannot be left to some agency providing the technology but to the learners and teachers themselves. There are the important principles of equity and social justice ,

which will be ignored by the market forces. The industry cannot absorb or are not interested in absorbing all the learners with the requisite capability into their fold. They will always pick and choose their recruits , and also intervene in the curriculum formation in such a way as to design a course that fulfils their requirements. Their intervention in skill training programmes such as ASAP has been with the same objective .If we aim at a near universal enrolment into higher education, then capability building cannot be left to the priorities of the industry. It has to aim at building the material life of the entire age group population on the basis of the existing knowledge, technologies and skills, which cut across the entire social divisions and boundaries of caste, religion, gender or ethnicity.

This will imply diversified options related to skills, technologies or professions within the same knowledge area, provided the knowledge acquired is scientifically verifiable and accepted acknowledge the world over. Equity and social justice in knowledge implies equivalent opportunities provided to every innovation or practice for scientific verification and their incorporation into the knowledge area once they are verified and established by detailed scientific enquiry.

The universalisation of higher education implies the universalisation of higher knowledge among the entire population at a future date. This is when scientific processes of enquiry and acquisition of knowledge would be part of the material life and consciousness of the entire population of the state. This is what we call as the people centered knowledge society. This is not a process through which some sections of the population find gainful employment at the global labour market and others are left to struggle for their livelihood. It is true that some persons will do it, and they have done it before also. It is only when the common labouring masses find the means to acquire contemporary science, technology and human knowledge in their multiple forms and build their material life using their capabilities in diverse ways that we can talk of Kerala becoming a knowledge society. The present curriculum reforms in higher education will have to be carried out from this perspective.

Appendix -II

CURRICULUM REFORM

(Chapter IV - Report of the Commission for Reforms in Higher Education in Kerala -2022)

Learning is the core function of education, and teaching is to nurture and facilitate it. In that sense, teaching should be seen as a composite activity that also includes construction of curriculum, syllabi and learning materials as well as assessment and evaluation. The teacher who teaches should also be the one who designs the courses and develops syllabi based on curricula developed collectively. The teacher who teaches must also be the person who assesses and evaluates. Furthermore, there should be enough flexibility to facilitate courses that address the current advancement of knowledge in different areas.

Decentralisation to the colleges

To achieve all of this, course design, syllabus development and evaluation must be decentralised to the colleges. However, we must think of a stage-wise progression towards this. The Commission recommends the following.

1. **Implement the semester system in its true spirit** with:

- prominence for **credits**, rather than fixed duration, so that there can be variable lengths/durations for programmes;
- possibility for students to **return** to a programme after a break, within a stipulated time;
- courses and programmes made **contemporary** with focus on critical thinking and innovation.

2. **Decentralisation of the higher education system** with curriculum broadly set by the university, and syllabi determined by teachers in colleges with provisions for:

- **regular revisions and updating of the syllabi** in colleges, and reported to the Board of Studies of the university;
- **more elective courses** that reflect the specialisations and interest of the teachers and students, factoring in the employment/professional potential in each discipline;

- a system of **course clusters** and a minimum requirement of courses from each cluster so that students are encouraged to elect courses from other disciplines;
- a **cross-listing of courses** so that students are encouraged to take courses of their interest from other departments or programmes;
- **flexible timings** of classes to accommodate more class hours to enable more elective courses across departments or programmes; and
- **evaluations done primarily by the teacher** who teaches the course, with adequate checks and balances, and grievance redressal facilities to ensure fairness.
- a **change** in the current system of mechanically calculating a department's **workload** in terms of the present fixed quota of 16 hours of work per teacher;
- the introduction of a system of **"workload cushion"**, which leaves 10-20 per cent of each teacher's workload free to take up elective courses; and
- the **appointment of more teachers** to create a critical mass of faculty and specialisations.

Workload Cushion

The workload of teachers must be rationalised and not treated mechanically; instead of the present system of counting just the teaching hours, hours spent for research guidance and independent research must be factored in. In addition, the possibility of teaching elective courses can be factored in by each department being provided with an extra "workload cushion" of 10-20 per cent of the total workload (depending on size of the department) as a buffer. For instance, in a department that must teach 160 hours weekly, the total number of teachers required is calculated now as: 160/16 = 10. However, with the "workload cushion" of 10-20 per cent being factored in, the total workload will come to be in the range of 176-192, with 16-32 hours (time for four to eight 4-credit elective courses) being earmarked for elective courses to be offered by individual faculty. Effectively, this will mean that the same department will need 176-192/16 i.e., 11/12 teachers, with nearly 4-8 additional elective courses being offered to students.

3. Provisions for credit transfer and credit sharing that shall:

- enable the possibility of **choosing courses** from other universities/institutions in the online mode; and
- initiate a **common/shared bank of credits** for UG/PG courses through the KSHEC. To facilitate all the above, the Commission recommends instituting **capacity building programmes** for curriculum development, course design, syllabus construction and evaluation to be organised under the aegis of the KSHEC to enable teachers to deepen and widen their competence in these areas critically significant to their practice as teachers.

The pillars of curriculum reform in the report: A summary

The Commission recommends that in the initial phase, provision should be set aside for developing and initiating **ten innovative programmes/courses** across sciences, social sciences, humanities, and transdisciplinary areas **in about fifty colleges and university departments**. These should be proposed on **a five-year project mode** with in-built provision for appointment of teachers at the same level of compensation as regular teachers. An expert team should review the programmes/courses after two successive batches of students have graduated and decide on the continuance of these programmes/courses.

The curriculum reforms that the Commission recommends envisages lateral exits and movements from one programme to another. While the number of such exits are limited keeping in mind the feasibility in implementation, it is recommended that students should be given semester-wise transcripts giving credits for every course or any other curricular component (such as internship or research project) successfully completed.

Undergraduate curriculum reform

Curriculum revision must be a continuous and dynamic process. The present juncture is good time for a structural reform of undergraduate curricula, since it forms the foundation for any enduring reforms in higher education.

More than two-thirds of the students in the higher education system are enrolled for undergraduate programmes. For most of them, this is a terminal programme. Consequently, a major impact of higher education is primarily hinged on what these young people take away from it. This parameter becomes a criterion in any assessment of quality in higher education. This makes it necessary that we **strengthen undergraduate programmes** with curricula that can equip students with the **knowledge base, intellectual abilities, a worldview, flexible skill sets and the basic expertise** that will make them effective citizens in a knowledge society as well as offer them multiple employment options.

Undergraduate studies should ideally lay the foundation for the development of broad intellectual skills and other competences that enable transfer and application in a wide range of practice. The disciplinary training at the undergraduate level is (as the word 'discipline' connotes) is more to develop structures of thought, inquiry, exploration, expression, attitudes, sensibilities, habits, and abilities associated with teamwork, than to commit to memory a large array of information, often in a disconnected manner.

We recommend a **comprehensive reform in undergraduate curriculum from 2023-24**, the design and development of which must begin in 2022-23. We present below a broad structure for the undergraduate programme and a timetable associated with its launch in 2023. Adopting the 4-year undergraduate programme will also bring Indian education at par with the offerings of universities abroad. There must be a separate financial allocation to facilitate this transformation.

We recommend a curriculum structure that enables a smooth transition from what is currently in practice to what the nation-wide higher education grid is in the process of adopting. On the one hand, this is meant to avoid any disruption or discontinuity during the transition phase in terms of sudden and jerky structural changes. On the other hand, it is designed to enable mobility of students seeking further education to other parts of India and abroad and for those who would like to enrol in higher education in Kerala.

We recommend a **four-year structure** for the undergraduate programme with **a single lateral exit option** at the end of the third year. It implies that the present

institutional structure of 3+2 does not have to be transformed drastically and suddenly. Transition to a new structure could be done in stages. There is always an advantage to trying the efficacy of a model in a limited context as a pilot. Based on the evidence that emerges from the pilot, mid-course corrections may be incorporated before launching the curriculum comprehensively.

5 We emphasise that this recommendation of the Commission is not the same as in the NEP 2020, where exits are envisaged at the end of *every* academic year. In contrast, we are suggesting a scheme with a *single lateral exit* option.

One essential feature of the new curriculum structure is the **foundation** component and **flexible alternative pathways** that provide for basic training in a combination of disciplines. It also implies an option for the subset of students who want to get into the world of work or to branch out into other areas of knowledge and practice, for which an **exit after three years** of undergraduate studies with a **capstone** component is proposed. This single exit option makes it possible for the existing structure of the three-year undergraduate programme to be subsumed under the proposed four-year structure.

The present and proposed curriculum structures for colleges and universities

Note: This depiction is not applicable for professional programmes, where four-year programmes are already functional. These programmes, however, may adopt ideas based on the above model within the parameters of the regulations of their respective statutory bodies. For the other subset of students who may want to go into further education at the postgraduate and research levels building on the discipline(s) they have been trained in, a **fourth year of the undergraduate studies integrated with the first year of the postgraduate studies** is what we propose. For some, the fourth year could be vertically integrated with a postgraduate programme, in which case it should focus on advanced conceptual and experiential learning in their discipline(s) and on developing research skills. For those who may want to go for interdisciplinary and transdisciplinary training beyond their undergraduate studies, the fourth year could be an opportunity for field immersion, internship, training in entrepreneurship and/or doing a research project.

The **foundation** component of the undergraduate curriculum should be common for all students with baskets of courses, some compulsory, and some elective. The foundation component should have courses with a credit equivalent of about one semester staggered over the first two years with baskets of courses on basic competences (logic and reasoning, academic writing, engaging with texts, design thinking), personality development ("self and identity", theatre, music) and perspective building (Indian Constitution, Indian Society and Economy, Environment and Climate Change, Gender and Social Equity, History of Thought). The foundation module is also meant to give time for the fresh-out-of-school students to develop a clearer sense of their own aptitudes and interests, get a general overview of the various streams of specialisation available in the programme, and make up their minds about what combinations of courses they want to pursue.

The **pathways** could be in terms of **major-minor options** with complementary disciplines like Literature and Psychology, Law and Politics, Economics and Business, Physics and Economics, Life Sciences and Physics, Economics and Data Sciences and so on for a three-year model. The above combinations can also be offered as **dual major** programmes for those students who choose to stay the course for all four years of the programme.

Alternatively, **tripos options** within the four-year model can offer combinations of disciplines such as Economics, Statistics and Physics, Life Sciences, Physics and Mathematics, Law, Economics and Business, Literature, Psychology and Theatre, Life Sciences, Physics and Data Sciences and so on.

As is suggested above, the students must have an option to pursue interesting and unconventional combinations of courses drawn from different disciplinary areas, like the sciences and the social sciences/humanities. The undergraduate programme structure must have the built-in flexibility to allow students to exercise these options as they progress through the programme, say by the end of the third or the fourth semester. The above listing is merely suggestive. There is a need to decide at the institutional level (university and college) on the offer of combinations of courses based on the strengths of individual institutions and the specific contextual needs.

The **capstone** should ideally be in the fifth and/or sixth semester and should have a basket of experiential learning credits equivalent to at least half of one semester. This curricular component is essentially to ensure that the graduating standards are fully met at the time of lateral exit after three years. This will bring a closure for those who are opting not to go on in the programme into their fourth year. Apart from tying the loose ends in the disciplinary training, the capstone must contain experiential learning opportunities associated with employability and entrepreneurship including some field exposure and, if possible, a short internship.

Among the various aspects of the curriculum reforms that are proposed by this Commission, there are some that are in alignment with, and some that deviate from, the recommendations of the National Education Policy (NEP) 2020. The sense of the Commission is that Kerala's higher education apparatus should be pragmatic in making use of suitable opportunities available within an enabling policy environment that emerges in the country from time to time. This includes the case of the implementation of NEP 2020. Our focus in this report, particularly, is the realisation of the goal of a people-centred knowledge society as conceptualised by this Commission.

Towards an implementation strategy

As was said earlier, one option is for the new curriculum structure to be piloted in a limited number of colleges in the first year and only based on modifications after that need the programme be offered state-wide.

If in principle the government accepts the above broad curriculum framework, our recommendation then will be to take the implementation process through the following steps:

Step 1: The Government through a due process has the proposed curricular framework examined under the auspices of the KSHEC. Based on the outcome of these deliberations in the KSHEC, it may promulgate the broad curricular structure.

Step 2a: Based on the broad curricular structure promulgated by the Government, the universities then take it through due process involving their Academic Council and adopt the broad structure with modifications, if any.

Step 2b: Based on the broad curricular structure promulgated by the Government, the universities then take it through due process involving Boards of Studies and the Academic Council. The output may be a detailed curriculum framework specifying long lists of courses with course structures to be included under the various baskets in the foundation component.

Step 2c: The universities again through due process as in step 2a formulate alternative pathways in terms of combinations of subjects to be offered along with long lists of courses for each pathway.

Step 2d: The universities through due process as in step 2a come up with long lists of courses/activities for the capstone that goes with the exit option at the end of the third year.

Step 2e: The universities through due process as in step 2a decide on long lists of courses and activities for the fourth-year component keeping in mind the nature of each pathway.

Step 2f: Parallel to 2d and in close coordination with it, the university departments through due process formulate curricula and course structures for a master's-Ph.D. integrated programme into which those graduating after four years of undergraduate programme can have lateral entry into the second year.

Step 3: The colleges through their own due process at the departmental and the institutional levels select courses from the long lists prescribed by the university and add some of their own as provided for in the curricular structure and work out the syllabi for individual courses.

The immediate task will be to have the broad curriculum structure to be promulgated by the Government and the adoption of the same with modification by the universities.

Subsequently, the priority will be to complete all preparations at the university and college levels for the first year and to begin the preparations for the second year i.e., on the foundation baskets of courses and the initial courses for the various pathways.

Capacity building

Parallel to this, there should be an entire package of capacity building programmes on design and development of curriculum, course structures, teaching-learning material and assessment and evaluation. We recommend that this should be at the state level under the auspices of the KSHEC. A critical mass of teachers in the system should go through the first set of capacity building modules within a limited time frame of about a year. Having said that, these modules will have to be constantly updated and should constitute the continuing professional development programme. Considering the limited timeframe and the large numbers involved, it will be appropriate to go for a multi-mode and multi-media approach, bringing in, if needed, the Open and Distance Learning System. While face-to-face workshops could be organised for experiential aspects of capacity building, online options could be explored for theoretical expositions and for ongoing and continuing support. It will be ideal if these programmes are suitably credited and be counted against certification.

Strategically, the development and conduct of these capacity building programmes will follow a cascade model of training with a limited number of Key Resource Persons (KRP) and larger numbers of Master Trainers (MT). The KRPs will need to be drawn from all over the country and abroad, and their engagement will be largely towards the initial phase of the programme. However, it will be ideal if the MTs are drawn from the system, either from those in service or those who have retired. The pool of MTs will have to be maintained and replenished so that they will serve as resources for the continuing professional development programme.

The development of the training modules, training of MTs and the conduct of the first cycle of capacity building workshops will need to be pursued along the following steps:

Step A: Creation of structures and provision of resources to KSHEC for this purpose.
Step B: Identification of Key Resource Persons (KRP)

Step C: Conducting a series of Workshops involving KRPs to prepare training modules.

Step D: Identifying Master Trainers (MT) from various disciplinary areas.

Step E: Conducting a series of Training of Trainers Workshops.

Step F: Conducting capacity building courses, workshops, and programmes in a multi-mode format.

Timeline

The entire operation to oversee the implementation of the curriculum reform initiative needs to be vested in the KSHEC. Similarly, the development and the conduct of the Capacity Building programme also will be under the aegis of the KSHEC. A monitoring cell will need to be created at the KSHEC with an in-built coordination system with counterpart structures in universities.

If the new curriculum is to be implemented with effect from 2023-24, the timetable depicted in Table 7 needs to be followed. (Page No. 50 of the Report)

Note on Postgraduate curriculum reform

Simultaneous to reforms in undergraduate curriculum, the postgraduate and research programmes must be strengthened. We recommend the exploration of more **flexible and innovative course structures**, such as research-oriented post graduate programmes in university departments; integrated five-year bachelor's-master's programmes; integrated master's-doctoral programmes, joint degree programmes among universities; dual-degree programmes; skill-enhancing degree programmes that can ensure employment; internships; value-added courses through collaboration with industry; media and publishers; introduction of courses in entrepreneurship; and possibility of spending a semester abroad or in another Indian university. **Double degree** and **joint degree** programme involve intensive collaboration between different universities, and can afford students more access to resources, professors, and opportunities than they would have in a single programme. A joint degree is a single degree programme where the same curriculum is pursued in two different universities (with only one university awarding the degree), whereas a double degree programme involves coordination between two different higher education institutions, in which the students enrol in two distinct programmes, one at each institution.

As the colleges move into the three/four-year model of undergraduate studies, there could be two corollaries. One, colleges offering **two-year master's programme will continue** to offer these, in a manner that will have cross listing of courses between the fourth-year undergraduate programme and the first-year master's programme. Two, university departments may simultaneously move into an **integrated master's-Ph.D. programme model**, which will largely admit those who have completed the four-year undergraduate degree***.***

This will enable students exiting after three years of undergraduate programme to access a two-year master's programme in colleges, while those who complete the four-year programme may be encouraged to access the master's-Ph.D. integrated programmes offered by the university departments. In the updated framework that we have devised, the master's degree can either be offered as

- a stand-alone two-year degree (primarily in colleges); or
- a part of an integrated degree with Ph.D. (primarily in universities).

At the same time, there are different implications for colleges and for university departments in these reforms.

For colleges

The structure of the master's programmes at colleges, that is, as stand-alone two-year programmes, will remain unchanged from now. However, the curriculum will need to be reconceptualised with special focus on applications and employability. For those students who exit after three years of the bachelor's programme and would want to pursue a master's programme, they can do so by seeking admission in the stand-alone two-year master's programme in their college or any other college.

For universities

University departments will move to the model of an integrated master's-Ph.D. programme of a minimum of five years with dissertation.

- Those who exit after three years of bachelor's programme can get admitted to the first year of the master's programme.
- Those who have completed four years of under-graduation, can get entry into the second year of the master's programme.
- The curriculum needs drastic reconceptualization to ensure vertical integration and alignment both with the fourth year of the undergraduate programme to the second year of the master's programme and the third year of undergraduate programme with the first year of the master's programme.
- The course contents of the fourth year of a bachelor's programme and other curricular experiences should be comparable and aligned with that of the first year of a master's programme. We visualise the possibility of common/combined classes for some of the courses involving the fourth year of bachelor's programme and the first year of master's programme, wherever both the bachelor's and master's programmes are offered by the same college.
- The second year of coursework in a master's programme will have a research orientation in the integrated master's-Ph.D. programme, with vertical integration and alignment with the pre-Ph.D. course work, the latter having provisions for

specialisation in the areas of interest, as well as in research methodology, fieldwork, and internship.

- Students may choose to exit the programme at the end of the 2nd year of this integrated programme with a master's degree.

A subset of colleges with requisite facilities and faculty resources may also be encouraged to offer a five-year integrated bachelor's-master's programme.

The Commission recommends that measures such as the adoption of master's dissertations, research internship arrangements, and the offering of as many kinds of elective courses be paid special attention to both in the two-year master's programme at colleges as well as the four-integrated master's-Ph.D. programme at university departments.

Doctoral programmes

Ph.D. students constitute a very important focus group for the promotion of a research culture in our universities, as this formative period in an academic's life is not only a period in which students acquire crucial research skills to express original thoughts and pursue independent explorations, but also one in which they must be trained as teachers who can communicate and share knowledge with other students. It is incumbent upon universities to ensure that this crucial period is both one which fosters independence and confidence in Ph.D. students, as well as imparts rigorous training in research as well as other aspects of academic life. Accordingly, the Commission suggests that the following measures be adopted in all higher education institutions where Ph.D. research is pursued.

1. *Kerala State Research Fellowships.* The Commission recommends the institution of **a non-NET fellowship for all research scholars** in universities and colleges at a minimum level of Rs 15,000 per month, plus a contingency fund. The maximum tenure that this fellowship can be held is six years, provided that the tenure is uninterrupted.

2. *Chief Minister's Research Fellowships*. **One hundred fellowships** should be introduced similar to and in parity with the UGC's JRF/SRF and of five years' duration, to be awarded on the basis of merit assessed through an examination.

3. *Conference travel fund*. The Commission recommends the creation of a special Conference Travel Fund for research scholars, to be managed by the KSHEC, to encourage the mobility of Ph.D. students while enrolled in the Ph.D. programmes. These shall take the form of travel and registration fee grants for participation in summer/winter schools, workshops, and conferences.

4. *Research exchange*. Universities must be encouraged to enter into agreements with other institutions in both India and abroad to fund mutual **exchange visits** of Ph.D. students between their institutions for short research stays, to foster academic collaboration.

5. *Easing of research rules and regulations*. It has become apparent from our meetings with Ph.D. scholars that there are many archaic regulations and stipulations still retained by universities that are completely inimical to research. Conditions such as the requirement of giving the full tile of the thesis at the very beginning (what is the purpose in research if the final title is already decided at the very start, the Commission cannot help but wonder) and that it can be changed only once during the period of research and that too on payment of a fee; disciplinary/departmental restrictions on areas of research and the availing of supervisors; restrictions and lack of support for field work; these are only some of the issues that indicate a clerical logic at work in academic regulations. Even further, the stipulation of confidentiality of examiners, a sorry vestige of the colonial education system, and the outdated systems of communicating with examiners create inordinate delays in the evaluation of dissertations. Considering all this, the Commission recommends a **rationalisation of the research regulations** in all universities, to bring in flexibility, mobility, speedy action, and ease of doing research. The Commission suggests that the KSHEC formulate a set of common research regulations, in consultation with institutions, research supervisors and especially research students.

6. *Graduate workshops and conferences*. Higher education institutions should also earmark a section of their research funding for the organisation of **graduate student workshops** to equip research scholars with essential skills of writing, research methodology and software, as well as for researchers' conferences, on an annual basis.

7. *Centres for Academic Writing*. For research students, acquisition of the skills of academic expression is of paramount importance. This important component of a student's training requires far more than basic competence in written expression and involves such skills as understanding how to read intensively, summarise, plan, and create texts in the academic register, all of which require sustained training during a student's term. The Commission therefore proposes that two or three well-staffed **Centres for Academic Writing** be established under the aegis of the KSHEC, which will conceptualise and develop a menu of courses that can be opted for by different ranks of students in higher education institutions. Initially, these Centres can be operational in a project mode, i.e., for five years and will proffer services such as the following.

   • Web resources and workshops/courses directed at training students in different programmes (undergraduate, postgraduate, and Ph.D.) in academic expression.

   • Specific training modules in **thesis writing, conference abstract writing, journal article writing,** in addition to **remedial language courses**.

8. *Teaching Assistant Programme*. Since Ph.D. scholars have evidently opted for an academic career, it is imperative that they are provided with valuable teaching and academic experience during their research time. The Commission strongly recommends that universities should take initiative in involving Ph.D. scholars in pedagogical practice through a **Teaching Assistant (TA) Programme** at the departmental level, so that all scholars in receipt of a fellowship (either non-NET or JRF/SRF) get an opportunity to serve as a TA for a course taught by a faculty member of the university for a minimum of two semesters (and a maximum of 4 semesters). The duties of a teaching assistant shall include the following:

- Lectures, tutorials, leading classroom discussions, pre-lecture preparation, and review sessions, under the guidance of a teacher in charge of the course;
- Evaluation of student seminars, assignments, examinations, and tests under the supervision of the teacher in charge of the course;
- Assistance to postgraduate students in their final dissertation and draft correction;
- Remedial teaching, if required;
- Assistance to the department in the organisation and conduct of seminars, workshops, lectures, and other academic activities.

It should be noted that TA work assigned to a Ph.D. scholar shall not exceed five hours per week and must not be assigned to students doing coursework and in the final stages of their doctoral work. Further, all TAs should be issued official experience certificates. Care must be taken to ensure that the TA system is run strictly professionally and ethically.

9. *Accountability and self-evaluation*. An important aspect of training students in research is to build a culture of accountability and (self-)evaluation of progress. The Commission recommends that all higher education institutions enrolling students for supervision maintain the following **standards of evaluating** student progress:

a) **Research Advisory Committees** should record full details of student progress during the Ph.D. work from the end of the 3rd year onwards, rather than merely recording students' progress as satisfactory/unsatisfactory. Higher education institutions should develop a proforma in this connection, to maintain records of fieldwork/experimental work completed, research presentations made, and draft papers/chapters presented.

b) **The duration of a Ph.D.** shall be a maximum of six years from the date of registration. Registration for the 5th and 6th year of the programme will require rigorous evaluation by the RAC, which must provide a proper assessment of the work done so far (experiments/fieldwork/chapters completed) and what remains as

incomplete/pending. The RAC must also provide an assessment of the duration needed for the completion of the Ph.D. work.

c) **Deregistration**: If a student fails to meet the RAC's benchmark of the Ph.D. at the end of the 4th year or chooses/needs to take a long leave of absence (to avail of research exchange fellowship or to take up short-term/long-term employment), (s)he should be allowed the option of deregistering from the programme for a period of up to two years. Deregistration shall only be granted to students who have completed the minimum residency period specified for Ph.D. students (currently three years), and whose applications for deregistration are recommended by the RAC. Maternity leave, which is separately provided for by the UGC regulations, shall not require deregistration.

Applications for re-registration must be similarly endorsed by the RAC, which must clearly assess the pending work that remains to be completed, including pending field work, experimental work and writing of chapters of the dissertation, and certify the duration needed for the completion of the Ph.D. work.

Common entrance tests

The Commission has been presented with opinions that favour a system of common entrance tests for university admissions at all levels. It is argued that this will facilitate bright students from outside Kerala to pursue higher education in the State and would bring about uniformity in the criteria for admitting students. However, the Commission has also been presented with serious reservations about this proposal. Thus, it is argued that such a system of common entrance tests will present a logistical nightmare for the administration; will restrict opportunities for students from Kerala since public universities in other States are unlikely to reciprocate the gesture; and will unfavourably affect chances for students from underprivileged backgrounds in Kerala. Further, common entrance tests in many subjects, particularly based on objective questions, may not be robust enough to assess analytical skills, critical thinking, and ability to express.

On balance, the Commission perceives that while more uniformity in the selection procedures may be useful, thrusting a uniform system of entrance tests on all

universities at all levels is tantamount to violating the autonomy of universities to decide their own selection processes. The Commission, after due deliberation, also concludes that the matter of a common entrance test is best left to the universities and colleges to decide in exercise of their autonomy. Hence, we shall make three broad suggestions for the consideration of the Government: (a) the KSHEC may work with the universities to ensure a broad uniformity of selection procedures for students at all levels; (b) two or more universities may be encouraged to voluntarily cluster themselves and conduct common tests for selected courses; and (c) any common examination shall strictly exclude undergraduate programmes and may be confined to postgraduate programmes and above. This issue may be periodically revisited and discussed.

Appendix -III

Foundation Courses in Social Sciences

Foundation Courses in Social Sciences for the Undergraduates have to be designed with the General Guidelines in mind. (Foundation Courses shall be made up of the relevant knowledge drawn from different social sciences as a combination in order to provide insights into issues of contemporary life. These Courses must be appropriate for self-equipping students to see knowledge in life-related contexts. Hence, the challenge before designing the Foundation Course is how to meaningfully organise and render socially useful components of different disciplines as interconnected. Courses must enable undergraduates in Social Sciences to become knowledgeable, competent and accomplished citizens influenced by ethics and social concerns)

Compulsory Courses in social sciences must help the students understand how social sciences like economics, psychology, sociology, anthropology, archaeology, history, and geography, defined as independent disciplines, are related to one another.

A Compulsory Course introducing the core (definition, meaning, nature, scope, concepts, theories, methodologies and tools) of the array of social sciences and their intersections is indispensable.

This Compulsory Course is indispensable because it helps students understand what is common amongst social sciences, where they differ, and how they converge in interface studies such as culture, identity, education, race, caste, class, media, gender, sexuality, demography, management, criminology and so on.

Elective Courses in Social Sciences shall be designed in the interface fields of knowledge, preferably combined with basic computational statistics and data analytics. Ideally speaking choices must be endless or least limited to any specific field of knowledge. Choosing an elective is purely personal but must be beneficial for higher studies and employment.

Objectives

The Central objective of Foundation Courses in Social Sciences for the Undergraduates is the same as given in the General Guidelines. (i.e. to develop in

the students aptitude to i. pursue higher learning in the Social Science/s of their choice, ii. continue lifelong education in response to the changing needs, and iii. acquire necessary skills and competency adding to employability.)

Likewise, the further objectives of the Foundation Courses in Social Sciences are mostly the same as provided for in the General Guidelines: They are to make undergraduates aware of their knowledge-gaps in:

a. Social institutions, structures, practices and ideology perpetuating contradictory social relations, domination, divisiveness, marginalisation and annihilation with reference to class, caste, gender and child abuse;
b. Political institutions, ideas, structures and relations of domination, divisiveness, marginalisation and annihilation besides Constitutional citizenry, concept of freedom, fundamental rights, legal framework, secularism, democracy, and socialism;
c. Economic affairs in terms of systems, structures, relations, institutions, organisations, practices, forces and consequences local as well as global;
d. Contemporary and future knowledge in general sciences, and
e. Contemporary tools like computers, operating systems, order statistics, data analytics, computational statistics/mathematics, and familiarity with digital technologies.

Learning Outcomes of Compulsory Courses.

General and Specific Learning Outcomes of the Compulsory Courses in Social Sciences must be grounded on the weightage of cognitive benefits such as comprehension (faculty to conceptual and theoretical understanding), analysis (the ability to discern the underlying and fundamental, i.e. the faculty to discover), critical thinking (ability to evaluate) and communication skill i.e. the faculty to articulate in the knowledge-language (the language of technical terms) indicated in the General Guidelines.

i. General Learning Outcomes of a Compulsory Course in Social Sciences must be framed along the lines as exemplified below:

a. Show Comprehension of concepts and theories of Social Sciences,
b. Understand Disciplinary similarities and differences of Social Sciences
c. Identify Interconnections of Social Sciences
d. Show interest in Comparative Analysis and Synthesis
e. Express ability to communicate knowledge in technical language

ii. Specific Learning Outcomes of a Compulsory Course in Social Sciences must be framed along the lines as exemplified below:

1. Explore interface fields of Social Sciences and exhibit interest in identifying the contemporary life-related contexts and issues.
2. Demonstrate competence to make critical evaluation and creative thinking.
3. Demonstrate competence to handle analytical tools.
4. Show creative ability to translate the knowledge into uses/solutions

General and Specific Learning Outcomes of the Elective Courses must be grounded on the objectives shown in the General Guidelines (i.e. developing competence, competency, tastes, skills, and perspectives of personal preference). Hence Learning Outcomes of Elective Courses should be relating to the cognitive development of creativity and criticality.

i. General Learning Outcomes of Elective Courses in Social Sciences must be framed along the lines as exemplified below:

1. Demonstrate competence in understanding interface fields of Social Sciences.
2. Show a personal taste for any one of the interface fields.
3. Demonstrate competency in comprehending an interface field of Social Science and cynically analyse it.

ii. Specific Learning Outcomes of Elective Courses in Social Sciences must be framed along the lines as exemplified below:

1. Show competence in making a critical assessment of the chosen social science interface field in the contemporary life-related contexts and issues.
2. Exhibit competence to handle the qualitative frameworks or quantitative analytical tools like data ordering, data analytics, computational statistics/mathematics wherever relevant for the process of discovering, analysing and gaining insights from source.
3. Demonstrate creative ability to translate insightful knowledge into uses/solutions.

Accordingly the Boards of Studies/Expert Committees in Social Sciences shall identify a series of General and Specific Learning Outcomes before designing the Compulsory and Elective Courses.

Appendix -IV
Foundation Courses in Sciences

As outlined in the guidelines for design of the Foundation Courses for the Undergraduate programme, there is a need to develop courses which integrate knowledge from different disciplines in a manner that will equip students to actively participate in and effectively contribute to the intellectual and economic development of society. The challenge before the science faculty for designing Foundational Courses in science is twofold. In a world that is undergoing rapid technological transformations it becomes necessary that education of the scientific process and content should not be restricted to the scientific community alone. At the same time for students of science, discipline specific skills alone will not be sufficient for them to become successfully employed and functional citizens of a society. These students will require exposure to the humanities to help develop additional skills to enable them to become functional citizens of a society. This can be achieved through the design of compulsory and elective courses.

The Foundation Courses for all science students should include discipline specific compulsory courses introducing physics, chemistry, mathematics, and biology.

A Compulsory Course for all undergraduate students could be designed on the history and philosophy of science introducing the historic development of science and scientific thinking, the role of society in driving discovery, spread and use of scientific knowledge and technology and the subsequent impact these have on societies. Such a course can help students to understand how science and scientific thinking evolved, the role of power and politics in knowledge production, differentiating between science and non-science, challenges in addressing conflicts between technological, environmental, and social worlds, how gender influences technologies and the social organisation of scientific and technical workspaces, knowledge as a public good versus intellectual property rights, ethics and good practices in science and science communication and so on.

Elective Courses in Sciences can be designed in the interdisciplinary areas between the sciences or science and the humanities. These courses should be designed to focus on improving the students' skills in writing and communication,

critical thinking, ability to work in teams, ethical and social/cultural awareness, and developing lifelong learning attitudes.

Objectives

The Central objective of Foundation Courses in Sciences for the Undergraduates is as given in the General Guidelines.

To develop in students aptitude to i) pursue higher learning in sciences of their choice, ii) continue lifelong education in response to the changing needs, and iii) acquire necessary skills and competency adding to employability.

A major objective of the integrative approach of introducing science and humanities to all undergraduate students is to help them understand the complexities in technologically developing societies. The aim is to prepare informed citizens who can constructively participate in the democratic process. The ability to use rational and logical thinking to distinguish between right and wrong and to develop the capacity to dispassionately discuss different points of view. Understanding of how science and technology develop, and the cultural and ethical impacts is critical for development of healthy societies.

Learning Outcomes of Compulsory Courses

Learning Outcomes of the Compulsory Courses in Sciences must be grounded on the weightage of cognitive benefits such as comprehension (faculty to conceptual and theoretical understanding), analysis (the ability to discern the underlying and fundamental, i.e. the faculty to discover), critical thinking (ability to evaluate) and communication skill i.e. the faculty to articulate in the knowledge-language (the language of technical terms) indicated in the General Guidelines.

i. Learning Outcomes of a Compulsory Courses in for undergraduate Science students:

1. Exhibit knowledge of fundamental scientific concepts, terminology, laws, theories at the introductory levels of chemistry, physics, biology and mathematics through written and oral communication.
2. Show ability to integrate this knowledge into larger contexts and applications.
3. Demonstrate excellent laboratory skills and techniques including the proper use of relevant instruments field techniques, computer tools (including use of

software programmes for data analysis and presentation, numerical analysis, and/or computer simulations)

ii. Learning Outcomes of a Compulsory Course for all undergraduate Students

1. Develop knowledge in evolution of scientific concepts and relationships between the historical, philosophical, and sociological analysis of science.
2. Identify and critique classical and contemporary theories of the nature and progress of science and examine their social significance.
3. Recognise key ethical, social, and political issues that arise in development of science and technology.

General and Specific Learning Outcomes of the Elective Courses must be grounded on the objectives shown in the General Guidelines (i.e. developing competence, competency, tastes, skills, and perspectives of personal preference). Hence Learning Outcomes of Elective Courses should be relating to the cognitive development of creativity and criticality.

i. General Learning Outcomes of Elective Courses in Sciences must be framed along the lines as exemplified below:

1. Demonstrate competence in understanding interdisciplinary fields of sciences.
2. Show a personal taste for any one of the interdisciplinary fields.
3. Demonstrate competency in comprehending an interdisciplinary field of Science and critically analyse it.

ii. Specific Learning Outcomes of Elective Courses in Social Sciences must be framed along the lines as exemplified below:

1. Show competence in making a critical assessment of the chosen interdisciplinary field in contemporary life-related contexts and issues.
2. Exhibit competence to handle the qualitative frameworks or quantitative analytical tools like data ordering, data analytics, computational statistics/mathematics wherever relevant for the process of discovering, analysing and gaining insights from source.
3. Demonstrate creative ability to translate insightful knowledge into uses/solutions.

Accordingly, the Boards of Studies/Expert Committees in Social Sciences shall identify a series of General and Specific Learning Outcomes before designing the Compulsory and Elective Courses.

Appendix -V

Foundation Courses in Commerce and Management

The General Objectives of the foundation courses are the same as given in the Curriculum document prepared by KSHEC. Foundation course shall be made up of relevant knowledge drawn from different disciplines in Commerce and Management as well as allied disciplines of Economics and Law. The objective is to provide insights in to issues of contemporary life as well as establish linkages between disciplines that promote Business Studies.

General Objectives of Foundation Courses- Commerce and Management

- Create Interest in further learning and deep involvement in the learning processes throughout the programme(B Com/BBA)
- Help undergraduate students to develop study strategies to synthesis broad disciplines
- To provide insights into issues of contemporary life as well as establish linkages between disciplines that promote Business Studies
- Provide Basic inputs that would enable acquisition of further knowledge in the Core courses, Skill-based courses as well as Add on courses
- Provide the Basic Philosophy of the course in terms of Why it is important and How it Links up with the Programme
- Help students to make wise choices under the multidisciplinary format

The specific objectives would be as follows:

1 Provide basic understanding to the students on the fundamentals and the methodology of developing analytical skills, interpretational skills, inferential skills, and judgment in the domain of accounting and finance to address employability concerns. Most of the current curriculum in this major domain currently focusses on recording computing classifying and reporting which has become disruptive

2 Impart basic understanding to the students about case study methodology, the general framework of case-study, nature, and importance of case studies and real - time problem- solving methods that will blend theories to practice and promote application -oriented skills

3 Enable identification and association with entrepreneurial eco- system. Learning to comprehend how organizations function under an ideal eco system and the entrepreneurial drive behind the same

4 Create abilities that promote understanding of business environment which is tech-driven and standardized. The Legal, social, political context and demographic conditions that support the business entity need to be addressed.

5 Promote understanding on association between Commerce and Management and the disciplines of Economics, Computer science, Mathematics and Statistics, Psychology and Sociology and similar other cross linkages.

General Learning Outcome for Compulsory Foundation courses in Commerce and Management must be designed with focus on:

- Understanding Business Environment with an introduction to modern technologies in Business Operations
- Comprehension of theories and concepts in Management and Business Studies
- Providing inputs to promote analytical and inferential skills that could contribute to Business Intelligence
- Creation of interest in Entrepreneurship and Business enterprises
- Developing abilities to communicate and effectively report technical Business Knowledge
- Understanding nature and diversity of Business Organizations
- Providing an Introductory framework to Global Citizenship/Ethics
- Imparting Introductory inputs on appropriate analytical tools to comprehend, analyze, evaluate qualitative and quantitative business problems
- Familiarizing students about the challenges and opportunities of leading and working in inclusive and diverse teams and environments

Specific Learning Outcomes for Compulsory Foundation courses need to focus on:

- Familiarizing students in handling data such that it enables appropriate decision making
- Encouraging critical thinking based on understanding of theories
- Enabling Learning Methods through an understating of real time issues
- Developing capabilities to read and infer Financial Statements and Reports.
- Impart a Basic Understanding on the legal framework of business

Suggested Foundation Courses

The titles given below are only suggestive with a brief note to help in the design. Better titles and content can be developed through effective Brainstorming in this regard.

1. Business and Society -this course is meant to provide a basic understanding about impact of business in society. It should also help to understand the intricate relationships between business, social structures, and government. The course should help students understand social issues raised as a result of the above stated relationships.
2. Indian Economy and Industry- this course is meant to provide a basic understanding about concept, structure, and sectors of Indian Economy. It should also cover the role of industry in terms of Production, employment, income generation lead to growth of the economy.
3. Legal frameworksfor Business and Industry- this course is meant to provide a basic understanding about the importance of ensuring the legality of a product or a service. Also, it should briefly explain the basic guidelines within which a business entity/ industry is operating. It can initiate a List of statutes that impact Business with further learning to come later.
4. Management Thoughts and Practices-this course is meant to provide basic understanding about the theoretical framework for the study of Management.in terms of principles functions and basic theories.
5. Entrepreneurship and Enterprise Building- students to be made aware about what an enterprise is and what entrepreneurship means, they need to understand what an entrepreneur does. Generate Interest in Entrepreneurship and innovation – Success story Illustrations may be included
6. Creativity and Innovation in Business- this course is meant to understand the role and importance of creativity and innovation in the emerging business environment. Initial Thought on New Models through illustrations and linkages can be attempted.

7. Business Communication-to provide students with communication principles, concepts and techniques which are essential for effective communication in business entities/organization. Introduction to the Media and its opportunities can be attempted.
8. Socio Economic Perspectives of Tourism
9. Tourism and Cultural Communication
10. Tourism and Hospitality
11. E Business - introduction to concepts and approaches in electronic business and its relevance in the digital world.
12. Social Media Communication
13. Constitutional Studies or Secularism
14. Digital Planning

Skill Based Foundation Courses

1. Data Analytics/ Business Analytics-to introduce students into various ways in which Enterprises such as businesses, non-profit organizations and governments can use data to gain insights and make decision making process better. The relevance of Analysis and Analytical tools need to be conveyed without detailing the operational aspects of all tools
2. Problem Solving and Case Studies Approaching Real Time Issues - Highlighting the processes to elicit real problems that emerge from the business environment, learnings they convey and recording the learner's thoughts on the same
3. Functional Accounting Packages -Introduction to Accounting packages in terms of how they serve decision making and not detailed operations
4. Business Informatics- help in use of informatics for business decisions business administration
5. Scholastic Reporting Techniques
6. Interpretation and Tour guiding skills (for tourism)
7. Managing tour operations (for tourism)
8. Data Science for Business Innovation – Help in understanding the need and relevance of data science for managers to foster data- driven innovation

9. Soft skills for Business – familiarize students about the role of soft skills in modern business scenario and introduce them the problems encountered without these skills in business world
10. Financial Reporting in Global Business Environment

Appendix VI

Foundation Courses in Languages (Guidelines)

Language is not just an external expression and communication of internal thoughts, but something intrinsically and invariably connected to nature and culture. Language determines and defines man's relationship to nature. It is an integral part of culture, when the latter is understood as the totality of human activities. Language is internalised and transmitted culturally. This means a language thrives, is used and taught within its own cultural context. When language is culturally transmitted, it's the culture itself which is transmitted or manifested. Learning language assumes important dimensions as the process envisages better understanding of the culture, history and values of the community.

Teaching of language, to the true spirit of the letter happens within the community when the elders encourage their children to use language in meaningful ways. Reading and writing, the study of literature and acquisition of formal grammar are usually dealt with in lower classes. In higher education, the learners are expected to develop refined use of language-skills, appreciation of literature and aesthetics. The first one i.e., communication acquire greater importance in the present century of increased data transport ,big data analysis , Artificial Intelligence and so and so forth : thus communicating ideas in clear, logical and persuasive ways and in a wide range of styles, registers and for a variety of purposes and situation is an important attribute of language studies. Learners understand language as a complex and dynamic system and as an integral part of the larger system called culture. By reading a range of texts, learners understand more about diction, form and structure. They, by means of the close analysis of texts and literary forms and negotiation of multiple meanings embedded in the texts, also develop an ability to critically evaluate and interpret meanings produced by texts and cultures from different ages and cultures. By tracing these multiple perspectives, students develop impressions and insights regarding diversity of cultures, interdependence and co-existence of divergent cultures, the ensuing plurality and so on and so forth and thus inculcate, inter alia, democratic and secular values. Learners also improve their understanding of how language is used in a variety of situations and cultural contexts. They extend their skills across a range of speaking and writing styles, including imaginative, discursive

and argumentative. Understanding one language invariably leads to a love of all languages and cultures and also an understanding other disciplines of knowledge. A third important aspect is the understanding aesthetic quality of literature and developing a sense of aesthetics in life which invariably determines the quality of life. This makes them more creative and thus more responsible and emotionally stable human beings for the twenty-first century.

It is very important to translate these ideals into classroom practices. Thus it is imperative that courses pertaining to these and more are to be introduced to learners of undergraduate programmes.

General Objectives

1. To equip leaners to experience and produce knowledge in different real life situations.
2. To help the learners pursue higher learning in pathways best suited to them.
3. To arm them with necessary knowledge and set of skills for employability.

Language Specific Objectives

The learners will be able to

1. Get familiar with the vast array of language
2. Apply effective oral and written communication skills in a variety of situations.
3. Enhance language proficiency in terms of speaking, reading and writing (including academic and professional writing)
4. Assimilate academic skills like academic writing of different types and critical analysis and skills for cross disciplinary and interdisciplinary learning
5. Develop critical thinking/consciousness regarding areas which they can perceive, reflect and act upon
6. Understand and critically evaluate language and power and question the 'legitimate ways' of expressions of knowledge.
7. Understand culture and its interface with language and to develop critical insights regarding the scope of cultural sustenance by studying languages.
8. Understand language and literature in depth and to pursue higher studies in related disciplines if they wish to.

Broad Areas of Foundation Courses in Languages

The academic Councils and the Boards of Studies of the Universities shall be entrusted with the task of framing of credit structure and detailed curriculum of the foundation courses.

The following list is not exhaustive.

1. Compulsory course which introduces the learners to the finer aspects of language application and literature. A part form this major-specific course there can be compulsory courses cutting across different foundation courses like MDC, SEC, AEC and VAC. (eg Science and Culture, Language and Society, History in Literature)
2. Multi-disciplinary foundation courses in languages which support students to explore and design a unique combination of courses. Advanced level LSRW skills including academic and professional reading and writing pertainimng to different subject areas.
3. Value Added Foundation Courses in Languages—Literature of the margins, cultural migration, cultural studies, history of languages, language and society, aesthetics and politics in language and literature,
4. Skill Enhancement Courses-transferable and knowledge based skills. translation in real life situations , applied language skills, informatics, editing and publishing, speaking and writing for professional skills areas/fields,
5. Ability enhancement Courses- digital writing, translation, content writing, Ability for specific professional writing like content writing, local history, scripts, writing for print, electronic and social media, reports of various types, speeches, subtitles etc.

General Recommendations

1. Common Foundation Courses in Languages should be structures as to have 24% or more of the credits of the programme.
2. This share is to further be divided between English and other languages.
3. The common taxonomy shall be based on language itself and can be distinguished by numbers and subtitles. (eg. Foundation Course in English-1: Basic and Advanced Skills)

Appendix - VII

UGC - Curricular Framework and Credit System for the Four-Year Undergraduate Programme

https://www.ugc.gov.in/pdfnews/8126011_Draft--curriculum-framework-credit-struture-FYUGP.pdf

Appendix VIII

Existing Workload of Courses with Credit for the Proposed/New Course Structure

Table -1

Existing Course Structure	Sanctioned work hour	Working Hours	Credit	New Course Structure	Required Credit 3 year	Required Credit 4 year	Courses (3y/4y)
Core course	40 hr	80 hrs	66	Major	68	88	17(22*) *2 online courses
Complimentary Course1	6hrs.	12 Hrs	8	Minor -1	12	12	3 (3)
Complementary 2	6hrs	12 hrs	8	Minor-2 (vocational)	12	12	3 (3)
English	14 hrs	28 hrs	22	Multi-disciplinary	09	09	3 (3)
Additional Language	9 hrs	18 Hrs	16	Skill Enhancement Courses (SEC)	09	09	3 (3)
				Additional Minor	-	12	(3)
				Ability Enhancement Courses (AEC)	12	12	4 (4)
				Value Added Courses common for all UG	09	09	3(3)
				Summer Internship ,field based learning etc	02	02	
				Research Project / Dissertation		12	(3)
			120		133	177	36(44/47)

Distribution of different levels of courses for a multidisciplinary stream with a Major(Core with complementary subjects in the present system)

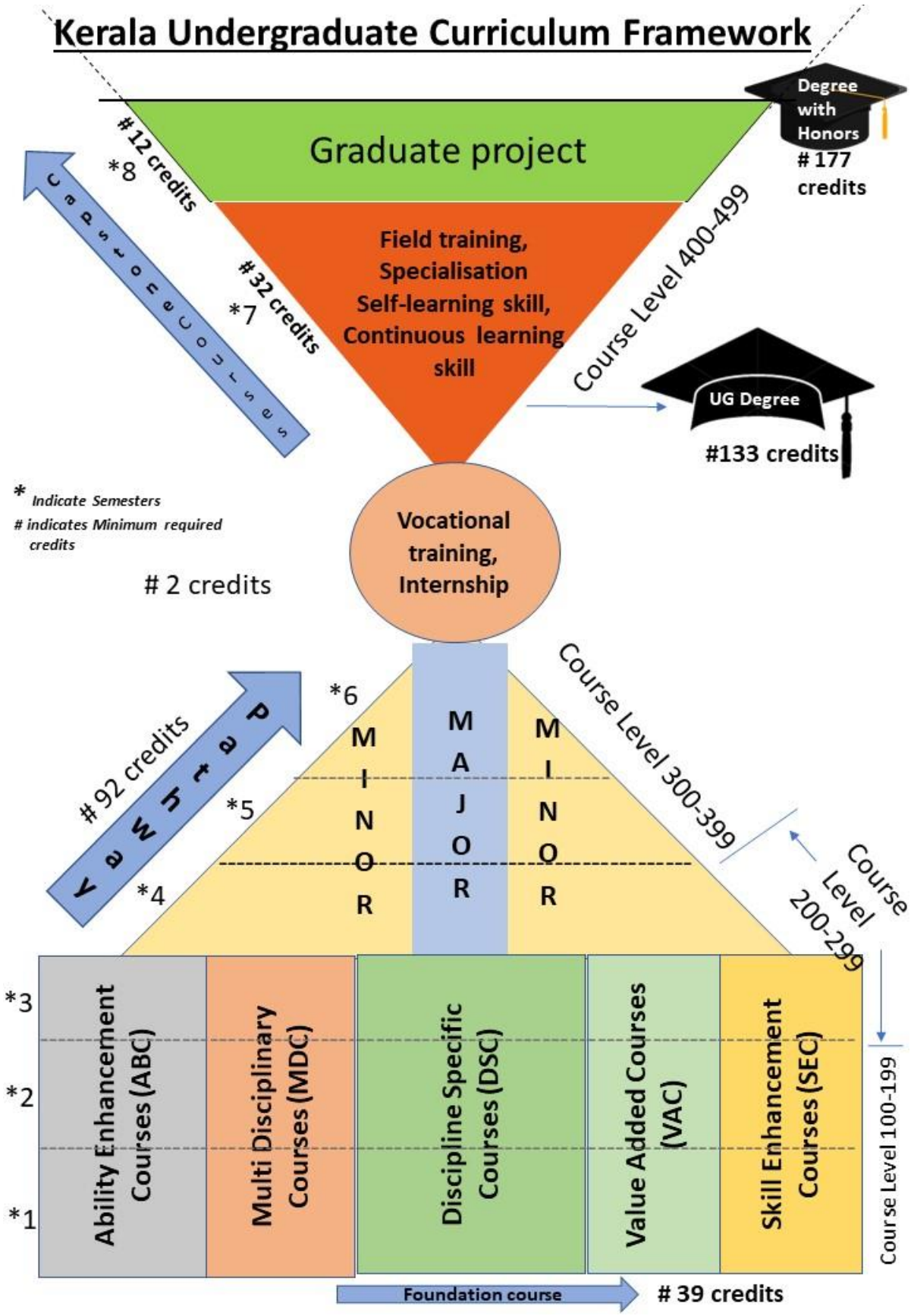
Table -2

Course Level	Number of Discipline specific courses (including major and minor stream assuming all are 4 credit courses)	Semester
Level100-199	6* (4 no's from minor stream)	1st and 2nd Semesters
Level 200-299	8* (2 Nos from minor stream)	3rd and 4th semesters
Level 300-399	9 (All are from Major stream)	5th and 6th Semesters
Those who exit after 3 year with a Multi-disciplinary degree with a Major They should have completed 17 courses from major streams and 3 courses each from each of the minor stream they choose. (Total number of courses will be 23 on major + minor streams)		
Level 400-499	8 2 no from discipline specific online mooc, 3 no courses from discipline specific core and courses, 3 courses can be from discipline specific/ higher level courses in the minor streams	7th and 8th semesters
Those who opt for honours degree have to do 22-25 discipline specific courses (3 courses may be opted from higher level courses in the minor stream as well) Total number of courses will be 31. If the students are not opting research projects/dissertation they may have to take additional 3 courses.		

Courses and Credit Old/ New Framework

Table -3

Course and Credit old pattern	Courses and Credit and possible hours in the New framework		
Course Name & Hours	Course Name& Credits	1st& 2nd SEM	3 rd and 4 th SEM
First language English 14 hours (9hr 1 year+5hr 2nd year)	AEC, MDC, VAC,SEC	AEC1 & SEC1 3 Credit Each (1 credit T+ 2 C P)* Total hour 9 For tutorials and Practical s the class may be divided in to maximum 3 batches with 25-30 students each	AEC3 /AEC4 3 credit 2 Credit L+1 CT 5 hr
2nd Language 9 hrs (5 +4)	AEC, MDC, VAC,SEC	AEC2/MDC &VAC 3 credit Each 2 Credit L+1 CT 5 hr	SEC/VAC 3 credit Each 2 Credit L+1 CT 5 hr


Kerala Undergraduate Curriculum Framework
Degree with Honors
177 credits
Graduate project
#12 credits
*8
Capstone Courses
Field training, Specialisation Self-learning skill, Continuous learning skill
#32 credits
*7
Course Level 400-499
UG Degree
#133 credits
* Indicate Semesters
# indicates Minimum required credits
# 2 credits
Vocational training, Internship
Course Level 300-399
*6
MINOR
MAJOR
MINOR
#92 credits
Vertical
*5
*4
Course Level 200-299
*3
*2
*1
Ability Enhancement Courses (ABC)
Multi Disciplinary Courses (MDC)
Discipline Specific Courses (DSC)
Value Added Courses (VAC)
Skill Enhancement Courses (SEC)
Course Level 100-199
Foundation course
39 credits

KERALA STATE HIGHER EDUCATION CURRICULUM FRAMEWORK for UNDERGRADUATE PROGRAMMES

May 2023

Kerala State Curriculum Committee for Higher Education