Kerala State Higher Education Council
Minutes of the 14th Executive Body meeting held on 11.04.2025

The 14th Executive Body Meeting of the fourth KSHEC was held on 11.04.2025 at 10.30 am through online mode. Prof. Rajan Gurukkal P.M., Vice Chairman presided.

The following members attended the meeting.

1. **Prof. Rajan Gurukkal P.M. : Vice Chairman, KSHEC.**
2. **Dr. M.S. Rajasree : Member, Executive Body, KSHEC**
3. **Sri. Paul V. Karanthanam : Member, Executive Body, KSHEC**
4. **Dr. Rajan Varughese : Member Secretary, KSHEC**

The following agenda was transacted and decisions taken.

Item No. 1 – International conclave -Plan of Action.
Approved the following Plan of Action

International Conclave on Next-Gen Higher Education: Action Plan for Implementation

Drawing on the key ideas and insights that emerged from the International Conclave on Next-Gen Higher Education held at CUSAT, Kochi, the following comprehensive action plan is designed to transform Kerala's higher education landscape into a globally competitive and innovation-driven ecosystem. This strategic framework addresses critical areas of advancement — including governance reforms, internationalisation, research excellence, and industry collaboration. It reflects the State's commitment to elevating its institutions to world-class standards while remaining responsive to the regional development priorities.

- **Governance Reforms for Global Competitiveness:** Strengthen and modernise university governance structures to enhance institutional autonomy, ensure transparency and accountability, and enable active participation of institutions in national and global university rankings.
- **Strengthen Academic and Research Excellence:** Establish centers of excellence in priority disciplines. Promote Flagship international programmes, twinning and dual degree MOUs, joint research initiatives, and increased publication output.
- **Enhance Global Visibility of Kerala's Higher Education:** Draft and adopt an *Internationalization of Higher Education Strategy* for the State with institutional guidelines, policy incentives, and quality benchmarks. A virtual centre for excellence for promoting internationalization may be established under the KSHEC.
- **Foster International Partnerships:** Develop MoUs with global universities for student exchange, joint degrees, research, and faculty mobility.
- **Improve Student Support Systems:** Establish International Student Offices in all universities with services including: Visa assistance, Orientation and language support, Housing and cultural integration, among others.
- **Utilise Graduate Tracking and Employability Data:** Implement a state-wide *Graduate Outcome Tracking System* to assess employability and inform curricula.

- **Integrate Emerging Technologies:** Encourage adoption of AI tools, digital learning platforms, and smart classrooms to modernize pedagogy at HEIs.
- **Promote Financial Sustainability:** Create a diversified funding system for HEIs which includes mechanisms to accept corporate sponsorships and contributions from family foundations.
- **Graduate Employability and Future Skills Development:** Establish *Future Skills Centres* within higher education institutions offering micro-credentials and modular courses aligned with evolving job markets.
- **Strengthen Teacher Education Programmes:** Launch *Faculty Excellence Programmes* that provide systematic professional development through specialised tracks in advanced pedagogy, educational technology integration, research methodology mentoring, and evidence-based instructional practices aligned with global standards.
- **Industry-Academia Partnership Framework:** Develop *Industry-Academia Boards* within each university (STEM & Non-STEM), with defined goals: internships, curriculum co-design, and joint R&D.
- **Library and Knowledge Infrastructure Modernization:** Transform university libraries into *Digital Learning Resource Hubs* offering AI-assisted research tools, data analytics platforms, and open-access content.
- **Scientific Research Translation and Commercialization:** Create *Technology Transfer Offices (TTOs)* and *Innovation Incubators* at major universities to translate research into market-ready solutions.
- **Strengthen Policy-Oriented Research:** Institute *Research-Policy Interface Cells* in universities to align academic research with real-world public policy needs in Kerala

The action plan include the Establishment of the following Centres of Excellence (CoE) announced by the Hon'ble Minister for Higher Education at the valedictory session of the Conclave and steps are being taken to implement the same.

1. **Centre of excellence for Teaching, Learning and Training (CTLT)**
2. **Kerala Institute for Science, Technology, and Innovation (KISTI)**
3. **Kerala Institute of Advanced Studies (KIAS)**
4. **Kerala Network for Research-Support in Higher Education – (KNRSHE)**
5. **Centre for Indigenous People's Education (CIPE)**
6. **The Kerala Institute for Gender Equality (KIGE)**
7. **Kerala Language Network**

Item No. 2 - International conclave (Income & Expenditure).

It was resolved to approve the total expenditure of Rs. 48,97,348/- (Forty-Eight Lakh Ninety-Seven Thousand Three Hundred and Forty-Eight only) towards the conduct of the Higher Education Conclave held on 14th and 15th of January 2025 at CUSAT. The total expenditure consists of an expenditure amounting to Rs. 30,43,905/- submitted by the Registrar, CUSAT. The statement of accounts submitted by the Registrar, CUSAT shows Rs. 5,59,152/- by way of sponsorship received by CUSAT. KSHEC released an amount of Rs. 18,65,610 to CUSAT leaving a balance payment amount of Rs. 6,19,142/- to CUSAT.

The total expenditure incurred by KSHEC towards the conclave include Rs. 18,65,610/- and consists of the following items

Item	Expenditure in rupees
Accommodation & Food charges	7,03,945/-
Transportation charges	7,18,835/-
Website Development	2,53,700/-
Printing & Stationery	45,786/-
Miscellaneous	1,31,177/-
Total Expenditure KSHEC	**18,65,610/-**
Expenditure incurred by CUSAT - food & other expenses	30,43,905/-
TOTAL Expenditure (CUSAT + KSHEC)	**48,97,348/- (Forty-Eight Lakh Ninety-Seven Thousand Three Hundred and Forty-Eight only)**

Account details

Sponsorship received by CUSAT	Rs. 5,59,152/-
Payment released to CUSAT by KSHEC	Rs. 18,65,610/-
Balance Amount to be reimbursed to CUSAT	**Rs. 6,19,143/-**

Item No. 3 - Course Fee – BSc. Forensic Science Govt. Letter No. E3/140/2024-HEDN dated 08.10.2024

Resolved to request the Government to fix the tuition fee for BSc Forensic Science as per the provision of University Laws (Amendment 1995 section 73 A) related to Self-Financing institutions.

Item No. 4 - Draft Postgraduate Curriculum.

Resolved to approve the Report submitted by Dr. Saji Gopinath related to Curriculum and Credit Framework for Post Graduate Programmes as given below and to forward the same to the Universities.

1.0 Introduction

Kerala has been at the forefront of higher education reforms, consistently working towards enhancing accessibility, equity, and academic excellence. The state's higher education sector has witnessed significant progress over the past decade, as reflected in the steady rise of its

Gross Enrolment Ratio (GER) from 22.1% in 2012–13 to 43.2% in 2020–21. In alignment with this growth, Kerala has undertaken multiple academic and administrative reforms to modernize its higher education landscape. Initiatives such as the Choice-Based Credit Semester System (CBCSS), the Single Window System (SWS) for admissions, and the modernization of examination processes have played a crucial role in ensuring a more flexible and student-centric learning environment.

Building on the comprehensive undergraduate (UG) curriculum reforms introduced in the 2024–2025 academic year, Kerala is now implementing a revised postgraduate (PG) curriculum framework. The new framework is designed to strengthen subject knowledge, foster critical thinking, and promote interdisciplinary and research-oriented learning. It aims to bridge the gap between knowledge acquisition and knowledge creation, equipping students with the necessary skills to excel in academia, industry, and research.

A key feature of the revised PG curriculum is the introduction of work-integrated and research-integrated programs alongside traditional two-year postgraduate courses. Additionally, a one-year PG program is being introduced for students who have completed a four-year undergraduate degree, aligning Kerala's higher education system with global standards. The emphasis on experiential learning, industry collaboration, and innovation ensures that students receive a well-rounded education that enhances their employability and research capabilities.

By integrating flexible learning pathways and strengthening the research ecosystem, the revised PG curriculum reinforces Kerala's commitment to developing a knowledge-driven society. These reforms position the state's higher education system as a model of inclusivity, academic rigor, and global competitiveness.

1.1 Suggested credit requirement and eligibility for admission to a master's programme

- A student is directly eligible for a master's programme in a discipline corresponding to either major or minor(s) discipline in UG programme. If the admission is based on minor discipline, it is advisable that the student should have successfully completed 32 credits in that discipline (the maximum number of minor credits in the four-year programme).
- However, irrespective of the major or minor disciplines chosen by a student in a UG programme, a student is eligible for admission in any discipline of master's programme if the student qualifies the National level or University level entrance examination in the discipline of the master's programme
- In these cases, if the student has already completed 12 credits as minor in that discipline, he/she may be eligible to continue for the PG programme directly without any prerequisite.
- If the student has not studied that discipline earlier, then the BOS may suggest prerequisite papers, if required.
- Students who have completed a **four-year UG Honours** or **Honours with Research** degree are eligible for a **one-year PG program** if the general eligibility requirement of that PG program is "any degree."
- Students can also join a **one-year PG program in the same, relevant, or allied discipline** of their major discipline. Definition of Relevant/Allied Subject: A subject related to the main subject under consideration, either as a single discipline, multidiscipline, or inter-discipline.

- Students with a **minor discipline of 32 credits or more** may be eligible for a **one-year PG program in their minor discipline**, provided their major discipline is **allied or relevant** to the minor discipline.
  If the **minor discipline is not relevant or aligned** with the major discipline, students opting for a PG in their minor discipline will be required to complete a **two-year PG program** in that discipline.

2.0 Recommended PG Programmes as per the Curriculum Framework

2.1 Two-Year PG Programme

Designed for students who have completed a **three-year Bachelor's programme**, this **two-year PG programme** aims to enhance academic depth, research capabilities, and employability.

- **First Year:** Focuses on **advanced coursework, skill development, and interdisciplinary learning**, equipping students with specialized knowledge and analytical abilities.
- **Second Year:** Entirely devoted to **research, internships, or apprenticeships**, providing hands-on experience, industry exposure, and practical application of theoretical concepts.

2.2 One-Year PG Programme

This one-year PG programme is designed for students who have completed a four-year Bachelor's programme with Honours/Honours with Research. It offers a focused academic pathway with: Specialization in advanced subject areas and Integration of research and practical applications leading to an accelerated transition to research or professional careers, aligning with global higher education trends.

2.3 Five-Year Integrated Bachelor's/Master's Programme

The five year integrated programmes Combines undergraduate and postgraduate studies into a single integrated pathway. It encourages early engagement in research and interdisciplinary learning. By providing a seamless academic progression from foundational to advanced learning.

2.4 PG curriculum Framework Alignment with UGC frame work

- Must align with the **National Higher Education Qualification Framework (NHEQF)**.
- Prescribed levels for PG programmes: **Level 6, Level 6.5, and Level 7**.
- Should be in sync with the **National Credit Framework (NCrF)** for flexibility and credit mobility.

3.0 Main Features of the PG Curriculum Framework

- **Flexibility in Discipline Selection** : Students can move from one discipline to another.UG graduates with a **major and minor(s)** can opt for PG studies in either their major, minor, or another subject if they demonstrate competence.

- **Choice-Based Learning**: Opportunity for students to choose courses based on their academic and career interests.
- **Flexible Learning Modes**: Options to study through offline, Open and Distance Learning (ODL), online learning, or hybrid modes.
- **Work-Integrated PG Programmes**: Incorporates internships, apprenticeships, and industry collaborations to enhance employability and practical skills.
- **Research-Integrated PG Programmes**: Focus on **advanced research**, enabling students to transition smoothly into research careers or doctoral studies.
- **Credit Mobility and Flexibility**: Aligns with the **National Credit Framework (NCrF)** to ensure seamless credit transfer and multidisciplinary learning.

4.0 Credit Requirement and Eligibility for PG Programmes

The postgraduate (PG) curriculum framework follows the **National Higher Education Qualification Framework (NHEQF)**, ensuring structured academic progression and credit-based eligibility.

4.1 Credit Requirements:

- **One-Year (Two-Semester) PG Programme (Level 6.5)**
  i) Requires a Bachelor's degree with Honours/Honours with Research.
  ii) Minimum 160 credits at the undergraduate level.
- **Two-Year (Four-Semester) PG Programme (Level 6.5)**
  i) Requires a Three-Year Bachelor's degree.
  ii) Minimum 120 credits at the undergraduate level.
- **Two-Year (Four-Semester) PG Programme (Level 7) for Professional Degrees**
  i) Requires a Four-Year Bachelor's degree (e.g., B.E., B.Tech.)
  ii) Minimum 160 credits at the undergraduate level.
  iii) Candidates who have completed 4-year UG programme or a 3 year UG and 2 year PG programme or 5 year integrated programme (UG + PG) in STEM subjects will be eligible for admission in M.E., M. Tech. in allied areas.

4.2 Eligibility Criteria:

- Students can pursue PG studies in either their major or minor disciplines from their UG programme.
- Universities and colleges can admit students based on:
  - UG performance or University-level entrance examination.
  - National-level entrance examination, which allows students from any UG discipline to enrol in a PG programme of their choice.

This structure provides flexibility, interdisciplinary mobility, and a merit-based admission process, ensuring accessibility to diverse learning pathways in higher education.

- A student is directly eligible for a master's programme in a discipline corresponding to either major or minor(s) discipline in UG programme. If the admission is based on

minor discipline, it is advisable that the student should have successfully completed 32 credits in that discipline (the minimum number of minor credits in the four-year programme).

- However, irrespective of the major or minor disciplines chosen by a student in a UG programme, a student is eligible for admission in any discipline of master's programme if the student qualifies the National level or University level entrance examination in the discipline of the master's programme
- In these cases, if the student has already completed 12 credits as minor in a discipline, he/she may be eligible to continue for the PG programme directly then the BOS may suggest prerequisite papers, if required.

5.0 Generic Learning Outcomes at the Postgraduate Level

The **National Higher Education Qualification Framework (NHEQF)** outlines key learning outcomes for postgraduate (PG) education, ensuring students acquire **advanced knowledge, research skills, and professional competencies**.

1) **Advanced Knowledge and Critical Thinking**

   a) Develops an in-depth understanding of subject-specific theories, methodologies, and applications.

   b) Encourages **critical analysis, logical reasoning, and problem-solving** abilities.

2) **Research and Innovation**

   a) Strengthens **research methodologies**, enabling students to conduct independent investigations.

   b) Promotes innovation, creativity, and interdisciplinary collaboration.

3) **Professional and Practical Skills**

   a) Equips students with **specialized skills** relevant to academia, industry, and professional sectors.

   b) Emphasizes **work-integrated and research-integrated learning**, preparing students for real-world challenges.

4) **Communication and Leadership**

   a) Enhances effective communication, teamwork, and leadership abilities.

   b) Develops the capacity to **present, publish, and disseminate knowledge**.

5) **Ethics, Social Responsibility, and Lifelong Learning**

   a) Encourages **ethical decision-making** and responsible citizenship.

   b) Promotes lifelong learning, adaptability, and **continuous professional development**.

These outcomes ensure that PG graduates are well-prepared for **higher research, industry roles, and societal contributions**, making them valuable contributors to a knowledge-driven

economy. Detailed learning outcomes for the PG programme are given in the National Higher Education Qualifications Framework. https://www.ugc.gov.in/pdfnews/2990035_Final-NHEQF.pdf

6.0 Graduate Attributes of PG Programmes

Postgraduate (PG) degrees signify the attainment of **advanced knowledge, critical thinking, and professional competencies** beyond the undergraduate level. According to the **National Higher Education Qualification Framework (NHEQF)**, graduates of PG programmes should demonstrate the following attributes:

1) **Advanced Knowledge and Understanding**
    a) Builds on undergraduate learning, extending into **specialized and research-based knowledge**.
    b) Encourages originality in developing and applying ideas, particularly in research contexts.
2) **Application of Knowledge and Problem-Solving**
    a) Ability to apply expertise in **new, unfamiliar, or multidisciplinary contexts**.
    b) Capable of addressing **complex real-world challenges** using analytical and innovative approaches.
3) **Integration of Knowledge and Ethical Judgment**
    a) Ability to handle **complex information** and make informed decisions even with limited data.
    b) Reflects on **social, ethical, and professional responsibilities** while applying knowledge.
4) **Communication and Leadership Skills**
    a) Effectively conveys ideas, research findings, and arguments to **specialist and non-specialist audiences**.
    b) Develops skills for teamwork, leadership, and interdisciplinary collaboration.
5) **Lifelong Learning and Autonomy**
    a) Acquires **self-directed learning skills** for continuous personal and professional growth.

6.1 Key Learning Descriptors:

i. Knowledge and Understanding
ii. Technical, General, and Professional Skills
iii. Application of Knowledge and Skills
iv. Generic Learning Outcomes
v. Ethical, Humanistic, and Constitutional Values

vi. Employability, Entrepreneurship, and Job-Ready Skills

These attributes ensure that PG graduates are well-equipped for higher research, industry roles, and societal contributions while upholding ethical and professional integrity.

7.0 Designs of Postgraduate Programme

The flexibility in postgraduate (PG) programme design allows for multiple pathways, including 1-year, 2-year, and integrated 5-year programmes. However, the diversity in undergraduate (UG) curricula, particularly in the 4-year UG programme, significantly expands the possible PG frameworks. The UG framework includes bachelor's (Hons.) and bachelor's (Hons. with Research) degrees, creditization of work experience, and interdisciplinary combinations involving emerging fields like AI and Machine Learning.

Given this complexity, higher education institutions (HEIs) must design PG curricula that align with the graduate attributes of each UG pathway. The variations in major-minor combinations, research-intensive courses, and interdisciplinary approaches necessitate multiple PG entry points and exit options. A student completing a 4-year UG with research may transition directly into a 1-year PG, while those with a 3-year UG may require a 2-year PG. Integrated 5-year programmes further enhance flexibility by offering seamless progression.

Thus, PG curricula should be structured to accommodate these diverse entry qualifications while ensuring academic rigor and employability. HEIs must adopt a credit-based approach, allowing for modular learning and lateral entry, ensuring that PG education remains inclusive, adaptable, and aligned with the evolving higher education landscape.

8.0 Curricular Components

8.1 Two year PG programme

The first two semesters of the two-year PG programme should be in line with that of the fourth year of the FYUGP programme implemented in the universities in Kerala.

The students who joined for the two- year PG Programme after three-year UG may be provided with three options at the end of the first year, such as,

(1) Exit after 1 year with a PG diploma
(2) Exit after 1 year with Honours Degree*
(3) Proceed to 2nd year to complete PG

- The students have to choose the option at the end of the first semester so that they can plan the second semester courses accordingly.

- In the first semester, all students should complete 3 courses in their major and 2 vocational courses related to their major discipline or in the interdisciplinary/ transdisciplinary, all at level 400.
- In the second semester, the students who wish to opt for PG diploma may take 5 courses (total 20 credits) at the level 400 and exit with a PG diploma. Out of these five courses, three courses shall be from the related vocational area and can be taken by online mode.

- In the second semester, the students who wish to opt for Honours Degree may take one course at level 400 and two courses at level 500 in online mode and opt to do an industry/ job-oriented project for 12 credits,

- The students who continue for the 2 year PG may do one course at level 400 and three courses at level 500 and the course at level 400 shall be taken by online mode.

The students who enter into the second year of the PG Programme have three optional pathways.

PG with course work : Postgraduate programmes with coursework allow students to complete their PG through structured courses in the third and fourth semesters. They may also opt for online courses or earn credits from national/international institutions through twinning, student exchange programs, or collaborations, ensuring academic flexibility, global exposure, and interdisciplinary learning opportunities.

PG with course work research/internship: Postgraduate programmes with coursework and research/internship require students to complete coursework in the third semester and engage in research, industry internship, or fieldwork in the fourth semester. This hybrid model ensures academic depth, practical exposure, and industry-relevant skills for enhanced career opportunities.

PG with Research/internship/apprentice ship : Postgraduate programmes with Research, Internship, or Apprenticeship require students to engage in these activities during the third and fourth semesters at an authorized research center, industry, or relevant institution. This ensures hands-on experience, skill development, and research exposure, enhancing employability and academic rigor in alignment with evolving industry and research needs.

8.2 One year PG Programme

The students who completed the four-year UG and wish to join for the PG may be integrated into the third and fourth semester of the 2-year PG programme. They may also be allowed to complete their PG in three different optional pathways, such as,

PG with course work : Postgraduate programmes with coursework allow students to complete their PG through structured courses in the third and fourth semesters. They may also opt for online courses or earn credits from national/international institutions through twinning, student exchange programs, or collaborations, ensuring academic flexibility, global exposure, and interdisciplinary learning opportunities.

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PG with Research/internship/apprentice ship : Postgraduate programmes with Research, Internship, or Apprenticeship require students to engage in these activities

during the third and fourth semesters at an authorized research center, industry, or relevant institution. This ensures hands-on experience, skill development, and research exposure, enhancing employability and academic rigor in alignment with evolving industry and research needs.

Note: Those students who have not done any project during their Honours Programme may be directed to opt for the pathway as PG with Course Work and Research/internship.

The students who have completed UG Honours with Research may be given preference to opt for the PG with Research.

8.3 Five year Integrated Programme (UG+PG):

The five-year Integrated Programme shall be designed for a total of 217 credits. Students may exit after three years with a UG Degree upon earning 133 credits or after the fourth year with an Honours/Honours with Research Degree upon earning 177 credits. This ensures flexibility while maintaining academic rigor.

8.4 vocational courses

All postgraduate programmes must include vocational courses worth a minimum of 8 credits at the 400 level, relevant to the chosen discipline. These courses should qualify students for Vocational or Skill Certification from empaneled skill agencies or industries, enhancing employability and industry readiness through practical skill development.

9.0 Credit distribution.

9.1 **Two year PG programme**

Curricular Components	**PG Programme for 3 UG students Minimum Credits**			
	Course Level	Credits from courses	Credits from projects	Total Credits
First Year ((1st 2nd Semesters)				
1 year Exit with PG Diploma	400	40		40
Exit with Honours	400 500	24 8	12	44
Continuing to 2nd year	400 500	24 16		40
Second Year ((3rd & 4th Semesters)				
Course work with Research/internship	500	20	20	40
Research/internship			40	40
Course work	500	40	0	40

b) For 1-year PG

Curricular Components	PG Programme (one year) for 4-yr UG (Hons. / Hons. with Research) Minimum Credits			
	Course Level	Credits from Courses	Credits from Project	Total Credits
Course work with Research	500	20	20	40
Research/internship/apprenticeship			40	40
Course work	500	40	0	40

For 2-year PG programmes, there will be one exit point at the end of the first year, where students may receive a Postgraduate Diploma or an Honours Degree. The Honours option may be reserved for students who completed their degree under the earlier 3-year UG structure before the introduction of FYUGP. To qualify for an Honours Degree, such students must complete a minimum of three add-on courses in life skills, personal skills, and employability skills, along with two value-added courses, ensuring additional competency and employability

10.0 Course Levels

400-499: Advanced courses which would include lecture courses with practicum, seminarbased 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 Postgraduate theoretical and practical courses

500-599: For students who have graduated with a 4-year bachelor's degree. It provides an opportunity for original study or investigation in the major or field of specialization, on an individual and more autono

11.0 Course Categories & Credit Distribution

11.1 Core Courses

Core courses in postgraduate programs encompass **fundamental disciplinary knowledge, advanced theoretical concepts, and specialization courses**, constituting **50% of the total credits**. Out of the **minimum 80 credits** required for a PG program, **40 credits** are allocated to core courses. Within this, **12 credits** are specifically earmarked for **specialization**, ensuring in-depth expertise in a chosen area. This structure balances **foundational learning and advanced specialization**, fostering both **academic rigor and practical applicability**. By

allocating **30% of core course credits to specialization**, universities can enhance subject mastery while maintaining a strong disciplinary foundation aligned with **UGC guidelines**

11.2 Elective Courses

Elective courses in a postgraduate program include **open electives** that span **interdisciplinary, cross-disciplinary, and intra-disciplinary choices**, promoting academic flexibility and broader learning. These courses allow students to explore subjects beyond their core discipline, fostering a **multidisciplinary perspective**. As per the framework, **15% of the total credits** in a **two-year PG program** should be allocated to **open electives**. For a program with a **minimum of 80 credits**, **12 credits** are designated for these courses. This approach enhances **interdisciplinary**

11.3 Integrating Research, Internships, and Project Work in PG Programs

To enhance innovation, applied research, and social engagement, postgraduate (PG) students may undertake research internships, fieldwork, industry internships, or apprenticeships in their final semester. It is proposed that 25% of the total credits in a two-year PG program be allocated to such experiential learning. Given that the minimum credit requirement for a two-year PG program is 80 credits, 20 credits may be reserved for research and internship-based activities This initiative fosters practical exposure, skill development, and industry-academia collaboration, ensuring students gain hands-on experience in real-world problem-solving. By integrating research components within the curriculum, students are better equipped for careers in academia, industry, and entrepreneurship. Additionally, engaging in field-based projects strengthens their capacity for critical thinking and interdisciplinary research. Universities may design flexible mechanisms to implement this, allowing students to undertake research under faculty supervision or through collaborations with industry and research institutions.

11.4 Integration of Future-Ready Skills in PG Curriculum

To equip postgraduate (PG) students with cutting-edge competencies, 10% of the total credits in PG programs should be allocated to future-ready skill courses. With a minimum credit requirement of 80 credits, 8 credits may be earmarked for training in emerging technologies such as Artificial Intelligence, Cybersecurity, Internet of Things (IoT), Big Data Analytics, Blockchain, Intelligent Automation, Augmented Reality, and 3D Printing.

These skill-based courses will enhance employability, innovation, and interdisciplinary expertise, preparing students for industry, research, and entrepreneurship. The curriculum should incorporate hands-on training, industry collaborations, and project-based learning to ensure practical application. Universities should establish dedicated training modules, workshops, and partnerships with technology firms to deliver these courses effectively.

12.0 **Flexibility in Postgraduate Programmes**

Flexibility is the hallmark of this curriculum framework, ensuring diverse learning opportunities for students. Postgraduate programmes offer multiple options, including enrolling in online courses, pursuing two PG degrees simultaneously, and creditizing work experience. Fully online PG programmes enable learners to balance education with professional commitments. Students can pursue two academic programmes in different

modes: (1) two full-time physical programmes with no class timing overlap, (2) one full-time physical programme and one ODL/online programme, or (3) two ODL/online programmes. Only HEIs recognized by UGC/Statutory Councils/Government of India can offer ODL/online degrees, ensuring academic credibility and quality.

12.1 Creditization of Work Experience in Postgraduate Education

The integration of relevant work experience into postgraduate education enhances flexibility and holistic learning. The National Credit Framework (NCrF) allows for assigning academic credits to professional experience gained after completing an educational programme. If a learner's work experience aligns with the PG programme they wish to pursue, it can be creditized through an assessment process. Higher Education Institutions (HEIs) can adjust the programme duration based on this evaluation.

The maximum credit weightage for work experience is capped at two (2), meaning a candidate may earn credits equal to their base qualification or skill if they have substantial work experience. Credit redemption follows the assessment bands specified in NCrF and aligns with Academic Bank of Credit (ABC) guidelines, facilitating both horizontal and vertical mobility in education. This system enables learners to enter higher education at multiple levels through lateral entry options, ensuring academic progression and industry-aligned skill recognition.

12.2 Credit Assignment for relevant experience / proficiency

Experience cum Proficiency Levels	Description of the relevant Experiential learning including relevant experience and professional levels acquired and attaining proficiency levels	Weightage/ multiplication Factor	No. of years of experience (Only indicative)
Trained/ Qualification attained	Someone who has completed the coursework/ education/ training and has been taught the skills and knowledge needed for a particular job or activity	1	Less than or equal to 1 year
Proficient	Proficient would mean having the level of advancement in a particular profession, skillset, or knowledge	1.33	More than 1 less than or equal to 4
Expert	Expert means having high level of knowledge and experience in a trade or profession	1.67	More than 4 less than or equal to 7
Master	Master is someone having exceptional skill or knowledge of a subject/domain	2	More than 7

The credit assignment for relevant work experience or proficiency is indicative and can be customized by universities in consultation with the relevant Board of Studies, industries, and

empanelled skilling agencies. Institutions may develop a structured mechanism to identify skill sets relevant to specific PG programmes.

This mechanism will enable the recognition of industry, research, and technical experience, allowing universities to award appropriate credits based on expertise gained in a particular field. By integrating professional experience into academic credit systems, this approach enhances the flexibility and accessibility of higher education, fostering a seamless transition between industry and academia.

12.3 **Plagiarism Check**

The Higher Education Institution concerned shall have a mechanism using well-developed software applications to detect plagiarism in research work and the research integrity shall be an integral part of all the research activities.

13.0 Strategies for Effective Assessment of Learning Outcomes in PG Programmes in Kerala

Assessment should emphasize formative and continuous evaluation over traditional summative assessment. For PG programmes, the assessment scheme must include both types, with 30% weightage for formative assessment and 70% for summative assessment, ensuring alignment with learning outcomes.

13.1 Strategies for Effective Assessment:

1. **Outcome-Based Assessment:** Align assessments with specific learning outcomes, ensuring students develop critical thinking, research skills, and domain expertise.
2. **Diverse Assessment Methods:** Use a mix of assignments, case studies, presentations, research projects, and problem-based assessments.
3. **AI and Digital Tools:** Implement AI-based analytics for personalized feedback, automated grading, and progress tracking.
4. **Continuous Evaluation:** Conduct periodic quizzes, peer reviews, and reflective journals to track progress.
5. **Industry and Research Integration:** Encourage internships, apprenticeships, and fieldwork assessments.
6. **Competency-Based Evaluation:** Assess skills through practical, simulations, and real-world applications.
7. **Online and Hybrid Assessments:** Utilize digital platforms for flexibility, accessibility, and remote evaluations.

These strategies will enhance learning experiences and improve the effectiveness of PG assessments in Kerala's higher education institutions.

13.2 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

13.3 Computation of SGPA and CGPA

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) = $\sum(Ci \times Gi) / \sum Ci$

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 × Grade Point
1	**Course 1**	**3**	**A**	**8**	**3 × 8 = 24**
1	**Course 2**	**4**	**B+**	**7**	**4 × 7 = 28**
1	**Course 3**	**3**	**B**	**6**	**3 × 6 = 18**
1	**Course 4**	**3**	**O**	**10**	**3 × 10 = 30**

1	**Course 5**	**3**	**C**	**5**	**3 × 5 = 15**
1	**Course 6**	**4**	**B**	**6**	**4 × 6 = 24**
Total		**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 = ∑(Ci x Si) / ∑ 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	Credit	SGPA
Semester 1	**20**	**6.9**
Semester 2	**20**	**7.8**
Semester 3	**20**	**5.6**
Semester 4	**20**	**6**
Total Credits	**80**	
CGPA	**(20 × 6.9 + 20 × 7.8 + 20 × 5.6 + 20 × 6.0) / 80 = 6.6**	

14.0 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

References:

1. Shyam B Menon commission report

2. National Credit Framework (NCrF) (https://www.ugc.gov.in/pdfnews/9028476_Report-of-National-Credit-Framework.pdf)

3. The National Higher Education Qualifications Framework (NHEQF) (https://www.ugc.gov.in/pdfnews/2990035_Final-NHEQF.pdf)

4. Curriculum and Credit Framework for Undergraduate Programmes. (https://www.ugc.gov.in/pdfnews/7193743_FYUGP.pdf)

5. Kerala state higher education curriculum frame work for Four year under graduate Programme

6. Kerala state model regulations for four year under graduate programmes

7 Guidelines & curriculum frame work for restructuring the BVoC programmes

Report on FYUGP Course Evaluation

The meeting also approved the report of the committee headed by Dr. Suresh Das for evaluating the various courses in the FYUGP offered by state Universities and decided to forward the same to the Universities.

1.0 The world is undergoing an unprecedented digital transformation, where **Artificial Intelligence (AI), Cloud Computing, Blockchain, Big Data Analytics, Internet of Things (IoT), Cybersecurity, Augmented Reality (AR), Virtual Reality (VR), Robotic Process Automation (RPA), 3D Printing, and Intelligent Process Automation (IPA)** are redefining industries. The **Fourth Industrial Revolution (Industry 4.0)** has created a paradigm shift, demanding new skills and cross-functional expertise across all domains.

As automation and AI-driven solutions reshape the workforce, sector-specific digital innovations are becoming essential in healthcare, manufacturing, education, finance, automotive, construction, energy, hospitality, tourism, public administration, textiles, transportation, telecommunications, and defence. To stay competitive in the global job market, students must acquire cross-disciplinary digital skills alongside their core domain knowledge.

This **Future-Ready Curriculum Framework** integrates the latest technological advancements with traditional disciplines, ensuring that students graduate with **industry-relevant, technology-driven, and innovation-oriented** skills. The curriculum aims to:

1. **Bridge the Digital Divide:** Introducing emerging technologies across **all disciplines**, ensuring that every student, regardless of their major, gains **essential digital skills**.
2. **Promote Cross-Sectoral Capacity Building:** Aligning education with industry needs, preparing students for **high-growth job sectors**.
3. **Enhance Employability through Digital & Soft Skills:** Encouraging **problem-solving, critical thinking, digital literacy, entrepreneurship, and leadership**.
4. **Encourage Innovation & Research:** Enabling students to apply **AI, IoT, Cybersecurity, and Automation** in real-world projects.
5. **Foster Interdisciplinary Learning:** Combining **finance with fintech, healthcare with AI, construction with automation, and business with big data analytics**.

In this context, we are conducting a **detailed analysis of the existing Four-Year Undergraduate Programme (FYUGP) curricula** in universities to assess its alignment with **future industry needs**. The goal is to **enhance, modernize, and integrate** technology-driven courses within traditional disciplines, ensuring that students graduate with **future-proof skills** and **cross-functional expertise** to thrive in a rapidly evolving digital economy.

2.0 Committee's Observations and Recommendations on Foundation Courses

1. **MDC courses**

   Multi-Disciplinary Courses (MDCs) are designed to provide students with foundational knowledge in disciplines beyond their major field of study. These courses serve as an introduction to a new domain, ensuring that students from different academic

backgrounds gain a basic understanding of key concepts, terminologies, and applications relevant to that field. MDCs play a crucial role in developing cross-disciplinary competencies, which are essential in today's rapidly evolving job market. An ideal MDC should be introductory, application-oriented, and accessible, allowing students to explore diverse areas of knowledge without requiring prior expertise. It should provide a broad yet structured overview of the discipline, highlight its relevance to various industries, and encourage further learning. Given the expanding role of technology and interdisciplinary skills, it is essential to review the existing MDCs in the FYUGP curriculum. The goal is to assess whether these courses effectively introduce students to the core aspects of a discipline, remain industry-relevant, and equip students with practical knowledge applicable to real-world scenarios. A structured review will help improve MDCs to better serve students' educational and professional needs.

2. Ability Enhancement Courses

a) Ability Enhancement Courses (AECs) should be designed with a stronger focus on language proficiency and communication skills, ensuring that students develop essential competencies in verbal, non-verbal, listening, reading, and writing. Effective communication is a critical skill across all disciplines and professions, making it imperative that AECs equip students with practical language and literacy abilities that enhance their academic and professional success.

b) AECs should emphasize verbal communication, including public speaking, presentation skills, and interpersonal dialogue, enabling students to express their ideas clearly and confidently. Non-verbal communication, such as body language, tone modulation, and visual cues, should also be incorporated to improve overall effectiveness in professional and social interactions. Listening skills, a key component of effective communication, should be developed through active listening exercises, comprehension tasks, and real-world scenarios.

c) Additionally, reading and writing skills should be strengthened through structured exercises in academic and professional writing, critical analysis of texts, and exposure to diverse literary and technical materials. The courses should also integrate digital literacy, ensuring students can effectively communicate in online and multimedia environments.

d) A review of existing AEC courses is necessary to ensure alignment with these core aspects, making them more practical, application-oriented, and career-focused.

3. Skill Enhancement Courses (SEC) and Need for Alignment with Employability Skills

Skill Enhancement Courses (SECs) in the Four-Year Undergraduate Programme (FYUGP) should be designed to **enhance students' employability, life skills, and professional competencies**. These courses should focus on **practical, real-world skills** that prepare students for the evolving job market while also fostering personal and social development.

SECs should be categorized into **nine key areas**, ensuring holistic skill development:

1. **Communication Skills** – Verbal, non-verbal, written, and digital communication.
2. **Interpersonal and Social Skills** – Teamwork, collaboration, leadership, and emotional intelligence.
3. **Cognitive and Metacognitive Skills** – Critical thinking, problem-solving, and decision-making.
4. **Citizenship and Constitutional Values** – Ethics, civic responsibility, and social awareness.
5. **Digital Fluency** – Proficiency in digital tools, online collaboration, and cybersecurity awareness.
6. **English and Foreign Language Literacy** – Enhancing global communication abilities.
7. **Workplace and Job-Related Skills** – Professional ethics, corporate behaviour, and adaptability.
8. **Foundational Skills** – Time management, resilience, and adaptability.
9. **Self-Employment and Entrepreneurship** – Business planning, innovation, and financial literacy.

Each student should complete at least three courses from these categories to ensure a well-rounded skillset. A review of existing SEC courses in FYUGP should be conducted to ensure better alignment with these skill areas, making them more industry-relevant and future-ready.

4. Value Addition Courses (VAC)

Value Addition Courses (VACs) should be designed to offer domain-specific employability skills that align with the emerging technologies . Unlike Skill Enhancement Courses (SECs), which focus on general employability and life skills, VACs should provide specialized technical and professional training relevant to specific industries and future job roles.

Future technologies emphasizes human-AI collaboration, advanced automation, personalized production, and sustainability, requiring professionals with domain-specific digital expertise. To meet these demands, VACs should include cutting-edge skill areas, such as:

1. AI & Machine Learning Applications in Business & Industry
2. Blockchain for Finance, Supply Chain & Digital Security
3. Cybersecurity & Ethical Hacking for Digital Governance
4. Robotics & Automation in Manufacturing & Healthcare
5. Augmented & Virtual Reality in Education, Marketing & Entertainment
6. Big Data Analytics for Decision-Making & Smart Cities
7. 3D Printing & Additive Manufacturing for Custom Production
8. IoT & Smart Technologies for Sustainable Development

3.0 Committee's Observations on Discipline-Specific Pathway Courses and Elective Courses

To create future-ready graduates, FYUG programs across all disciplines must integrate essential technological and interdisciplinary skills into their core, pathway, and elective courses. This transformation is crucial to bridge the skill gap and prepare students for high-demand careers across diverse industries. Programs should incorporate both corporate technical skills—gained through discipline-specific studies—and vital soft skills. Technical skills must align closely with the student's field of study, ensuring deep domain expertise.

This shift represents a transformative approach to education, emphasizing personalized, flexible, and lifelong learning, powered by advanced technologies and a human-centric focus. Higher education institutions must prioritize digital literacy, artificial intelligence, data analytics, creative problem-solving, and the development of an entrepreneurial mindset. In addition, fostering interdisciplinary collaboration, promoting inclusive and diverse perspectives, and nurturing adaptability and resilience are essential.

The committee observed that to achieve these outcomes, all core, pathway, and elective courses should be thoughtfully redesigned. These elements should be embedded directly into discipline-specific content, ensuring that students gain relevant skills as part of their academic journey. Such a redesign will better equip graduates to navigate complex global challenges and succeed in a rapidly evolving professional landscape.

4.0 Structured Curriculum Review and Recommendations for Future-Ready Education

A structured review of existing courses in B.Com, B.Sc. Physics, and BA English has led to key recommendations for updating and aligning curricula with Industry Further evaluations across all disciplines are necessary to enhance employability and innovation-driven learning.

Committee Observations on B.Com (Honours) Courses Offered by Universities in Kerala

Discipline-Specific Core (DSC) Courses

Semester I

1. Accounting Principles and Standards
2. Management Concepts and Practices
3. Business Communication and Documentation
4. Dynamics of Business Environment
5. Indian Financial System

Semester II

1. Financial Account
2. Functional Management
3. E-business and Governance
4. Motivation and Leadership in Business
5. Practices of Banking and Insurance

Semester III

1. Business Mathematics
2. Corporate Accounting
3. Entrepreneurship Development

4. Legal Dimensions of Business
5. Principles of Marketing
6. Retail Banking

Semester IV

1. Business Statistics
2. Company Administration
3. Business Economics
4. Innovation and Start-ups

Semester V

1. Financial Management
2. Fundamentals of Income Tax
3. Cost Accounting
4. Human Resource Management
5. Logistics and Supply Chain Management
6. Advanced Corporate Accounting

Semester VI

1. GST: Law and Practice
2. Financial Statement Analysis
3. Cost Accounting Methods and Techniques
4. Auditing Principles and Practices
5. Strategic Management
6. Research Methodology

Semester VII

1. Statistics for Business Research
2. Accounting Standards and Disclosure
3. Strategic Financial Management

Semester VIII

1. Online Course 1
2. Online Course 2
3. Internship Project / Research Project

Discipline-Specific Elective (DSE) Courses

Semester III

1. Investment Management
2. Conceptual Framework of Co-operation
3. International Business
4. Computer Application in Business
5. Consumer Behaviour
6. Introduction to Indian Taxation System
7. Introduction to Logistics Manageme
8. Principles and Practices of Tourism

Semester IV

1. Financial Markets and Services
2. Co-operation and Community Development
3. Legal Framework of International Business
4. Software for Data Analysis
5. Brand Management
6. Theory and Practice of Personal Income Tax
7. Fundamentals of Supply Chain Management
8. Tourism Geography

Semester V

1. Stock Exchanges: Operations and Regulations
2. FINTECH
3. Global Perspectives in Co-operatives
4. Co-operative Legal Framework
5. Export Import Management
6. International Financial Management
7. Computerised Accounting
8. Project Methodology
9. Retail Management
10. Advertising and Sales Promotion
11. Income Tax Assessment
12. Essentials of Goods and Service Tax
13. Procurement and Transportation
14. Warehousing
15. Tourism Products
16. MICE Tourism

Semester VI

1. Security Analysis and Portfolio Management
2. Financial Derivatives
3. Co-operative Governance
4. Co-operative Accounting and Auditing
5. International Human Resource Management
6. Forex Management
7. Advanced Tools for Business Analysis
8. Web Technology in Business
9. Service Marketing
10. Digital Marketing
11. Customs Duty Regulations, Compliance and Export Strategies
12. Assessment of Companies and Corporate Tax Planning
13. Port Management
14. Aviation and Cargo Management
15. Tourism Marketing
16. Travel Agency, Tour Operation and Airline Management

Semester VII

1. Behavioural Finance
2. Co-operative Research and Digital Application
3. Global Taxation Regime
4. Database Management System
5. International Marketing
6. International Taxation
7. International Logistics Management
8. Eco-Tourism and Sustainable Development

Multi-Disciplinary Courses (MDC)

Semester I

1. Accounting for Everyone
2. Fundamentals of Investment

Semester II

1. Personal Financial Planning
2. Investing in Stock Market

Semester IV

1. Entrepreneurial Skills
2. Digital Media Marketing

Semester V

1. Data Analysis and Visualization in Finance
2. Forensic Accounting and Fraud Detection

Semester VI

1. Accounting Software
2. Stock Market Operations

<u>Committee-Recommended Courses for Future-Ready B.Com Programmes</u>

1. Discipline-Specific Core (DSC) Courses *(Future-Focused)*

1. **Financial Technology & Digital Banking** *(Covers AI in banking, blockchain in finance, and digital payments)*
2. **Data-Driven Decision Making** *(Focus on business intelligence, analytics, and data visualization tools)*
3. **Strategic Financial Management** *(Investment strategies, risk management, global financial practices)*
4. **Sustainable Business Models & ESG Compliance** *(Green finance, carbon accounting, and sustainability-driven business models)*

5. **Global Supply Chain & E-Commerce Management** *(Cross-border trade, digital logistics, AI-powered supply chains)*

Discipline-Specific Elective (DSE) Courses *(Future Skills & Industry Trends)*

1. **Blockchain & Cryptocurrency in Finance** *(Applications of blockchain in accounting, auditing, and finance)*
2. **AI & Automation in Business Operations** *(AI-driven marketing, robotic process automation, AI in customer service)*
3. **Cybersecurity & Digital Risk Management** *(Cyber threats, fraud detection, digital forensics for finance professionals)*
4. **International Taxation & Trade Policies** *(Global tax laws, digital economy taxation, and compliance)*
5. **Investment Analysis & Behavioral Finance** *(AI in stock markets, algorithmic trading, hedge funds)*
6. **Neobanking & Fintech Innovations** *(New banking models, embedded finance, digital lending platforms)*
7. **Advanced Supply Chain & Logistics Tech** *(Use of IoT, AI, and automation in logistics)*
8. **Cross-Border E-Commerce & Digital Trade** *(Amazon, Shopify, Alibaba business models, dropshipping trends)*

3. Value Addition Courses (VAC) *(Soft Skills & Emerging Trends)*

1. **Design Thinking & Business Innovation** *(Creative problem-solving, innovation frameworks)*
2. **Sustainable Business & Corporate Social Responsibility (CSR)** *(ESG investing, carbon neutrality, and ethical business)*
3. **AI-Powered Market Research & Consumer Analytics** *(Understanding customer behaviors using AI and big data)*
4. **Business Ethics & Digital Compliance** *(Digital privacy laws, cybersecurity ethics, and regulatory frameworks)*
5. **Cross-Cultural Communication & Global Business Etiquette** *(Essential for international business professionals)*

Skill Enhancement Courses (SEC) *(Job-Ready Skills for Tomorrow)*

1. **Data Analytics & Visualization for Finance** *(Power BI, Tableau, Python for financial analysis)*

2. **AI-Powered Financial Modeling & Forecasting** *(Excel automation, AI-driven forecasting, and Monte Carlo simulations)*
3. **Forensic Accounting & Fraud Investigation** *(Understanding fraud patterns, digital auditing, and forensic tools)*
4. **E-Commerce & Dropshipping Business Models** *(Practical approach to Shopify, Amazon FBA, and digital commerce)*
5. **Stock Market Operations & Algorithmic Trading** *(Algo trading, AI in financial markets, and HFT strategies)*
6. **Cloud Computing & Business Process Automation** *(Using AI tools for streamlining business operations)*
7. **Virtual Reality (VR) & Augmented Reality (AR) in Retail & Marketing** *(Metaverse business applications)*
8. **Python & R for Business & Financial Analysis** *(Using programming for business intelligence & automation)*
9. **Crypto Asset Management & Tokenomics** *(Understanding DeFi, Web3, and blockchain-driven finance)*

Committee Observations on BSc Physics (Honours) programmes Offered by Universities in Kerala

DSC (Discipline Specific Core) Courses

1. Modern Physics
2. Principles of Mechanics
3. Essential Mathematics for Physics
4. Atomic and Molecular Spectroscopy
5. Wave Optics
6. Electromagnetic Theory
7. Basic Electronics and Electricity
8. Classical Mechanics
9. Introductory Quantum Mechanics
10. Atomic and Molecular Physics
11. Introduction to Solid State Physics
12. Thermal and Statistical Physics

DSE (Discipline Specific Elective) Courses

1. Basic Semiconductor Physics
2. Computational Physics - C++ Programming
3. Introduction to Space Physics
4. Introduction to Optics
5. Introduction to Materials Science
6. Foundations of Theoretical Physics
7. Microcontroller Programming
8. Semiconductor Electronics
9. Numerical Methods for Computational Physics

10. Exploring the Cosmos
11. Optoelectronics
12. Material Characterisation Techniques
13. Theory of Relativity
14. Continuous and Discrete Systems
15. Semiconductor Optoelectronic Devices
16. Computational Physics: Python
17. Physics of Atmosphere
18. Laser, Non-linear Optics and Fiber Optics
19. Physics of Advanced Materials
20. Introduction to Group Theory
21. Robotics and Industrial Automation
22. Op amp and Linear Integrated Circuits
23. Sensors and Actuators
24. Applied Computational Techniques in Chaos Theory
25. Introduction to Plasma Physics
26. Nanophotonics
27. Nanostructured Materials and its Applications
28. Classical Theory of Fields
29. Introduction to Nuclear Physics
30. MDC (Multidisciplinary Courses)
31. Observational Astronomy
32. Renewable Energy Sources
33. Physics Around You
34. SEC (Skill Enhancement Courses)
35. Solar Cell Technology: From Fundamentals to Applications
36. Physics Using Computational Tools
37. Electrical Circuits and Network Skills
38. Introduction to Cross-Platform Mobile Application Development using Flutter
39. Essential Machine Learning for Physicists

VAC (Value-Added Courses)

1. Science and Society
2. Environmental Physics
3. Physics for Resilience: Strategies in Disaster Management
4. Environmental Physics and Human Rights

Committee-Recommended Courses for Future-Ready BSc physics Programmes

For a future-ready B.Sc. Physics curriculum, we need to integrate cutting-edge technologies like AI, Cloud Computing, IoT, Cybersecurity, AR/VR, Big Data, Robotics, and Quantum Computing with core physics principles. The curriculum should also prepare students for emerging job sectors such as healthcare, manufacturing, space science, finance, defence, environment, energy, transportation, telecommunications, and beyond.

Here's a set of Discipline-Specific Core (DSC), Discipline-Specific Elective (DSE), Value-Added Courses (VAC), and Skill Enhancement Courses (SEC) designed to align physics education with future industry trends and cross-disciplinary skills.

- Applied Electronics & IoT for Smart Systems
- Photonics & Optoelectronics

- Computational Physics & AI-Powered Simulations
- Quantum Technologies & Quantum Computing Basics
- Material Science & Nanotechnology for Advanced Manufacturing
- Robotics & Automation in Smart Manufacturing
- Cybersecurity & Quantum Cryptography for Secure Systems
- Big Data Analytics & AI in Physics-Based Industries
- Renewable Energy Technologies & Smart Grid Systems
- Augmented Reality (AR) & Virtual Reality (VR) for Physics Training

Skill Enhancement Courses (SEC) ***(Hands-On Industry-Ready Skilling Modules)***

Short-term **vocational training programs can be** integrated into the **B.Sc. Physics curriculum** to **enhance employability** such as

1. **Python & AI for Scientific Computing** *(Programming for physics simulations & automation)*
2. **3D Printing & Digital Fabrication** *(Additive manufacturing techniques in industrial applications)*
3. **IoT & Embedded Systems for Smart Applications** *(Hands-on projects with sensors, automation & control systems)*
4. **Cybersecurity Fundamentals for Industrial Networks** *(Data security & ethical hacking for Industry 5.0 systems)*
5. **Renewable Energy Systems & Energy Storage Technologies** *(Hands-on with solar, wind, and battery technologies)*
6. **Quantum Computing Programming (Qiskit & IBM Quantum)** *(Quantum algorithm implementation & cryptography)*
7. **Big Data & Cloud Computing for Industrial Physics** *(Data analytics using AWS, Google Cloud & HPC platforms)*
8. **AI & Robotics for Industry 5.0 Automation** *(Practical robotics projects with machine learning integration)*
9. **AR/VR Development for Industrial Training & Research** *(Building immersive simulations for industrial applications)*
10. **Digital Twins & Smart Manufacturing Technologies** *(Physics-based simulation & predictive maintenance applications)*

Committee Observations on BA English (Honours) Programmes Offered by Universities in Kerala

Discipline-Specific Core (DSC) Courses

1. Literary Genres: Poetry, Fiction, and Folk Tales
2. Literary Genres: Prose, Drama, and Film
3. An Introduction to Phonetics
4. Appreciating Poetry
5. Indian Writing in English
6. Reading Prose and Fiction
7. American Literature
8. An Introduction to Literary Criticism
9. Reading Shakespeare
10. Exploring Gender

Discipline-Specific Elective (DSE) Courses

1. Introduction to Film Studies
2. Reading Culture: Food, Travel, and Music
3. Introduction to Media Studies
4. Reading Malayalam Cinema
5. Reading Culture: Comics, Cartoons, and Fairy Tales
6. Dynamics of Radio Jockeying, Anchoring, and Interviewing
7. Film Adaptation
8. Postcolonial Literatures
9. Literature and Ecology
10. Art of Script Writing
11. Theatre Studies
12. Medical Humanities
13. English Language Teaching
14. Cultural Studies
15. Reporting and Editing for the Media
16. Reading Graphic Narratives
17. Subaltern Voices

Multi-Disciplinary Courses (MDC)

1. Folk Tales and Songs from India
2. Narratives of Humour
3. Content Writing
4. Narratives of Love and Friendship
5. Sports Literature and Cinema
6. Fundamentals of Advertising and Public Relations
7. Literature and Kerala Renaissance

Skill Enhancement Courses (SEC)

1. English for International Careers
2. English for Professional Purposes
3. English for the Financial Sector
4. Critical Thinking and Academic Writing
5. Creative Writing in English

Value-Added Courses (VAC)

1. Literature and Gender
2. Literature, Technology, and AI
3. Literature and Environment
4. Literature and Law
5. Literature and Human Rights

<u>Committee-Recommended Courses for Future-Ready BA English Programmes</u>

1. Discipline-Specific Core (DSC) Courses *(Fundamental Literary & Language Studies)*

1. **Introduction to Literary Genres & Digital Storytelling**
2. **Applied Linguistics and Language Teaching** *(AI in language learning, TESOL methods, NLP tools)*
3. **AI and Literary Analysis** *(Computational literary studies, sentiment analysis, text mining in literature)*
4. **World Literature in the Digital Age** *(Cross-cultural perspectives, digital archives, and publishing trends)*
5. **Screenwriting and Film Adaptation** *(Scriptwriting for web series, OTT content, and screenplay techniques)*

2. Discipline-Specific Elective (DSE) Courses *(Specialized & Industry-Focused Courses)*

1. **Book Marketing and Promotion in the AI Era** *(Social media branding, e-publishing, AI-driven book recommendations)*
2. **Literary Journalism and Feature Writing** *(Writing for print, digital platforms, blogs, and investigative reporting)*
3. **Creative Writing and AI-Assisted Content Generation** *(Storytelling with AI tools, ChatGPT for fiction, poetry, and essays)*
4. **Translation Studies & AI in Multilingual Writing** *(Machine translation, AI-based subtitling, and localization industry trends)*
5. **Podcasting, Digital Content Creation & Literary Audio Narration** *(Audiobooks, storytelling podcasts, and digital engagement)*

3. Multi-Disciplinary Courses (MDC) *(Interdisciplinary Exposure & Future Skills)*

1. **AR/VR for Interactive Storytelling & Immersive Literature** *(AI-driven storytelling, gamification, and interactive fiction)*
2. **Cybersecurity & Ethics in Digital Publishing** *(Copyright, plagiarism detection, and AI-assisted content validation)*
3. **Digital Humanities & Literary Research Tools** *(Corpus linguistics, data visualization for literary studies, text encoding initiatives)*
4. **Social Media, Blogging & SEO for Writers** *(AI-driven content optimization, online publishing strategies)*
5. **E-Learning & AI-Assisted Language Teaching** *(EdTech, instructional design, AI-based curriculum development)*

4. Skill Enhancement Courses (SEC) *(Practical, Hands-On Training for Industry Readiness)*

1. **Creative Writing for Web & Social Media** *(Microfiction, blogging, interactive storytelling, Instagram literature)*
2. **AI-Driven Literary Analysis & Digital Research Methods** *(AI-based sentiment analysis, stylometry, corpus analysis)*

3. **Screenwriting for OTT Platforms & Film Industry** *(Scriptwriting, dialogue writing, adaptation techniques, pitch decks)*
4. **Content Writing, Editing, and Proofreading with AI Tools** *(Hemingway App, Grammarly, ChatGPT editing techniques)*
5. **Journalistic Writing, Copyediting & News Media Production** *(Freelance journalism, media writing, digital magazine production)*

5. Value-Added Courses (VAC) ***(Enhancing Employability & Future-Proofing Skills)***

1. **AI & Robotics in Creative Arts & Digital Literature** *(Algorithmic storytelling, AI-generated poetry, deep learning in creativity)*
2. **Entrepreneurship in Publishing, E-Libraries & Digital Archives** *(Building an online literary startup, self-publishing strategies)*
3. **Interactive Fiction, Gaming & AI-Powered Narratives** *(Writing for video games, interactive storytelling, AI-generated dialogue)*
4. **Virtual Reality & Augmented Reality for Literature** *(Creating VR literature experiences, digital book worlds, interactive narratives)*
5. **Cross-Cultural Communication & AI in Translation** *(Google Translate, DeepL, AI subtitling, cultural adaptation in writing)*

industry-aligned BA English Honours curriculum ensures graduates acquire transferable skills for careers in health, manufacturing, education, finance, construction, environment, defence, space, hospitality, tourism, government, fashion, energy, logistics, telecom, and communications.
It combines literature, linguistics, creative writing, AI, business communication, digital humanities, and professional writing to make students adaptable across industries.

5.0 Committee's Observations and Recommendations on Major and Minor Pathways under FYUGP in the Universities in Kerala

The concept of major and minor in undergraduate programs is often misunderstood as separate courses or independent programs. However, they should be structured as progressive pathways within a discipline, where students earn their major or minor based on the competencies and credits acquired in that specific domain. A well-structured credit-based pathway system ensures that students develop expertise in a discipline while maintaining flexibility for interdisciplinary learning.
Pathway-Based Credit System for Major and Minor

1. Entry into a Minor Pathway (12 Credits)
    - A student enters a discipline-specific pathway by completing at least 12 credits in that field.
    - This allows students to explore the subject before committing to a minor or major.
2. Attaining a Minor Degree (32 Credits)
    - A minimum of 32 credits in a discipline qualifies a student for a minor degree.
    - The curriculum should ensure that minor graduates develop core competencies similar to those of major students at an introductory level.

3. Attaining a Major Degree (68 Credits)
    - A student progressing further to 68 credits in the same discipline earns a major degree.
    - The coursework should provide in-depth subject knowledge and specialization.

4. Attaining a Second Major Degree (56 Credits)
    - Students pursuing a major in one discipline may obtain a second major in another discipline upon the successful completion of 56 credits in the second discipline

5. Flexibility to Upgrade from Minor to Major
    - Students who have completed a minor should have an option to acquire additional credits to bridge the competency gap and become eligible for a major degree in the same domain.
    - This ensures a seamless transition between levels without requiring a complete restart in the discipline.

Current Challenges & Need for Alignment

- Many students currently pursuing major and minor combinations are taking entirely different courses, leading to fragmented learning rather than a structured pathway.
- Ideally, a student completing a minor should acquire core competencies similar to major students, albeit at a foundational level.
- Universities should redesign pathway courses to align minor programs with major competencies, ensuring that students can gradually build expertise.

The major-minor system should be competency-driven, ensuring that students gain progressive mastery in a discipline. A flexible credit-based model allows students to upgrade from a minor to a major through additional coursework, making higher education more adaptable and student-centric. A review of current FYUGP structures is necessary to align majors and minors with clear learning pathways, skill progression, and industry relevance.

Item No.5 - Scholar Connect Mobile Application: Connecting Diaspora Scholars with Kerala's Academic Community

Resolved to approve the proposal for Scholar Connect Mobile Application and decided to entrust the same with Raintel Technologies for an amount of Rs 4,50,000/- + Tax.

Additional Agenda

A1 – Proposal for Establishment of Constituent Centers of KSHEC's Language and Research Networks at Irinjalakuda Assembly Constituency. (Govt. Letter No. C-2869/2025/M (HEDN&S) dated 18.03.2025.

It was resolved to authorise the Vice Chairman to study and submit a report.

A2 – Internship Portal - Proposal from Keltron for coordination and implementation of academic internship for FYUGP students.

After discussion, it was resolved to approve the Proposal from Keltron for coordination and implementation of internship portal (Internship Kerala 1.0) for FYUGP students in the state and forward the same to the Government.

A3 – Extension of Higher Education Empowerment Implementation Plan for 2024-25.

After detailed discussion it was resolved to approve the report on Higher Education Empowerment Implementation Plan and to request the government to extend the Higher Education Empowerment Implementation Plan for 2024-25 as government allotment for the Plan was low and limited the attainment of various targets fixed in the Plan.

A4 – Accountant General's remark - Letter No. AMG II (P) VIII/2024-25 dated 06.04.2024 - Recovery of Pension Contribution from Universities.

It was resolved to initiate steps to recover the amount of funds transferred as pension contribution to Mahatma Gandhi University, Kottayam, Cochin University of Science and Technology, Cochin and Calicut Universities, Kozhikode based on Accountant General's remark in the matter.

A5 – Proposal on TA/ DA of Syndicate Members (Govt. Letter No. B3/120/2023 HEDN dated 23.03.2025.

It was resolved to entrust Adv K. T. George (former Addl. Secretary, Govt Law Department) to prepare a draft proposal in this regard as it involves legal issues.

The Minutes were read and confirmed

The Meeting which started at 10.30 am concluded by 12.30 pm.

Member Secretary

Vice Chairman