Department of Chemical Engineering

KPR Institute of Engineering and Technology

KPRIET
Learn Beyond

Eleventh Board of Studies Meeting

Venue: Jasmine, Imperial Hall, KPRIET. **Date:** 06-12-2024

Time:10.00 AM

Agenda

1. Welcoming Board of Studies (BoS) Members (Internal and External)
2. Action taken report on the recommendations of the previous Board of Studies (BoS) meeting.
3. Discussion on Laboratory Experiments.
4. Proposal for New Additional Credit Courses (e.g., Industry Oriented Course, Value Added Course (VAC), MOOC course, *etc.*).
5. Approval for Capsule Courses.
6. Review and discussion of Program Outcomes (PO) and Program-Specific Outcomes (PSO) Targets.
7. Approval of examiners for question paper setting and valuation.
8. Finalization of the Program Exit Survey Questionnaire for the 2025 Batch (Current Final Year Students).
9. Gathering inputs for Regulations 2025.
10. Any other matters

Members Present

S. No.	Name of the member with Designation	Category	Signature
1.	**Dr. S. Balasubramanian** Professor & Head Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Chairman Board of Studies	
2.	**Dr. P. Kalaichelvi** Professor Department of Chemical Engineering National Institute of Technology Trichy - 620015.	Anna University Nominee	**ONLINE**
3.	**Dr. Udaya Bhaskar Reddy Ragula** Associate Professor Department of Chemical Engineering Amrita Vishwa Vidyapeetham Amrita Nagar Coimbatore - 641112.	Academic Experts (Outside the Parent University)	**ONLINE**
4.	**Dr. L. Muruganandam** Professor Department of Chemical Engineering Vellore Institute of Technology Vellore - 632014.	Academic Experts (Outside the Parent University)	**ONLINE**
5.	**Mr. J. Ashwin Nirmal** Engineer - Process WOOD India Engineering Project Pvt. Ltd. Chennai - 600113.	Industry Experts	**Absent**
6.	**Dr. A. K. Priya** Professor Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Faculty Member	
7.	**Dr. S. Karunakaran** Associate Professor Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Faculty Member	
8.	**Dr. G. Surendran** Associate Professor Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Faculty Member	
9.	**Dr. E. Nakkeeran** Associate Professor Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Faculty Member	

10.	**Dr. R. Umapriya** Assistant Professor III Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Faculty Member	**Absent**
11.	**Dr. M. Laxmi Deepak Bhatlu** Assistant Professor III Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Faculty Member	
12.	**Mr. K. Murugesan** Assistant Professor II Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Faculty Member	
13.	**Mr. N. Arunkumar** Assistant Professor II Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Faculty Member	
14.	**Ms. L. Dharani** Assistant Professor I Department of Chemical Engineering KPRIET, Coimbatore - 641407.	Faculty Member	
15.	**Mr. G. Kumaran** IV B.Tech. Chemical Engineering KPRIET, Coimbatore - 641407.	Student Member	
16.	**Ms. B. Umamaheshwari** IV B.Tech. Chemical Engineering KPRIET, Coimbatore - 641407.	Student Member	
17.	**Mr. Aishwarya S** II B.Tech. Chemical Engineering KPRIET, Coimbatore - 641407.	Student Member	
18.	**Mr. Chazvino Praise B** II B.Tech. Chemical Engineering KPRIET, Coimbatore - 641407.	Student Member	

Minutes of the 11th Meeting of The Board of Studies (BoS)

The meeting started with the Chairman, Department of Chemical Engineering welcoming the members of the Board of Studies. The Vision, Mission of the Institute and the Department were presented. The points in the agenda were presented one-by-one and the following were discussed.

RESOLUTIONS

1. Action taken on the minutes of the 10th BoS meeting

Sl. No.	Suggestions	Suggested By	Action Taken
1.	Recommended mapping of COs with SDG goals in the curriculum.	Dr. L. Muruganandam	At present, the capstone projects are mapped with SDG goals. However, Institute wide recommendation is received to map SDG Goals in the proposed new R2025 curriculum.
2.	Inquired about interdisciplinary projects in Chemical Engineering. Dr. S. Balasubramanian clarified that some students are already engaged in such projects with other departments. Additionally, it was also planned to take up projects to develop laboratory course contents using Augmented Reality (AR) and Virtual Reality (VR) in association with Department of Computer Science, KPRIET.	Dr. L. Muruganandam	Development of experiment contents with the help of AR and VR is initiated in association with Department of Computer Science and Department Information Technology. Started collecting the preliminary data for development of experiments in AR/VR. Also, we introduced the Capstone projects with other department faculty-student involvement.
3.	Inquired about Minor and Micro degree courses, specifically credits required for each degree. Dr. S. Balasubramanian clarified 18 credits are required for a minor degree and 12 credits for a micro degree.	Dr. L. Muruganandam	Complied.
4.	Inquired about the timetable allocation for minor and micro degree courses. Dr. S. Balasubramanian clarified Saturdays are allocated for major and minor degree courses	Dr. P. Kalaichelvi	Included in regular time table.

Sl. No.	Suggestions	Suggested By	Action Taken
5.	Recommended increasing the credits for the Chemical Reaction Engineering (CRE) course (Theory & Laboratory). It was supported by Dr. G. Surendran (Internal BoS member) and Ms. B. Umamaheshwari (Internal student BoS member)	Dr. P. Kalaichelvi	Based on feedbacks, suggestions will be incorporated in upcoming new R2025.
6.	Inquired about the Heat Transfer project component. It was suggested to add Heat Transfer equipment fabrication related topics in the project component	Dr. P. Kalaichelvi	Complied.
7.	Members approved four value added courses. i) Bio-fertilizers ii) Material Characterization iii) Petroleum Product Testing iv) Basics of Oil and Gas	BoS Members	Two courses are offered in the Odd semester of the academic year 2024-25, namely the (i) Material Characterization offered in III semester, and (ii) Basics of Oil and Gas offered in V semester.
8.	Suggested to include hands-on training in Value Added Courses (VAC).	Dr. Udaya Bhaskar Reddy Ragula	Material Characterization course is offered with hands-on training.
9.	Emphasized the importance of including hazards analysis and safety-related courses in the curriculum.	Mr. J. Ashwin Nirmal	It is included in U21CHP29 Risk and HAZOP Analysis. Additionally, process safety vertical will be introduced in new curriculum R2025.

2. Minutes of the 11th BoS meeting:

1. BoS Members accepted the inclusion of virtual lab experiments in the laboratory courses with aid of ministry of education under the national mission of education through ICT, https://www.vlab.co.in/broad-area-chemical-engineering
2. BoS members approved new industry oriented courses, value added courses, capsule courses, and the NPTEL courses.

   The industry and value added approved courses are:

   - Insights into Chemical Plant [Industry Oriented Course]
   - Chemical Operation management [Industry Oriented Course]
   - Chemical plant design and safety aspects [Industry Oriented Course]
   - Sustainable Agriculture and Smart Farming [Value Added Course]
   - Hydrogen economy and fuel cells [Value Added Course]
   - Petrochemical Technology [Value Added Course]

   The capsule courses approved are:

   - Essentials of MATLAB for Chemical Engineers
   - Design of Experiments
   - DWSIM for Beginners
   - Soil Health Management
   - Fluid flow for Beginners using OpenFoam

   The NPTEL Courses approved are

   - Applied Time-Series Analysis
   - Aspen Plus Simulation Software - A Basic Course for Beginners
   - Basic Principles and Calculations in Chemical Engineering
   - Biological Process Design for Wastewater Treatment
   - Biomass Conversion and Biorefinery
   - Characterization of Polymers, Elastomers and Composites
   - Sustainable Engineering Concepts and Life Cycle Analysis
   - Introduction To Process Modeling In The Membrane Separation Process
   - Modeling Stochastic phenomena for Engineering applications: Part-1
   - Physical And Electrochemical Characterizations In Chemical Engineering
   - Soft Nano Technology
   - Introduction To Industry 4.0 And Industrial Internet of Things
   - Machine Learning for Engineering and science applications

3. Dr. L. Muruganantham and Dr. Udaya Bhaskar Reddy Ragula suggested introducing, "Flow Simulation for Beginners", as a capsule course. Additionally, Dr. Udaya Bhaskar Reddy Ragula proposed teaching OpenFOAM, an open-source software for CFD, to students.
4. Dr. L. Muruganandam suggested use of the user-define functions in DWSIM. He also recommended the use of openFOAM in microscale simulations.
5. Mr. Ravi Ramasamy highlighted the importance of safety-related software courses. Dr. Udaya Bhaskar Reddy Ragula suggested teaching Life Cycle Analysis (LCA) using OpenLCA to students, as it will be an added advantage to the students.
6. Dr. Udaya Bhaskar Reddy Ragula recommended teaching, "Data Analytics for Chemical Engineers", using Power BI to students.
7. Dr. S. Balasubramanian presented the CO – PO attainment to the BoS members and discussed the attainment target. The target revision will be shared by the BoS members in due course.
8. Dr. S. Balasubramanian discussed the revision of Course Outcomes and the Assessment Pattern in the forthcoming regulations. Dr. P. Kalaichelvi suggested to have a separate assessment pattern for analytical courses that incorporates case studies.
9. Approved list of institution for the question paper setting is accepted by the BoS members.
   Dr P. Kalaichelvi recommended that the faculty members handled a particular subject more than five times can be considered for setting the question papers, instead of general five years of experience.
10. Dr. S. Balasubramanian discussed about Program Exit Survey and requested the suggestions from BoS members. Dr. P. Kalaichelvi suggested to include employment details after completion of program in the exit survey.
11. BoS members appreciated the Institute wide recommendations for the new regulations R2025 and curriculum design for R2025.
12. Dr. Udaya Bhaskar Reddy Ragula suggested, different mark schemes for questions in design-based courses. For instance, the design course questions need not be restricted to a minimum marks of 6 and a maximum marks of 12, it can go beyond 12 marks for a question.
13. Dr P. Kalaichelvi, suggested that the credit allocation for non-academic activities can be fixed based on the collective decision at Institute level.
14. Regarding the new regulation, R2025, Dr. S. Balasubramanian and Dr, S. Pranav asked feedback on including Program Core subjects and concepts in the first semester. Members suggested that Program Core subjects shall be taught from the second semester, as students require a settling period in the first semester.
15. Dr. S. Balasubramanian and Dr. S. Karunakaran requested, suggestions for conducting open-book examinations. Dr. Udaya Bhaskar Reddy Ragula discussed the advantages and

disadvantages of open-book examinations. He recommended the implementation of open-book or internet-based assignments for one course per semester. Dr. P. Kalaichelvi recommended to start with, use the case studies in assignments for open book assessments, then based on the teacher-student experience in the assignments, include open-book exams in core subjects.

16. Mr. Ravi Ramasamy emphasized the importance of students preparing for the GATE examination to enhance their employability in EPC companies.
17. Dr. P. Kalaichelvi inquired about including Revised Bloom's Taxonomy in the evaluation process. Dr. S. Balasubramanian clarified that Revised Bloom's Taxonomy levels are included in both End semester Examinations (ESE) and Continuous Internal Assessment Test (CIAT) question papers.
18. Students, Ms. S. Aishwarya (2nd year, Chemical) and Ms. B. Umamaheshwari (4th year, Chemical) suggested to include the software's (MATLAB, Aspen Plus, DWSIM *etc.*) in the courses from V semester onwards.
19. Ms. B. Umamaheshwari (4th Year, Chemical) suggested to have the U21CH703 Process Equipment Design in 6th Semester instead of offering it in 7th Semester.
20. Student, Mr. G. Kumaran (4th year, Chemical) suggested to check the course content overlaps in safety courses offered as open elective and professional elective courses.
21. Dr. P. Kalaichelvi recommended to have a Faculty Development Program on Machine Learning for Chemical Engineers in association with Dr Arun K Tangirala, Professor, Chemical Engineering , IIT Madras.

23/12/2024

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