Department of Chemical Engineering

KPR Institute of Engineering and Technology

KPRIET
Learn Beyond

Eighth Board of Studies Meeting

Venue: Jasmine

Date: 04-05-2023

Time:10.30 A.M

Agenda:

To discuss and pass

1. Welcoming Board of Studies (BoS) Members
2. Discussion on the minutes of VII BoS meeting and action taken
3. Stakeholders inputs on curriculum design
4. Curriculum and syllabus for V to VIII semesters of UG programme under Regulations 2021
5. Professional Electives offered in different verticals under Regulations 2021
6. Open electives offered to other branches under Regulations 2021
7. Curriculum and syllabus for III to VIII semesters of UG programme under Regulations 2021 revised (Implementation of FISK (KPRIET SDG Innovathon Framework))
8. Suggest methodologies for innovative teaching and evaluation techniques
9. MOOC / Online Courses
10. Industry oriented courses (one credit courses)
11. Value added courses
12. Industrial Training / Internship
13. Any other matter

Members Present:

S. No.	Name of the member with Designation	Category	Signature
1.	**Dr. S. Balasubramanian** Professor Department of Chemical Engineering KPRIET.	Chairman Board of Studies	
2.	**Dr. P. Kalaichelvi** Professor Department of Chemical Engineering National Institute of Technology Trichy - 620015 Tamil Nadu, India.	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)	
4.	**Dr. L. Muruganandam** Professor Department of Chemical Engineering Vellore Institute of Technology Vellore - 632014, Tamil Nadu, India.	Academic Experts (Outside the parent University)	ONLINE
5.	**Mr. J. Ashwin Nirmal** Engineer - Process WOOD India Engineering Project Pvt. Ltd. Chennai - 600113	Industry Experts	ONLINE
6.	**Dr. N. Selvaraju** Associate Professor Department of Biosciences and Bioengineering (BSBE) IIT - Guwahati Assam, India - 781039	Special Invitee	ONLINE
7.	**Dr. V. T. Perarasu** Associate Professor Department of Chemical Engineering, AC TECH Campus, Anna University Chennai - 600025	Special Invitee	ONLINE
8.	**Mr. Ravi Ramasamy** Director Pragna Consultants Private Limited Nungambakkam, Chennai – 600034 Tamil Nadu, India	Special Invitee	

S. No.	Name of the member with Designation	Category	Signature
9.	**Mr.K.Sivabalsudhan** Design Engineer (Process)- Grade I Kavin Engineering Service Pvt.Ltd. TIDEL Parl, Coimbatore, Tamilnadu, India.	Alumini	ONLINE
10.	**Dr. M. Ramasamy** Professor Department of Chemical Engineering KPRIET, Coimbatore - 641407	Faculty member	
11.	**Dr. A. K. Priya** Professor Department of Chemical Engineering KPRIET, Coimbatore - 641407	Faculty member	For D
12.	**Dr.S.Karunakaran** Associate Professor, Department of Chemical Engineering, KPRIET	Faculty member	
13.	**Dr.G.Surendran** Associate Professor, Department of Chemical Engineering, KPRIET	Faculty member	
14.	**Dr.E.Nakkeeran** Assistant Professor (Sr.G) Department of Chemical Engineering, KPRIET	Faculty member	
15.	**Dr. R. Umapriya** Assistant Professor (Sl. G) Department of Chemical Engineering, KPRIET, Coimbatore - 641407	Faculty member	
16.	**Dr. M. Laxmi Deepak Bhatlu** Assistant Professor (Sl. G) Department of Chemical Engineering, KPRIET, Coimbatore - 641407	Faculty member	

S. No.	Name of the member with Designation	Category	Signature
17.	**Dr. Nitu Kumari** Assistant Professor (Sr. G) Department of Chemical Engineering, KPRIET, Coimbatore – 641407	Faculty member	
18.	**Dr. R. Bharathi Ganesan** Assistant Professor (Sr. G) Department of Chemical Engineering, KPRIET, Coimbatore - 641407	Faculty member	
19.	**Mr.K.Murugesan** Assistant Professor (Sr.G) Department of Chemical Engineering, KPRIET	Faculty member	
20.	**Mr.N.Arunkumar** Assistant Professor (Sr.G) Department of Chemical Engineering, KPRIET	Faculty member	
23.	**Ms. L. Dharani** Assistant Professor (Sr. G) Department of Chemical Engineering, KPRIET, Coimbatore - 641407	Faculty member	
24.	**Mr. Teepak Soorya** III B.Tech. Chemical Engineering	Student Member	
25.	**Ms. Judith Infanta** III B.Tech. Chemical Engineering	Student Member	
26.	**Mr. G. Kumaran** II B.Tech. Chemical Engineering	Student Member	
27.	**Ms. B. Umamaheswari** II B.Tech. Chemical Engineering	Student Member	

Minutes of the 8thMeeting of The Board of Studies:

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 resolutions were discussed.

RESOLUTIONS:

1. **Action taken on the minutesaof the 7th BoS meeting:**

Sl. No.	Suggestions	Suggested By	Action Taken
1	(a) Suggested to verify if Disaster Management course be provided as Mandatory Non Credit (MNC) course in semester II.	Dr. Udaya Bhaskar Reddy	It is verified in the model AICTE curriculum and observed that it is not a mandatory non-credit course for chemical engineering. However, Environmental sciences course prescribed by AICTE model curriculum 2018 is retained
	(b) Suggested that the Environmental Sciences course U21MN001 be replaced as the syllabus overlaps with U21CH304 Environmental Science and Engineering offered in semester III.	Mr. G. Kumaran	The subject U21CH304 Environmental Science and Engineering offered in III semester consist of J component (project). The overlapped contents between Mandatory Non-Credit (MNC) course in semester II U21MYC02 Environmental Sciences and U21CH304 Environmental Science and Engineering are verified and complied.
2	Not to offer courses with only commercial or copyrighted titles as course titles, as in Industrial value-added courses "MATLAB" or "Aspen Plus". Instead "Introduction or Fundamentals of MATLAB programming" is acceptable.	Dr. Udaya Bhaskar Reddy	It was decided to rename the value added one credit courses suitably.
3	Inquired if Transport phenomena and Chemical Technology courses are offered in the curriculum. These courses are not in professional core courses (PCC).	Dr. L. Muruganandam	Transport phenomena offered as professional elective in vertical 1 due to credit constrains and Chemical Technology (U21CH602-Chemical Process Industries)

			is offered in VI semester under professional core courses
Sl. No.	**Suggestions**	**Suggested By**	**Action Taken**
4	To include more research based professional electives as currently only Computational Fluid Dynamics is offered	Dr. L. Muruganandam	In addition to Computational Fluid Dynamics, under 6 vertical's different research courses (Transport phenomena (Vertical-1), nano science and nano technology (Vertical-2)) are added in the professional electives.
5	To update all the textbooks to latest edition or reprints or replace with newer textbook references	Dr. L. Muruganandam and Dr. M. Ramasamy	Complied
6	Enquired about whether the Honors and Minors information be reflected in the certificate. BoS Chairman clarified that it will be present in the certificate. This shall be confirmed with the Controller of Examination (CoE)	Dr. P. Kalaichelvi	Yes, it is confirmed with CoE
7	Inquired about whether AUTOCAD is used in the Process Equipment Design in addition to the pen or pencil and paper approach. It was suggested to add a faculty demonstration of drawing software to the students	Dr. P. Kalaichelvi	AUTOCAD is included in the J component of U21CH703-Process Equipment Design which is offered in semester VII.
8	Praised the efforts taken by the Institute and the Department. He added that Course Outcomes (CO) can be knowledge level based also rather than the current system of unit based	Dr. N. Selvaraju	Department thanks for the appreciation and suggestions. Course Outcomes (CO) based on knowledge level is under the discussion at the institute level.
9	Suggested to provide the full list of open elective courses (OEC) that Chemical Engineering students can take from other departments well before the course	Dr. M. Ramasamy	The open elective courses are decided based on the availability of faculty expertise from the other departments. However, the decision from

	registration process		other departments will be made available well in advance.
Sl. No.	**Suggestions**	**Suggested By**	**Action Taken**
10.	Suggested to update all the textbooks to latest edition or reprints or replace with newer textbook references	Dr. M. Ramasamy	Complied
11.	Suggested to replace Project Phase I and II with "Plant Design I and II" so that we are aligned towards product-based technology rather than engineering	Dr. M. Ramasamy	The projects are in general broad in nature (theoretical – design and simulation, experimental) and may not be limited to plant design alone. However, the recommendation may be reconsidered based on stake holder's input.
12.	Suggested to widen the list of software's used in the curriculum to MATLAB, Aspen Plus, DWSIM, Cape Open, COCO, AutoCAD, OpenFOAM etc	Dr. L. Muruganandam and Dr. M. Ramasamy	Complied. The use of ASPEN PLUS is included in the course U21CH705 Design & Simulation Lab, other software's such as MATLAB, DWSIM, Cape Open, COCO, Open FOAM, COMSOL, Mutiphysics. ANSYS, shall be used as a tool in the vertical 6 (Computational Chemical Engineering) by subject handling faculty memebers
13.	Suggested to add battery technologies such as hydrogen cells, Li or Na ion based in PEC Energy Technology course	Mr. K. Sivabalasudhan	Complied and offered in MOOC courses
14.	Suggested to add Hindi as a value-added course during Saturdays to enhance the employability skill all over India	Mr. K. Sivabalasudhan	The language department will offer based on student interest and enrollment at the institute level
15.	Informed the Board that Engineers need to have broad range of knowledge to communicate with other discipline Engineers and operators. Hence, he suggested to have an elective course as Production Engineering which refreshes the knowledge of electrical,	Mr. K. Sivabalasudhan	VII semester professional/open elective shall be offered aligned with mechanical, electrical, instrumentation and safety

	electronics, mechanical, instrumentation and safety in Semester VII		
Sl. No.	**Suggestions**	**Suggested By**	**Action Taken**
16.	(a) Dr. S. Ramachandran Discussed about the need of Chemical Reaction Engineering II as a compulsory professional core course U21CH701. (b) Dr. Surendran G pointed out that Process Control Lab, Chemical Reaction Engineering Lab, Heat Transfer Lab and Mass Transfer Lab credits were reduced to 1 from previous credit of 2. Dr. Surendran G raised the possibility of students neglecting lab courses due to reduced credit but long hours of input, which may lead to low or poor development of psychomotor skills in students. This may reduce the employability skills of the students. Finally, it was left open to decide if this U21CH701 course be removed and credits to Laboratory courses increased.	Dr. S. Ramachandran and Dr. G. Surendran	Complied and added in curriculum. The credits for the laboratory courses are retained as 1 due to credit constraints. However, the content in the laboratory courses shall be delivered as per the credit t.
17.	Felt that the introduction of J component in Process Equipment Design U21CH703 will make the course tougher.	Dr. Nitu Kumari	The faculty handling the course can frame the projects using software tools as well. It was also suggested that the faculty can develop the project skills in the students according to his/her subject expertise.
18.	Student representative pointed out that the Unit II syllabus of U21CH201 Introduction to Chemical Engineering is high. This was supported by the subject handling faculty Mr. K. Murugesan who also recommended reduction in syllabus.	Ms. B. Umamaheswari	Complied

2. Minutes of the 8th Meeting of The Board of Studies

1. All members of the Board of Studies (BoS) expressed their appreciation for the action taken report of the previous (VII) BoS meeting. This positive feedback acknowledges the efforts of the previous BoS and encourages continued progress towards achieving the educational goals and objectives of the department and institution.

2. Dr. Ravi Ramaswamy has suggested that the syllabus content for U21CH20 Introduction to Chemical Engineering course be reduced and integrated into another relevant subject. It is recommended that the course coordinators and relevant faculty member review and consider this proposal in order to optimize the syllabus and ensure an effective and streamlined learning experience for students.

3. Dr. Ravi Ramaswamy has recommended that our current mission statement would benefit from further development to include a clear vision statement. As such, it is advised that we allocate resources towards crafting a more defined vision statement to guide our future organizational efforts.

4. Dr. Uday Bhaskar Reddy has recommended that the process of formulating a vision statement should be viewed as a long-term endeavor, spanning approximately 15 years. In light of this perspective, it is advisable to approach the development of vision statements with a forward-thinking and strategic mindset, carefully considering the potential impact and alignment with future institutional objectives.

5. Dr. N. Selvaraj has suggested focusing efforts on a project that is based on funded project, as it would be highly beneficial to both students and the accreditation process. This recommendation recognizes the potential value of a funded project, which can enhance the learning experience of students and contribute to the overall quality and reputation of the institution. As such, it is advisable to explore and prioritize relevant projects that align with these goals.

6. Dr. L. Murugantham recommended the implementation of the FISK approach and recognized it as a useful and effective method. He emphasized that if this approach is properly communicated and taught to the students, it can have a significant impact on their learning outcomes. This feedback highlights the potential benefits of the FISK approach and encourages its continued use and dissemination among students.

7. Dr. L. Muruganandam emphasized to concentrate on achieving the CO-PO (Course Outcome-Program Outcome) requirements for the National Board of Accreditation (NBA). This suggestion highlights the importance of meeting the necessary standards and benchmarks set by the NBA for accreditation purposes. It is advisable to prioritize activities and initiatives that are aligned with these requirements in order to ensure a successful accreditation outcome.

8. Dr. P. Kalaiselvi has recommended incorporating the J component into the mini project, while also acknowledging that the FISK approach, which is project-based, can be demanding on students. This feedback recognizes the potential value of the J component and its contribution to the overall learning outcomes of the mini project. One key point to consider is the importance of the workload and expectations of the students, particularly in the context of project-based courses like FISK. It is advisable to strike a balance between these considerations in order to optimize the learning experience for students.

9. Dr. Kalai Selvi inquired about the use of Bloom's taxonomy in question papers. The Chairman of the Board of Studies (BoS) confirmed that KPRIET (KPR Institute of Engineering and Technology) follows Bloom's taxonomy in its question papers. This exchange highlights the importance of using appropriate assessment methods and strategies that are aligned with the learning outcomes and objectives of the course. By utilizing Bloom's taxonomy, KPRIET is able to ensure that its question papers are designed to evaluate students' critical thinking skills and higher-order cognitive abilities.

10. Dr. V.T. Perarasu has suggested that the science subject lab is allocated two credits, while the core subject is allocated only one credit. In light of this, he recommends verifying the credit allocation and considering a reduction in the workload of the students accordingly. This feedback highlights the need to ensure that the credit allocation is fair and consistent across different subjects and components of the curriculum.

11. Dr. Uday Bhaskar suggested to use software tools whenever necessary in courses. This feedback emphasizes the potential benefits of incorporating technology and digital tools in the teaching and learning process. By using software tools, students can enhance their understanding of complex concepts and develop valuable technical skills that are relevant to their future careers. It is advisable to explore and incorporate appropriate software tools in courses as needed, in order to optimize the learning outcomes for students

12. Dr. Uday Bhaskar Reddy has recommended removing the term "understanding" from the course outcome (CO) attainment criteria, as it is not a verb. He suggests reworking the COs for all courses accordingly. This feedback highlights the importance of clear and concise language in defining learning outcomes and objectives. By using appropriate verbs in the COs, it is easier to assess and measure students' achievement of the intended learning outcomes.

13. Dr. Uday Bhaskar Reddy has recommended keeping the Mass Transfer course in the 5th and 6th semesters and the Chemical Reaction Engineering (CRE) lab in the 7th semester. He also suggested to reshuffle the Chemical Reaction Engineering, Chemical Engineering Thermodynamics, and Mass Transfer courses based on the order (or sequence) of learning of fundamental principles connected to each other. This feedback highlights the potential benefits of reorganizing the course sequence to optimize the learning outcomes for students. By carefully structuring the course

sequence, students can build upon their knowledge and skills in a logical and progressive manner.

14. Dr. Uday Bhaskar Reddy has enquired about the Chemical Process Industries course and recommended moving it to the 4th semester. This feedback emphasizes the need to carefully consider the course offerings and sequence to ensure that students receive a well-rounded education in chemical engineering.

Chairman – BoS/CHEMICAL