

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd. w/s 3 of UGC Act 1956



CHEMICAL ENGINEERING DEPARTMENT

CIRCULAR

Date: 16.03.2024

Chemical Engineering Department is going to conduct Board of Studies (BoS) meeting for the B.Tech. programme in Chemical Engineering on **23.03.2024** in online mode from 2.00 p.m. onward with the following Zoom link:

<https://us06web.zoom.us/j/84640118162?pwd=YVYwMlFrcmZTRUU0LzNDc0YyVHZvQT09>

All the members are requested to make it convenient to attend the meeting.

The members are

S. No.	Name of the Member	Designation	Role
1.	Dr. M. Ramesh Naidu	Professor & Head	Chairperson
2.	Dr. B. Sumalatha	Associate Professor	Member Secretary
Internal Experts			
1	Dr. T. Subbaiah	Research Advisor	Member (Nominee of Dean R&D)
2	Dr. P. Ashok Kumar	Professor	Member
3	Dr. P. Bangaraiah	Professor	Member
4	Dr. P. Vijetha	Associate Professor	Member
External Experts			
1	Dr. Nageswara Rao Peela	Professor, Dept. of Chemical Engineering, IIT-Guwahati Mail Id: peelanr@iitg.ac.in Mobile No:+918486877575	External Member
2	Dr. Sunil Dhole	Director, Technorbital Advanced Material Pvt. Ltd., Kanpur Mail Id: sunil@chemdist.in Mobile No:+919559213333	External Member
3	Dr. Venkata Satyanarayana Suggala	Professor, Dept. of Chemical Engineering, JNTU-Ananthapur Mail Id: svsatya7@gmail.com Mobile No:9849509167	Invited Member

Agenda of the BoS Meeting:

1. Points for approval

- Revision of R22 Curriculum.
- SWAYAM-NPTEL courses
- L-T-P structure, number of credits and syllabus of R22 courses.
- Honor/minor/department elective/open elective courses, if any that are not approved earlier.

2. Points for discussion

- Results of previous semester-FA, SA, Grades, Correlations.
- Summative question papers of the academic year 2022-23, I semester.
- Attainments – process, rubrics, CO/PO/PSO and SO values.
- Best practices of Formative assessment (Pre-T1, T1, T2, T3 and T5).
- Best practices of T&P activities.
- Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2022-23 & 2023-24.


Member Secretary


Chairperson

HEAD
Department of Chemical Engineering
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DEPARTMENT OF CHEMICAL ENGINEERING

Date: 23.03.2024

Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting for B.Tech., program in Chemical Engineering was conducted on 23rd March 2024 in blended mode from 2.00 p.m. onwards. The BoS meeting was held at the office of Head of the department of Chemical Engineering, VFSTR, Vadlamudi. All the external members joined through Zoom link:

<https://us06web.zoom.us/j/84640118162?pwd=YVYwMlFrcmZTRUU0LzNDc0YyVHZvQT09>

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- Best practices of Formative assessment (Pre-T1, T1, T2, T3 and T5).
- Best practices of T&P activities.
- Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2022-23 & 2023-24.

The following members were present:

S.No.	Name of the Member	Designation	Role
1.	Dr. M. Ramesh Naidu	Professor & Head	Chairperson <i>Ramesh</i>
2.	Dr. B. Sumalatha	Associate Professor	Member Secretary <i>B.S. latha</i>
Internal Experts			
1	Dr. T. Subbaiah	Research Advisor	Member <i>T. Subbaiah</i> (Nominee of Dean R&D)
2	Dr. P. Ashok Kumar	Professor	Member <i>Ashok Kumar</i>
3	Dr. P. Bangaraiah	Professor	Member <i>B. Bangaraiah</i>
4	Dr. P. Vijetha	Associate Professor	Member <i>Vijetha</i>
External Experts			
1	Dr. Nageswara Rao Peela	Professor, Dept. of Chemical Engineering, IIT-Guwahati Mail Id: peelanr@iitg.ac.in Mobile No:+918486877575	External Member <i>online</i>
2	Dr. Sunil Dhole	Director, Technorbital Advanced Material Pvt. Ltd., Kanpur Mail Id: sunil@chemdist.in Mobile No:+919559213333	External Member <i>online</i>
3	Dr. Venkata Satyanarayana Suggala	Professor, Dept. of Chemical Engineering, JNTU-Ananthapur Mail Id: svsatya7@gmail.com Mobile No:9849509167	Invited Member <i>online</i>

Chairperson, Dr. M. Ramesh Naidu opened the meeting by welcoming and introducing the external members, and invitees to the internal members and explained the agenda points of the meeting.

The following points were discussed in the BOS meeting:

1. Approval of Revision of R22 Curriculum.
2. Summative question papers of the academic year 2022-23, I semester.
3. Discussion of results-FA, SA, Grades, Correlation of the academic year 2022-23, I semester.
4. Approval of change in L-T-P structure, number of credits and syllabus R22 courses.
5. Approval of SWAYAM-NPTEL courses / Ratifications of previous approved courses.
6. Approval of Honor/minor/department elective/open elective courses, if any that are not approved earlier.
7. Discussion of attainments – process, rubrics, CO/PO/PSO and SO values.
8. Best practices of Formative assessment (Pre-T1, T1, T2, T3 and T5).
9. Best practices of T&P activities.
10. Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2022-23.

The following resolutions were made after discussion:

1. The committee reviewed and approved the course structure of B. Tech in Chemical engineering program (CR24) based on the analysis of feedback collected from various stake holders by DAAC of Department of Chemical Engineering, VFSTR.
2. A new course, Design Thinking and Engineering Orientation, course content was reviewed and approved by BoS members.
3. Prof. Nageswara Rao Peela, IIT Guwahati, suggested to include the subject namely; Ethics for Engineers in the fourth year first semester under the section of Humanities to emphasize ethical practices in education, research, and industries.
4. Prof. Venkata Satyanarayana Suggala., appreciated the induction of NEP2020 components in R22.
5. Three new departmental electives were introduced such as, Conventional and Non-Conventional Energy Resources, Natural Gas Engineering and Energy Resources Management, Process Modelling, Simulation and Optimization Techniques.
6. All members reviewed the syllabus of core courses and departmental electives
7. BoS members reviewed and approved the NPTEL courses proposed by the DAAC.
8. The members elaborately discussed summative question papers pattern and assessment and appreciated the philosophy of R22 curriculum and assessment pattern.

Suggestions given by the members, would be incorporated appropriately in the curriculum and Syllabus of the revised regulation R22 and this will be recommended to the Academic Council of VFSTR for the approval.

The Chairperson thanked all the external, internal and invited members for their active participated in the meeting.


Member Secretary


Chairperson

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COURSE STRUCTURE – IV YEAR

IV Year I Semester

Course Title	C	Course category
Professional ethics	2	Humanities
Professional core – 12	4	Chemical Technology
Department elective – 6	3	Department Elective
Professional core – 13	3	Chemical Engineering Plant Design and Economics
Department Elective – 4	4	Department Elective
Department Elective – 5	4	Department Elective
Industry interface course (Modular course)	1	

Cour
Internship / P
T

Dr. sunil dhole

VFSTR CHEM

Suggala Venkata Satwanarayana

Nageswara Rao Peela

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DEPARTMENT OF CHEMICAL ENGINEERING**APPENDIX I****B. Tech Chemical Engineering : Curriculum Structure****I Year I Semester**

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Mathematics – I / Mathematics – II	3	2	0	4	Basic Sciences	Department of Mathematics
2	Physics / Chemistry	3	0	2	4	Basic Sciences	Department of Physics/Chemistry
3	Basic of Electrical & Electronics Engineering/ Engineering Graphics	2	0	2	3	Basic Engineering	Department of EEE
4	Programming in C	1	0	4	3	Basic Engineering	Department of T&P
5	IT Tools & Cyber security	0	2	2	2	Basic Engineering	Department of T&P
6	English Proficiency & Communication Skills (PET)	0	0	2	1	Humanities	Department of T&P
7	Environmental Studies / Management Studies	2	2	0	3	Basic Sciences / Humanities	Department of Chemistry/Management
	Total	11	6	12	20		

I Year II Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Mathematics – I / Mathematics – II	3	2	0	4	Basic Sciences	Department of Mathematics
2	Physics / Chemistry	3	0	2	4	Basic Sciences	Department of Physics/Chemistry
3	Basic of Electrical & Electronics Engineering/ Engineering Graphics	2	0	2	3	Basic Engineering	Department of EEE
4	Competitive coding	0	2	4	3	Basic Engineering	Department of T&P
5	Technical English Communication	2	0	2	3	Humanities	Department of English
6	Environmental Studies / Management Studies	2	2	0	3	Basic Sciences / Humanities	Department of Chemistry/Management
	Total	12	6	10	20		

II Year I Semester

S.No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Probability and Statistics	3	0	2	4	Basic Sciences	
2	Data Structures and Algorithms	2	2	2	4	Basic Engineering	Department of T&P
3	Analytical Chemistry	2	0	2	3	Branch specific basic science course	Department of Chemistry
4	Chemical Engineering Thermodynamics -I	2	4	0	4	Professional core	Chemical Engg. Department
5	Chemical Process Calculations	2	4	0	4	Professional core	Chemical Engg. Department
6	Momentum Transfer	2	2	2	4	Professional core	Chemical Engg. Department
7	Design Thinking & Engineering Orientation	0	0	2	1	Basic Engineering	Chemical Engg. Department
	Total	13	12	10	24		

II Year II Semester

S. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Numerical Methods	2	4	0	4	Basic Sciences	Department of Mathematics
2	Practicing Data Structures	0	0	2	1	Basic Engineering	Department of T&P
3	Mechanical Unit Operations	2	2	2	4	Professional core	Chemical Engg. Department
4	Process Heat Transfer	2	2	2	4	Professional core	Chemical Engg. Department
5	Chemical Engineering Thermodynamics - II	2	4	0	4	Professional core	Chemical Engg. Department
6	Open Elective – 1	2	2	0	3	Open Elective	
	Field/Inter-Disciplinary Project-Phase I	0	0	2	1	Project	Chemical Engg. Department
	Total	10	14	8	21		
	Minor / Honors – 1	3	2	0	4		
	Total	14	13	8	25		

III Year I Semester

S. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Soft Skills Lab	0	0	2	1	Humanities	Department of T&P
2	Chemical Reaction Engineering - I	2	2	2	4	Professional core	Chemical Engg. Department
3	Mass Transfer Operations - I	2	2	2	4	Professional core	Chemical Engg. Department
4	Department Elective – 1	2	4	0	4	Department Elective	Chemical Engg. Department
5	Department Elective – 2	2	4	0	4	Department Elective	Chemical Engg. Department
6	Open Elective – 2	2	2	0	3	Open Elective	
	BEC Certification	-	-	-	1		Department of English
	Total	10	10	10	21		
	Minor / Honors – 2	3	2	0	4		
	Total	13	12	10	25		

III Year II Semester

S. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Quantitative aptitude and Logical Reasoning	1	2	0	2	Humanities	Department of T&P
2	Chemical Reaction Engineering - II	2	2	0	3	Professional core	Chemical Engg. Department
3	Mass Transfer Operations - II	2	2	2	4	Professional core	Chemical Engg. Department
4	Process Dynamics and Control	2	2	2	4	Professional core	Chemical Engg. Department
5	Department Elective – 3	2	4	0	4	Department Elective	Chemical Engg. Department
6	Open Elective – 3	2	2	0	3	Open Elective	
7	Field/Inter-Disciplinary Project-Phase II	0	0	2	1	Project	Chemical Engg. Department
	Total	11	12	6	21		
	Minor / Honors – 3	3	2	0	4		
	Total	14	14	6	25		

IV Year I Semester


S. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Professional ethics for Engineers	1	2	0	2	Humanities	Chemical Engg. Department
2	Chemical Engineering Plant Design and Process Economics	2	2	0	3	Professional core	Chemical Engg. Department
3	Chemical Technology	2	2	2	4	Professional core	Chemical Engg. Department
4	Department Elective – 4	2	4	0	4	Department Elective	Chemical Engg. Department
5	Department Elective – 5	2	4	0	4	Department Elective	Chemical Engg. Department
6	Department Elective – 6	0	6	0	3	Department Elective	Chemical Engg. Department
	Industry interface course (Modular course)	1	0	0	1	Binary Grades	Chemical Engg. Department
	Total	13	12	2	21		
	Minor / Honors – 4	3	2	0	4		
	Total	16	14	2	25		

IV Year II Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Internship / Project Work		2#	22	12	Project	Chemical Engg. Department
	Total				12		
2	Minor / Honors – 5 (for project)		2	6	4	Theory course may be also offered	Chemical Engg. Department
	Total				16		

Compulsory Audit Courses

Course titles	Credits	Year (Sem)
Orientation session - 1 (Induction program)	1	1(1)
Constitution of India	1	1(1)
Physical fitness	1	1(1)
Life skills	1	2(1)
Orientation session -2 (Whole first semester)	1	1(2)
Universal Human Values	1	1(2)
Indian Knowledge Systems – Dept. specific	1	1(2)


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List of Departmental Electives:

S. No.	Course Title	L	T	P	C
1	Environmental Engineering	2	4	0	4
2	Environmental Regulations and Impact Analysis	2	4	0	4
3	Industrial Effluent Treatment Methods	2	4	0	4
4	Solid Waste Management and Treatment	2	4	0	4
5	Conventional and Non-Conventional Energy Resources	2	4	0	4
6	Energy Integration	2	4	0	4
7	Energy Management and Auditing	2	4	0	4
8	Green Fuels	2	4	0	4
9	Waste Heat Recovery	2	4	0	4
10	Waste to Energy Conversion	2	4	0	4
11	Health, Environment and Safety Management	2	4	0	4
12	Industrial Safety Engineering	2	4	0	4
13	Natural Gas Engineering and Energy Resources Management	2	4	0	4
14	Petrochemicals	2	4	0	4
15	Petroleum Refinery Engineering	2	4	0	4
16	Surface Production Operation	2	4	0	4
17	Aspen Plus: Chemical Engineering Application	2	4	0	4
18	Computational Fluid Dynamics	2	4	0	4
19	Fundamentals of Nanotechnology	2	4	0	4
20	Industrial Instrumentation	2	4	0	4
21	MATLAB Programming for Chemical Engineers	2	4	0	4
22	Novel Separation Processes	2	4	0	4
23	Process Modelling, Simulation and Optimization Techniques	2	4	0	4
24	Transport Phenomena	2	4	0	4
25	Analysis of Techno-Economic Feasibility of the Chemical Process Plant	0	6	0	3