BOS Minutes

R19

B.Tech - Chemical

VIGNAN'S
Foundation for Science, Technology & Research
(Deemed to be UNIVERSITY)
-Estd. u/s 3 of UGC Act 1956

DEPARTMENT OF CHEMICAL ENGINEERING

Date: 15.05.2019

Minutes of Board of Studies (BOS) meeting of B.Tech Chemical Engineering program held on 15-05-2019 at office Head of the department, Department of Chemical Engineering, VFSTR, Vadlamudi.

Agenda of the meeting:

1. To discuss and finalize structure and detailed syllabus for B.Tech Chemical Engineering program applicable from 2019-20 admitted batch.

Members present:

S.No	Name	Members	Signature
1.	Dr. M. Ramesh Naidu, Head, Department of Chemical Engineering, VFSTR, Vadlamudi.	Chairman, BOS	
2.	Dr. Y. Pydi Setty, Professor, Department of Chemical Engineering, National Institute of Technology, Warangal	Invited member	
3.	Dr. G. Prabhakar, Professor. Department of Chemical Engineering, S. V. U. College of Engineering. Tirupati.	Invited member	
4.	Sri R. Banerjee Babu, General Manager, Production, JOCIL, Dokiparu.	Invited member	
5.	Dr. M. Prasad Babu, Manager, R&D-DSB, NFCL, Hyderabad NFCL.	Invited member	M.P. Baby
6.	Dr. P. Ashok Kumar, Associate Professor. Department of Chemical Engineering, VFSTR, Vadlamudi	Internal Member	
7.	Dr. P. Bangaraiah, Associate Professor, Department of Chemical Engineering, VFSTR, Vadlamudi.	Internal Member	
8.	Dr. B. Sumalatha Assistant Professor, Department of Chemical Engineering,VFSTR. Vadlamudi	Internal Member	

Minutes of the BOS meeting

1. The chairman greeted all the BOS members.
2. The chairman emphasized broad objectives of the proposed changes in the course structure of B.Tech Chemical Engineering program.
3. The chairmen also elucidated in detail the suggestions and remarks communicated from various stakeholders.
4. The members of the BOS painstakingly observed the proposals of Department of Chemical Engineering in the light of suggestions made by experts and recommended a new course structure for B.Tech Chemical Engineering program.

After the discussion it is resolved to:

1. Propose and approve course structure for all 4 years of B.Tech. Program in Chemical Engineering (Appendix-I).
2. Propose and approve detailed syllabus for the 4 year of B.Tech. Program in Chemical Engineering with effect from the academic year 2019-20. The proposed structure and syllabus are applicable for 2019 admitted batch onwards.
3. Stakeholder's feedback is collected, analyzed and given paramount priority while designing the curriculum and their suggestions are implemented.
4. The curriculum follows choice-based credit system.
5. Major restructuring has taken place in the curriculum towards Project based learning with inclusion of Intradisciplinary, Inter-departmental and Societal centric and industry related projects.
6. Major reformation has taken place in the curriculum by offering new courses and electives such as General pharmacy, pre-formulation studies, industrial pharmacy, MATLab programming, Energy Management and auditing etc.
7. The total percentage of syllabus revision for B.Tech Chemical Engineering Program is 45%.
8. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development (Appendix- II).
9. In the B.Tech. Chemical Engineering revised regulation R19, the significant changes are made in the content of all courses and hence the courses are considered as new courses (Appendix- III).

APPENDIX – I

Course Structure

I Year I Semester

Course Title	L	T	P	C
Engineering Mathematics - I (D)	3	1	2	5
Engineering Physics (B)	3	0	2	4
Basics of Electrical & Electronics Engineering	3	0	2	4
Engineering Graphics & Design	2	0	2	3
Chemical Engineering Thermodynamics - I	3	1	0	4
Physical Fitness, Sports & Games-I	0	0	3	1
Total	**14**	**1**	**11**	**21**

I Year II Semester

Course Title	L	T	P	C
Engineering Mathematics - II (D)	3	1	2	5
Organic Chemistry	3	0	2	4
Programming for Problem Solving	2	0	4	4
English Proficiency and Communication Skills	0	0	2	1
Technical English Communication	2	0	2	3
Constitution of India	1	0	0	1
Workshop	1	0	2	2
Momentum Transfer	3	0	2	4
Physical Fitness, Sports & Games-II	0	0	3	1
Total	**15**	**2**	**17**	**25**

II Year I Semester

Course Title	L	T	P	C
Chemical Process Calculations	3	1	0	4
Mechanical Unit Operations	3	0	2	4
Process Heat Transfer	3	0	2	4
Chemical Engineering Thermodynamics-II	3	1	0	4
Mass Transfer Operations-I	3	0	2	4
Life Skills-I	0	0	2	0
Technical Seminar-I	0	0	2	1
Intra-disciplinary Projects-I	0	0	3	1
Physical Fitness, Sports & Games-III	0	0	2	1
Total	**15**	**2**	**15**	**23**

II Year II Semester

Course Title	L	T	P	C
General Pharmacy	3	0	2	4
Chemical Reaction Engineering-I	3	1	0	4
Mass Transfer Operations-II	3	0	2	4
Environmental Studies	1	0	0	1
Department Elective-I	3	0	0	3
Management Science	3	0	0	3
Life Skills-II	0	0	2	1
Technical Seminar-II	0	0	2	1
Intra Disciplinary Projects-II	0	0	2	1
Open Elective-I	3	0	0	3
Total	**19**	**1**	**10**	**25**

III Year I Semester

Course Title	L	T	P	C
Pre-Formulation Studies	3	0	2	4
Chemical Reaction Engineering-II	3	0	2	4
Instrumentation and Process Control	3	0	2	4
Soft Skills Laboratory	0	0	2	1
Employability Skills-I	0	0	2	0
Human Values, Professional Ethics & Gender	2	0	0	2
Inter Departmental Projects-I	0	0	4	2
Modular Course	0	0	0	1
Department Elective-II	3	0	0	3
Open Elective-II	3	0	0	3
Total	**18**	**0**	**12**	**24**

III Year II Semester

Course Title	L	T	P	C
Chemical Engineering Process Design and	3	1	0	4
Industrial Pharmacy	3	0	2	4
Safety in Chemical Industries-I	3	1	0	3
Professional Communications Laboratory	0	0	2	1
Employability Skills-II	0	0	2	1
Inter Departmental Projects-II	0	0	4	2
Department Elective-III	3	0	0	3
Open Elective-III	3	0	0	3
Total	**15**	**1**	**10**	**21**

IV Year I Semester

Course Title	L	T	P	C
Quality Control of Pharmaceutical Dosage Forms	3	0	0	3
Safety in Chemical Industries-II	3	0	0	3
Industrial Process Technologies-I	3	0	0	3
Industrial Process Technologies-II	3	0	2	4
Societal Centric and Industry Related Project	0	0	6	3
Department Elective-IV	3	0	0	3
Total	**15**	**1**	**8**	**19**

IV Year II Semester

Course Title	L	T	P	C
Project work / Internship (Industry Oriented Projects)	0	0	24	12
Total	-	-	**24**	**12**

L = Lecture ; **T** = Tutorial ; **P** = Practical ; **C** = Credits

The courses that are highlighted denote implementation of 'Choice Based Credit System (CBCS)'

R-19 Department Elective Courses

ELECTIVE - I

Course Title	L	T	P	C
Material Technology	3	-	-	3
Industrial Effluent Treatment Methods	3	-	-	3
Energy Management and Auditing	3	-	-	3
Mineral Process Technology	3	-	-	3
Polymer Science and Engineering	3	-	-	3
Petro Chemicals	3	-	-	3
Fundamentals of Biotechnology	3	-	-	3

ELECTIVE - II

Course Title	L	T	P	C
Process Modelling and Simulation	3	-	-	3
Solid Waste Management and Treatment	3	-	-	3
Petroleum Refinery Engineering	3	-	-	3
Colloidal and Interfacial Science	3	-	-	3
Fundamentals of Nanotechnoogy	3	-	-	3
Membrane Technology	3	-	-	3
Bio Process Engineering	3	-	-	3

ELECTIVE - III

Course Title	L	T	P	C
Transport Phenomena	3	-	-	3
Energy Conservation and Waste Heat Recovery	3	-	-	3
Non Conventional Energy Sources	3	-	-	3
Computational Fluid Dynamics	3	-	-	3
Introduction to MAT Lab Programming	3	-	-	3

ELECTIVE - IV

Course Title	L	T	P	C
Design and Analysis of Experiments	3	-	-	3
MAT Lab Programming for Numerical	3	-	-	3
Optimization in Chemical Engineering	3	-	-	3
Chemical Process Equipment Design	3	-	-	3
Environmental Regulations and Impact Analysis	3	-	-	3

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DEPARTMENT OF CHEMICAL ENGINEERING

APPENDIX - II

List of courses that enable employability or entrepreneurship or skill development in the R-19 B.Tech – Chemical Engineering

Sl. No.	Semester (Year)	Core / Elective	Course Name	Employability/ Entrepreneurship/ Skill development
1	First Year (Semester I)	Core	Chemical Engineering Thermodynamics - I	Skill development
2	First Year (Semester II)	Core	Momentum Transfer	Skill development
3	Second Year (Semester I)	Core	Chemical Process Calculations	Skill development
4	Second Year (Semester I)	Core	Mechanical Unit Operations	Employability
5	Second Year (Semester I)	Core	Process Heat Transfer	Skill development
6	Second Year (Semester I)	Core	Chemical Engineering Thermodynamics - II	Skill development
7	Second Year (Semester I)	Core	Mass Transfer Operations - I	Skill development
8	Second Year (Semester I)	Employability Skills	Life Skills-I	Skill development
9	Second Year (Semester I)	Employability Skills	Technical Seminar-I	Skill development
10	Second Year (Semester I)	Employability Skills	Intra-disciplinary Projects-I	Skill development
11	Second Year (Semester I)	Employability Skills	Physical Fitness, Sports & Games-III	Skill development
12	Second Year (Semester II)	Core	General Pharmacy	Skill development
13	Second Year (Semester II)	Core	Chemical Reaction Engineering-I	Skill development
14	Second Year (Semester II)	Core	Mass Transfer Operations-II	Skill development
15	Second Year (Semester II)	Core	Environmental Science	Skill development

16	Second Year (Semester II)	Department Elective-I	Material Technology	Employability
17	Second Year (Semester II)	Department Elective-I	Industrial Effluent Treatment Methods	Employability
18	Second Year (Semester II)	Department Elective-I	Energy Management and Auditing	Skill development
19	Second Year (Semester II)	Department Elective-I	Mineral Process Technology	Employability
20	Second Year (Semester II)	Department Elective-I	Polymer Science and Engineering	Skill development
21	Second Year (Semester II)	Department Elective-I	Petro Chemicals	Skill development
22	Second Year (Semester II)	Department Elective-I	Fudamentals of Biotechnology	Skill development
23	Second Year (Semester II)	Core	Management Science	Employability
24	Second Year (Semester II)	Employability Skills	Life Skills-II	Skill development
25	Second Year (Semester II)	Employability Skills	Technical Seminar-II	Skill development
26	Second Year (Semester II)	Employability Skills	Intra Disciplinary Projects-II	Skill development
27	Third Year (Semester I)	Core	Pre-Formulation Studies	Skill development
28	Third Year (Semester I)	Core	Chemical Reaction Engineering-II	Skill development
29	Third Year (Semester I)	Core	Instrumentation and Process Control	Skill development
30	Third Year (Semester I)	Employability Skills	Soft Skills Laboratory	Skill development
31	Third Year (Semester I)	Employability Skills	Employability Skills-I	Employability
32	Third Year (Semester I)	Employability Skills	Human Values, Professional Ethics & Gender Equity	Employability
33	Third Year (Semester I)	Core	Inter Departmental Projects-I	Skill development
34	Third Year (Semester I)	Core	Modular Course	Skill development
35	Third Year (Semester I)	Department Elective-II	Process Modelling and Simulation	Skill development
36	Third Year (Semester I)	Department Elective-II	Solid Waste Management and Treatment	Employability
37	Third Year	Department	Petroleum Refinery Engineering	Skill

	(Semester I)	Elective-II		development
38	Third Year (Semester I)	Department Elective-II	Colloidal and Interfacial Science	Employability
39	Third Year (Semester I)	Department Elective-II	Fundamentals of Nanotechnoogy	Employability
40	Third Year (Semester I)	Department Elective-II	Membrane Technology	Employability
41	Third Year (Semester I)	Department Elective-II	Bio Process Engineering	Skill development
42	Third Year (Semester II)	Core	Chemical Engineering Process Design and Economics	Skill development
43	Third Year (Semester II)	Core	Industrial Pharmacy	Skill development
44	Third Year (Semester II)	Core	Safety in Chemical Industries-I	Skill development
45	Third Year (Semester II)	Employability Skills	Professional Communications Laboratory	Skill development
46	Third Year (Semester II)	Employability Skills	Employability Skills-II	Employability
47	Third Year (Semester II)	Core	Inter Departmental Projects-II	Skill development
48	Third Year (Semester II)	Department Elective-III	Transport Phenomena	Skill development
49	Third Year (Semester II)	Department Elective-III	Energy Conservation and Waste Heat Recovery	Skill development
50	Third Year (Semester II)	Department Elective-III	Non Conventional Energy Sources	Skill development
51	Third Year (Semester II)	Department Elective-III	Computational Fluid Dynamics	Skill development
52	Third Year (Semester II)	Department Elective-III	Introduction to Matlab Programming	Skill development
53	Fourth Year (Semester I)	Core	Quality Control of Pharmaceutical Dosage Forms	Employability
54	Fourth Year (Semester I)	Core	Safety in Chemical Industries-II	Skill development
55	Fourth Year (Semester I)	Core	Industrial Process Technologies-I	Skill development
56	Fourth Year (Semester I)	Core	Industrial Process Technologies-II	Skill development
57	Fourth Year (Semester I)	Employability Skills	Societal Centric and Industry Related Project	Employability
58	Fourth Year (Semester I)	Department Elective-IV	Design and Analysis of Experiments	Skill development
59	Fourth Year	Department	Matlab Programming for Numerical	Skill

	(Semester I)	Elective-IV	Computation	development
60	Fourth Year (Semester I)	Department Elective-IV	Optimization in Chemical Engineering	Skill development
61	Fourth Year (Semester I)	Department Elective-IV	Chemical Process Equipment Design	Skill development
62	Fourth Year (Semester I)	Department Elective-IV	Environmental Regulations and Impact Analysis	Skill development
63	Fourth Year (Semester II)	Core	Project work / Internship (Industry Oriented Projects)	Employability

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APPENDIX - III

List of new courses in the R-19
B.Tech – Chemical Engineering Curriculum

Sl. No.	Semester (Year)	Core / Elective	Course Name
1	First Year (Semester I)	Core	Chemical Engineering Thermodynamics - I
2	First Year (Semester II)	Core	Momentum Transfer
3	Second Year (Semester I)	Core	Chemical Process Calculations
4	Second Year (Semester I)	Core	Mechanical Unit Operations
5	Second Year (Semester I)	Core	Process Heat Transfer
6	Second Year (Semester I)	Core	Chemical Engineering Thermodynamics - II
7	Second Year (Semester I)	Core	Mass Transfer Operations - I
8	Second Year (Semester I)	Employability Skills	Life Skills-I
9	Second Year (Semester I)	Employability Skills	Technical Seminar-I
10	Second Year (Semester I)	Employability Skills	Intra-disciplinary Projects-I
11	Second Year (Semester I)	Employability Skills	Physical Fitness, Sports & Games-III
12	Second Year (Semester II)	Core	General Pharmacy
13	Second Year (Semester II)	Core	Chemical Reaction Engineering-I
14	Second Year (Semester II)	Core	Mass Transfer Operations-II
15	Second Year (Semester II)	Core	Environmental Science

16	Second Year (Semester II)	Department Elective-I	Material Technology
17	Second Year (Semester II)	Department Elective-I	Industrial Effluent Treatment Methods
18	Second Year (Semester II)	Department Elective-I	Energy Management and Auditing
19	Second Year (Semester II)	Department Elective-I	Mineral Process Technology
20	Second Year (Semester II)	Department Elective-I	Polymer Science and Engineering
21	Second Year (Semester II)	Department Elective-I	Petro Chemicals
22	Second Year (Semester II)	Department Elective-I	Fudamentals of Biotechnology
23	Second Year (Semester II)	Core	Management Science
24	Second Year (Semester II)	Employability Skills	Life Skills-II
25	Second Year (Semester II)	Employability Skills	Technical Seminar-II
26	Second Year (Semester II)	Employability Skills	Intra Disciplinary Projects-II
27	Third Year (Semester I)	Core	Pre-Formulation Studies
28	Third Year (Semester I)	Core	Chemical Reaction Engineering-II
29	Third Year (Semester I)	Core	Instrumentation and Process Control
30	Third Year (Semester I)	Employability Skills	Soft Skills Laboratory
31	Third Year (Semester I)	Employability Skills	Employability Skills-I
32	Third Year (Semester I)	Employability Skills	Human Values, Professional Ethics & Gender Equity
33	Third Year (Semester I)	Core	Inter Departmental Projects-I
34	Third Year (Semester I)	Core	Modular Course
35	Third Year (Semester I)	Department Elective-II	Process Modelling and Simulation
36	Third Year (Semester I)	Department Elective-II	Solid Waste Management and Treatment
37	Third Year	Department	Petroleum Refinery Engineering

	(Semester I)	Elective-II	
38	Third Year (Semester I)	Department Elective-II	Colloidal and Interfacial Science
39	Third Year (Semester I)	Department Elective-II	Fundamentals of Nanotechnoogy
40	Third Year (Semester I)	Department Elective-II	Membrane Technology
41	Third Year (Semester I)	Department Elective-II	Bio Process Engineering
42	Third Year (Semester II)	Core	Chemical Engineering Process Design and Economics
43	Third Year (Semester II)	Core	Industrial Pharmacy
44	Third Year (Semester II)	Core	Safety in Chemical Industries-I
45	Third Year (Semester II)	Employability Skills	Professional Communications Laboratory
46	Third Year (Semester II)	Employability Skills	Employability Skills-II
47	Third Year (Semester II)	Core	Inter Departmental Projects-II
48	Third Year (Semester II)	Department Elective-III	Transport Phenomena
49	Third Year (Semester II)	Department Elective-III	Energy Conservation and Waste Heat Recovery
50	Third Year (Semester II)	Department Elective-III	Non Conventional Energy Sources
51	Third Year (Semester II)	Department Elective-III	Computational Fluid Dynamics
52	Third Year (Semester II)	Department Elective-III	Introduction to Matlab Programming
53	Fourth Year (Semester I)	Core	Quality Control of Pharmaceutical Dosage Forms
54	Fourth Year (Semester I)	Core	Safety in Chemical Industries-II
55	Fourth Year (Semester I)	Core	Industrial Process Technologies-I
56	Fourth Year (Semester I)	Core	Industrial Process Technologies-II
57	Fourth Year (Semester I)	Employability Skills	Societal Centric and Industry Related Project
58	Fourth Year (Semester I)	Department Elective-IV	Design and Analysis of Experiments
59	Fourth Year	Department	Matlab Programming for Numerical Computation

	(Semester I)	Elective-IV	
60	Fourth Year (Semester I)	Department Elective-IV	Optimization in Chemical Engineering
61	Fourth Year (Semester I)	Department Elective-IV	Chemical Process Equipment Design
62	Fourth Year (Semester I)	Department Elective-IV	Environmental Regulations and Impact Analysis
63	Fourth Year (Semester II)	Core	Project work / Internship (Industry Oriented Projects)

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