# BOS MINUTES

Bitech - Chemical



#### DEPARTMENT OF CHEMICAL ENGINEERING

Date: 17.05.2016

Minutes of Board of Studies (BOS) meeting of B.Tech Chemical Engineering program held on 17-05-2016 at office Head of the department, Department of Chemical Engineering, Vignan's University, Vadlamudi.

#### Agenda of the meeting:

1. To discuss and finalize structure and detailed syllabus for B.Tech Chemical Engineering program applicable from 2016-17 admitted batch.

#### Members present:

S.No	Name	Members	Signature
1.	Dr. M. Ramesh Naidu, Head, Department of Chemical Engineering, Vignan's University	Chairman, BOS	fames
2.	Dr. G. Prabhakar. Professor. Dept. of Chemical Engineering, S V University, Tirupathi.	Invited member	fames h. Maly.
3.	Dr. V. V. Basava Rao, Dean, Faculty of Technology, OUCT, Osmania University, Hyderabad.	Invited member	Barre
4.	Sri R. Banerjee Babu, General Manager, Production, JOCIL, Dokiparu.	Invited member	U-
5.	Dr. M. Prasad Babu, Manager, R&D-DSB, NFCL, Hyderabad NFCL.	Invited member	M.P. Boby
6.	Mr. P. Ashok Kumar, Associate Professor, Department of Chemical Engineering, Vignan's University.	Internal Member	Nwen
7.	Mr. P. Bangaraiah, Associate Professor, Department of Chemical Engineering, Vignan's University	Internal Member	
8.	Dr. Krishna C Etika, Associate Professor, Department of Chemical Engineering, Vignan's University.	Internal Member	FILE

#### Minutes of the BOS meeting

- 1. The chairman greeted all the BOS members.
- The chairman emphasized broad objectives of the proposed changes in the course structure of B.Tech Chemical Engineering.
- 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).
- Propose and approve detailed syllabus for the 4 year of B.Tech. Program in Chemical Engineering with effect from the academic year 2016-17. The proposed structure and syllabus are applicable for 2016 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 with theoretical courses amalgamated with laboratory sessions along with Minor Projects.
- 6. Major reformation has taken place in the curriculum by offering new electives such as Solid Waste management and Treatment, Effluent Treatment Methods, Nonconventional Energy Sources, Environmental Regulations and Impact Assessment etc.
- 7. The total percentage of syllabus revision for B.Tech Chemical Engineering Program is 47%.
- 8. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development (Appendix -II).
- In the B.Tech. Chemical Engineering revised regulation R16, 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	3	1	2	5
Engineering Physics	3	-	-	3
Technical English Communication	3	-	2	4
Basics of Computers and Internet	3	-	2	4
Computer Programming	3	1	2	5
Basics of Engineering Products	3	-	2	4
English Proficiency and Communication Skills	-	-	2	1
Engineering Physics Laboratory	-	-	3	2
Total	18	2	15	28

#### I Year II Semester

Course Title	L	T	P	C
Engineering Mathematics-II	3	1	2	5
Engineering Chemistry	3	-	-	3
Engineering Graphics	1	-	3	3
Basics of Electrical and Electronics Engineering	3	-	2	4
Engineering Chemistry Laboratory	-	-	3	2
Environmental Science and Technology	2	-	-	2
Work shop Practice	-	-	3	2
Basics of Chemical Engineering	3	-	-	3
Total	15	1	13	24

### II Year I Semester

Course Title	L	T	P	C
Probability and Statistics	4	-	E	4
Soft Skills Laboratory		-	2	1
Data Structures	3	-	2	4
Materials Science and Technology	4	-		4
Chemical Process Calculations	3	1	-	4
Momentum Transfer	3	-	2	4
Process Instrumentation	3	1	-	4
Employability and Life Skills Elective*		-	- 1	1-3
Total	20	2	6	26-28

#### II Year II Semester

Course Title	L	T	P	C
Professional Communications Laboratory	-	-	2	1
Chemical Engineering Thermodynamics-I	3	1	-	4
Mechanical Unit Operations	3	-	2	4
Organic Chemistry	3	1	2	4
Process Heat Transfer	3	-	2	4
Department Elective	4-3	-	-	3
Department / Open Elective	-	-	_	3-4
Employability and Life Skills Elective*				1-3
Total	12	2	8	24-27

#### III Year I Semester

Course Title	L	T	P	C
Chemical Engineering Thermodynamcis-II	3	1	-	4
Chemical Reaction Engineering-I	3	-	2	4
Mass Transfer Operations-I	3	-	2	4
Process Dynamics and Control	3	-	2	4
Department / Open Elective	-	-	-	3-4
Department Elective	-	-	-	3
Employability and Life Skills Elective*		-	-	1-3
Total	12	1	6	23-26

#### III Year II Semester

Course Title	L	T	P	C
Professional Ethics	2	-	=	2
Chemical Reaction Engineering-II	3	-	2	4
Chemical Technology	3	_	2	4
Mass Transfer Operations-II	3	-	2	4
Process Modeling and Simulation	3	-	2	4
Department Elective		-	-	3
Department / Open Elective	-	-	8-	3-4
Employability and Life Skills Elective*	, <del>-</del>	-	-	1-3
Total	17	-	8	25-28

#### IV Year I Semester

Course Title	L	T	P	C
Management Science	3	-	_	3
Chemical Engineering Plant Design and Economics	3	1	-	4
Chemical Process Equipment Design	3	-	2	4
Optimization of Chemical Processes	3	1	-	4
Transport Phenomena	3	1	-	4
Department Elective	<del>-</del> )	-	-	3
Department / Open Elective			-	3-4
Employability and Life Skills Elective*		-	-	1-3
Total	15	3	2	22-25

#### IV Year II Semester

Course Title	L	T	P	C
Project work / Internship	-	7=	30	15
Total	-	-	30	15

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

The courses that are highlighted denote implementation of 'Choice Based Credit System (CBCS)'  $^{\prime}$ 

## R-16 Department Elective Courses

STREAM - 1: ENVIRONMENTAL AND SAFETY ENGINEERING

Course Title	L	T	P	C
Effluent Treatment Methods	3	-	-	3
Solid Waste Management and Treatment	3	-	-	3
Environmental Regulations and Impact Analysis	3	-	-	3
Industrial Safety and Hazard Analysis	3	-	-	3

#### STREAM - 2: MINERAL PROCESSING

Course Title	L	T	P	C
Mineral Process Technology	3	-	-	3
Mining Methods and Unit Operations	3	-	-	3
Physical Separation Process	3	-	-	3
Extraction Metallurgy	3	-	-	3

#### STREAM - 3: PHARMACEUTICAL AND FINE CHEMICALS

Course Title	L	T	P	C
Pharmaceuticals Chemistry	3	-	-	3
Pharmaceutical and Fine Chemicals	3	-	-	3
Pharmaceutical Analytical Techniques	3	-	-	3
Drug Design and Formulation	3	-	-	3

#### STREAM - 4: POLYMER AND PLASTICS ENGINEERING

Course Title	L	T	P	C
Polymer Structure and Property Relationship	3	-	-	3
Manufacturing of Industrial Polymers	3	-	-	3
Polymer Processing Technology	3	-	-	3
Polymer Testing Methods	3	-	-	3

STREAM - 5: PETROLEUM ENGINEERING

Course Title	L	Т	P	C
Petroleum Production Operations	3	-	-	3
Petroleum Refinery Engineering	3	-	_	3
Petrochemicals	3	-	-	3
Natural Gas Engineering	3	-	-	3

#### INDIVIDUAL ELECTIVE COURSES

Course Title	L	T	P	C
Conventional Energy Sources	3	-	-	3
Non Conventional Energy Sources	3	-	-	3
Energy Management and Auditing	3		-	3
Energy Integration	3	-	-	3

Pamesh Chairman BoS



# DEPARTMENT OF CHEMICAL ENGINEERING APPENDIX - II

## List of courses that enable employability or entrepreneurship or skill development in the R-16 B.Tech – Chemical Engineering

Sl. No.	Semester (Year)	Core / Elective	Course Name	Employability/ Entrepreneurship/ Skill development
1	First Year (Semester I)	Core	Engineering Mathematics - I	Skill development
2	First Year (Semester I)	Core	Engineering Physics	Skill development
3	First Year (Semester I)	Core	Technical English Communication	Employability
4	First Year (Semester I)	Core	Basics of Computers and Internet	Skill development
5	First Year (Semester I)	Core	Computer Programming	Skill development
6	First Year (Semester I)	Core	Basics of Engineering Products	Skill development
7	First Year (Semester I)	Core	English Proficiency and Communication Skills	Employability
8	First Year (Semester I)	Core	Engineering Physics Laboratory	Skill development
9	First Year (Semester II)	Core	Engineering Mathematics - II	Skill development
10	First Year (Semester II)	Core	Engineering Chemistry	Skill development
11	First Year (Semester II)	Core	Engineering Graphics	Skill development
12	First Year (Semester II)	Core	Basics of Electrical and Electronics Engineering	Skill development
13	First Year (Semester II)	Core	Engineering Chemistry Laboratory	Skill development
14	First Year (Semester II)	Core	Environmental Science and Technology	Skill development
15	First Year (Semester II)	Core	Work shop Practice	Skill development
16	First Year (Semester II)	Core	Basics of Chemical Engineering	Skill development
17	Second Year	Core	Probability and Statistics	Skill development

	(Semester I)				
18	Second Year	Core	Soft Skills Laboratory	Skill development	
10	(Semester I)	Core	Soft Skills Laboratory	Skiii developilient	
19	Second Year	Core	Data Structures	Skill development	
50.5%	(Semester I)		Data Structures	Skiii developilient	
20	Second Year	Core	Materials Science and Technology	Skill development	
	(Semester I)				
21	Second Year	Core	Chemical Process Calculations	Skill development	
	(Semester I) Second Year	Core			
22		Core	Momentum Transfer	Skill development	
	(Semester I) Second Year	Core			
23		Core	Process Instrumentation	Skill development	
	(Semester I)				
24	Second Year	Employability Skills	Employability and Life Skills Elective	Employability	
	(Semester I)	SKIIIS			
25	Second Year	Core	Professional Communications Laboratory	Skill development	
	(Semester II) Second Year			-	
26		Core	Chemical Engineering Thermodynamics-I	Skill development	
	(Semester II)		Thermodynamics-1	-	
27	Second Year	Core	Mechanical Unit Operations	Skill development	
	(Semester II)				
28	Second Year	Core	Organic Chemistry	Skill development	
	(Semester II)			1	
29	Second Year	Core	Process Heat Transfer	Skill development	
	(Semester II)			January Cropment	
30	Second Year	Department	Effluent Treatment Methods	Skill development	
30	(Semester II)	Elective	Efficient Treatment Methods	Skill development	
31	Second Year	Department	NC 15 T 1-1	61.11.1	
31	(Semester II)	Elective	Mineral Process Technology	Skill development	
32	Second Year	Department	Diametrial Charit	CL'II I	
32	(Semester II)	Elective	Pharmaceuticals Chemistry	Skill development	
22	Second Year	Department	Polymer Structure and Property		
33	(Semester II)	Elective	Relationship	Skill development	
	Second Year	Department			
34	(Semester II)	Elective	Petroleum Production Operations	Skill development	
105505	Second Year	Department			
35	(Semester II)	Elective	Conventional Energy Sources	Skill development	
200	Second Year	Employability	Employability and Life Skills		
36	(Semester II)	Skills	Elective	Employability	
	Third Year		Chemical Engineering		
37	(Semester I)	Core	Thermodynamics-II	Skill development	
Subst	Third Year				
38	(Semester I)	Core	Chemical Reaction Engineering-I	Skill development	
39	Third Year	Core	Mass Transfer Operations-I	Skill development	
200	a rear		operations i	- Carrie de l'elophient	

	(Semester I)			
40	Third Year	Core	Process Dynamics and Control	Skill development
34.0	(Semester I)	Core	Process Dynamics and Control	Skill development
41	Third Year (Semester I)	Department Elective	Solid Waste Management and Treatment	Skill development
42	Third Year	Department Elective	Mining Methods and Unit	Skill development
	(Semester I)		Operations	15
43	Third Year (Semester I)	Department Elective	Pharmaceutical and Fine Chemicals	Skill development
44	Third Year (Semester I)	Department Elective	Manufacturing of Industrial Polymers	Skill development
45	Third Year (Semester I)	Department Elective	Petroleum Refinery Engineering	Skill development
46	Third Year (Semester I)	Department Elective	Non-Conventional Energy Sources	Skill development
47	Third Year (Semester I)	Employability Skills	Employability and Life Skills Elective	Skill development
48	Third Year (Semester II)	Core	Professional Ethics	Employability
49	Third Year (Semester II)	Core	Chemical Reaction Engineering-II	Skill development
50	Third Year (Semester II)	- Core	Chemical Technology	Skill development
51	Third Year	Core	Mass Transfer Operations-II	Skill development
52	(Semester II) Third Year	Core	Process Modeling and Simulation	Skill development
53	(Semester II) Third Year	Department Elective	Environmental Regulations and Impact Analysis	Skill development
54	(Semester II) Third Year	Department	Physical Separation Process	Skill development
55	(Semester II) Third Year	Department	Pharmaceutical Analytical	Skill development
56	(Semester II) Third Year	Elective  Department Elective	Polymer Processing Technology	Skill development
57	(Semester II) Third Year	Department Elective	Petrochemicals	Skill development
58	(Semester II) Third Year (Semester II)	Department Elective	Energy Management and Auditing	Skill development
59	Third Year (Semester II)	Employability Skills	Employability and Life Skills Elective	Employability
60	Fourth Year (Semester I)	Core	Management Science	Employability
61	Fourth Year (Semester I)	Core	Chemical Engineering Plant Design and Economics	Skill development

62	Fourth Year (Semester I)	Core	Chemical Process Equipment Design	Skill development
63	Fourth Year (Semester I)	Core	Optimization of Chemical Processes	Skill development
64	Fourth Year (Semester I)	Core	Transport Phenomena	Skill development
65	Fourth Year (Semester I)	Department Elective	Industrial Safety and Hazard Analysis	Skill development
66	Fourth Year (Semester I)	Department Elective	Extraction Metallurgy	Skill development
67	Fourth Year (Semester I)	Department Elective	Drug Design and Formulation	Skill development
68	Fourth Year (Semester I)	Department Elective	Polymer Testing Methods	Skill development
69	Fourth Year (Semester I)	Department Elective	Natural Gas Engineering	Skill development
70	Fourth Year (Semester I)	Department Elective	Energy Integration	Skill development
71	Fourth Year (Semester I)	Employability Skills	Employability and Life Skills Elective	Employability
72	Fourth Year (Semester II)	Core	Project work / Internship	Employability

Hamesh Chairman BoS



# DEPARTMENT OF CHEMICAL ENGINEERING APPENDIX - III

#### List of new courses in the R-16 B.Tech – Chemical Engineering Curriculum

Sl. No.	Semester (Year)	Core / Elective	Course Name	
1	First Year	Core	Engineering Mathematics I	
1	(Semester I)		Engineering Mathematics - I	
2	First Year	Core	Funiancian Dharing	
2	(Semester I)		Engineering Physics	
3	First Year	Core	Took size I Francisch Communication	
3	(Semester I)		Technical English Communication	
4	First Year	Core	Pasies of Commuters and Internet	
4	(Semester I)		Basics of Computers and Internet	
5	First Year	Core	Commutan Programming	
5	(Semester I)	Core	Computer Programming	
6	First Year	Core	Racios of Engineering Products	
U	(Semester I)	Core	Basics of Engineering Products	
7	First Year	Core	English Proficiency and	
	(Semester I)	Core	Communication Skills	
8	First Year	Core	Engineering Physics Laboratory	
	(Semester I)	Core	Eligineering Filysics Laboratory	
9	First Year	Core	Engineering Mathematics - II	
	(Semester II)		Engineering Wathematics - II	
10	First Year	Core	Engineering Chemistry	
10	(Semester II)			
11	First Year	Core	Engineering Graphics	
	(Semester II)			
12	First Year	Core	Basics of Electrical and Electronics	
5.21	(Semester II)		Engineering	
13	First Year	Core	Engineering Chemistry Laboratory	
	(Semester II)		Engineering Chemistry Educatory	
14	First Year	Core	Environmental Science and	
1.7	(Semester II)		Technology	
1.5	First Year	0	W 1 I D	
15	(Semester II)	Core	Work shop Practice	
16	First Year	Core	Basics of Chemical Engineering	

	(Semester II)			
17	Second Year	Core	Probability and Statistics	
1 /	(Semester I)	Core	Frobability and Statistics	
18	Second Year	Core	Soft Skills Laboratory	
10	(Semester I)	Core	Soft Skills Laboratory	
19	Second Year	Core	Data Structures	
70.F	(Semester I)	Core	Data Structures	
20	Second Year	Core	Materials Science and Technology	
	(Semester I)	Core	Waterials Science and Technology	
21	Second Year	Core	Chemical Process Calculations	
	(Semester I)		Chemical Freezes Calculations	
22	Second Year	Core	Momentum Transfer	
	(Semester I)			
23	Second Year	Core	Process Instrumentation	
	(Semester I)		Trocess instrumentation	
24	Second Year	Employability	Employability and Life Skills	
	(Semester I)	Skills	Elective	
25 Sec	Second Year	Core	Professional Communications	
20	(Semester II)		Laboratory	
26	Second Year	Core	Chemical Engineering	
	(Semester II)	Core	Thermodynamics-I	
27	Second Year	Core	Mechanical Unit Operations	
	(Semester II)		Weenamear out Operations	
28	Second Year	Core	Organic Chemistry	
20	(Semester II)		Organic Chemistry	
29	Second Year		Danson Hart Tour	
29	(Semester II)	Core	Process Heat Transfer	
30	Second Year	Department	ECG. T	
30	(Semester II)	Elective	Effluent Treatment Methods	
2.1	Second Year	Department		
31	(Semester II)	Elective	Mineral Process Technology	
32	Second Year	Department	Di	
34	(Semester II)	Elective	Pharmaceuticals Chemistry	
33	Second Year	Department	Polymer Structure and Property	
33	(Semester II)	Elective	Relationship	
34	Second Year	Department	D. I. D. I	
34	(Semester II)	Elective	Petroleum Production Operations	
2.5	Second Year	Department		
35	(Semester II)	Elective	Conventional Energy Sources	
26	Second Year	Employability	Employability and Life Skills	
36	(Semester II)	Skills	Elective Elective	
2.7	Third Year		Chemical Engineering	
37	(Semester I)	Core	Thermodynamics-II	
38	Third Year	Core	Chemical Reaction Engineering-I	

	(Semester I)			
39	Third Year	Core	Mass Transfer Operations-I	
	(Semester I)	Core	Wass Transfer Operations-1	
40	Third Year	Core	Process Dynamics and Control	
10	(Semester I)	Core	1 locess Byllamics and Control	
41	Third Year	Department	Solid Waste Management and	
	(Semester I)	Elective	Treatment	
42	Third Year	Department	Mining Methods and Unit Operations	
12	(Semester I)	Elective	Willing Wethods and Clift Operations	
43	Third Year (Semester I)	Department Elective	Pharmaceutical and Fine Chemicals	
200	Third Year	Department	Manufacturing of Industrial	
44	(Semester I)	Elective	Polymers	
	Third Year	Department		
45	(Semester I)	Elective	Petroleum Refinery Engineering	
16	Third Year	Department		
46	(Semester I)	Elective	Non-Conventional Energy Sources	
4.7	Third Year	Employability	Employability and Life Skills	
47	(Semester I)	Skills	Elective	
40	Third Year			
48	(Semester II)	Core	Professional Ethics	
49	Third Year			
	(Semester II)	Core	Chemical Reaction Engineering-II	
50	Third Year			
50	(Semester II)	Core	Chemical Technology	
<i>-</i> 1	Third Year		Mass Transfer Operations-II	
51	(Semester II)	Core		
50	Third Year			
52	(Semester II)	Core	Process Modeling and Simulation	
52	Third Year	Department	Environmental Regulations and	
53	(Semester II)	Elective	Impact Analysis	
54	Third Year	Department	DI : 10 : 5	
34	(Semester II)	Elective	Physical Separation Process	
55	Third Year	Department	Pharmaceutical Analytical	
55	(Semester II)	Elective	Techniques	
56	Third Year	Department	Dalama Dani i Tari i	
50	(Semester II)	Elective	Polymer Processing Technology	
57	Third Year	Department	Datasahamisala	
<i>J</i> /	(Semester II)	Elective	Petrochemicals	
58	Third Year	Department	Enorgy Management and Audici	
20	(Semester II)	Elective	Energy Management and Auditing	
59	Third Year	Employability	Employability and Life Skills	
	(Semester II)	Skills	Elective	
60	Fourth Year	Core	Management Science	
	(Semester I)	T-1-1-1	- Management Science	

61	Fourth Year	Core	Chemical Engineering Plant Design	
O1	(Semester I)	Core	and Economics	
62	Fourth Year	Core	Chamical Brosses Equipment Design	
02	(Semester I)	Core	Chemical Process Equipment Design	
63	Fourth Year	Core	Optimization of Chemical Processes	
03	(Semester I)	Core	Optimization of Chemical Processes	
64 F	Fourth Year	Core	Transport Phanamana	
04	(Semester I)	Core	Transport Phenomena	
65 Fourth Year		Department	Industrial Safety and Hazard	
05	(Semester I)	Elective	Analysis	
66	Fourth Year	Department	Extraction Metallurgy	
	(Semester I)	Elective		
67	Fourth Year	Department	Drug Design and Formulation	
07	(Semester I)	Elective	Drug Design and Formulation	
68	Fourth Year	Department	Polymer Testing Methods	
00	(Semester I)	Elective	Torymer Testing Methods	
69	Fourth Year	Department	Natural Gas Engineering	
07	(Semester I)	Elective	Natural Gas Engineering	
70	Fourth Year	Department	Energy Integration	
70	(Semester I)	Elective	Energy Integration	
71	Fourth Year	Employability	Employability and Life Skills	
	(Semester I)	Skills	Elective	
72	Fourth Year	Core	Project work / Internship	
12	(Semester II)	Corc	110ject work / Internship	

Lauresh Chairman Bos