

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

Established by UGC Act 1956

Department of Chemical Engineering

18-04-2019

Minutes of the Board of Studies Meeting

B.Tech in Petroleum Engineering

Minutes of Board of Studies (BOS) meeting of B. Tech Petroleum Engineering program held on 18-04-2019 at office Head of the department, Department of Chemical Engineering, Vignan's University, Vadlamudi.

Agenda of the meeting:

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

The following members were part of the meeting

S. No	Name	Members	Signature
1.	Dr. Ramesh Naidu, Associate Professor and Head, Department of Chemical Engineering	Chairman, BOS	
2.	Prof. K. V. Rao, Programme Director, Petroleum Courses, JNTU Kakinada.	Invited member	
3.	Sri. CVG Krishna, Retired General Manager Oil India & Adjunct Professor, JNTU Kakinada	Invited member	
4.	Sri. Satyapal Sulgay, Retd., Asset Manager, ONGC	Invited member	
5.	Prof. Subbaiah Tondepu, Research Adviser, Department of Chemical Engineering, VFSTR, Vadlamudi.	Internal Member	
6.	Dr. P. Bhanghariah Pagala, Professor, Department of Chemical Engineering, VFSTR, Vadlamudi.	Internal Member	
7.	Sri. Prathamesh S, Assistant Professor, Department of Chemical Engineering, VFSTR, Vadlamudi.	Internal Member	
8.	Sri. Vishesh Bhadaraiya, Assistant Professor, Department of Chemical Engineering, VFSTR, Vadlamudi	Internal Member	
9.	Sri. Sree Harsha, Assistant Professor, Department of Chemical Engineering, VFSTR, Vadlamudi	Internal Member	



VIGNAN'S

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

Minutes of the BOS Meeting

1. The chairman wished and welcomed all the members of BOS.
2. The chairman highlighted broad objectives of the proposed changes in the course structure of B. Tech Petroleum Engineering like.
 - a. In 3rd year, 1st semester, Drilling Fluids and Cementing Technology to be removed and merged with Drilling Technology.
 - b. In Petroleum Reservoir Engineering-I, lab component to be removed and add as a tutorial.
 - c. In 3rd year 2nd Semester, Petroleum Reservoir Engineering-II lab component must be included. Further Refinery & Petrochemical Technology courses to be added from elective and merged with Petroleum Analysis Lab.
 - d. In 3rd year, 2nd Semester Well completion, Testing and Servicing subject to be added in the place of Well logging and formation evaluation.
 - e. Modifications to be made in all Department Electives
3. The chairman also explained in detail about the suggestions and comments collected from various stakeholders.
4. The members of the BOS thoroughly looked at the proposals of the Department of Chemical Engineering in the light of suggestions made by experts and recommended a new course structure for B. Tech Petroleum Engineering program.
5. As per the suggestion taken from all stakeholders 50% of syllabus has been revised from R16 to R19.



VIGNAN'S

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

Resolutions made after the discussion:

1. Propose and approve course structure for all 4 years of B.Tech. Programme in Petroleum Engineering (Appendix-I).
2. Propose and approve detailed syllabus for the 4 year of B.Tech. Programme in Petroleum 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 utmost 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 by introducing minor specializations such as Management, Humanities & Science, Information Technology and Electronics and Communication Engineering
6. Major restructuring has taken place in the curriculum by introducing new electives such as Advanced Polymer Technology, Applied Mathematics for Reservoir Engineering, Subsea Operations and Maintenance etc.
7. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development (Appendix II)
8. In the B.Tech. Petroleum Engineering revised regulation R-19, the substantial changes are made in the content of all courses and hence the courses are considered as new courses (Appendix III)

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

APPENDIX-I

Course Structure

I year I semester

S.NO	Course Title	L	T	P	C
1.	Engineering Mathematics-I	3	1	2	5
2.	Engineering Physics	3	0	2	4
3.	Basics of Electrical and Electronics Engineering	3	0	2	4
4.	Engineering Graphics and Design	2	0	2	3
5.	Basics of Petroleum Engineering	3	0	0	3
6.	Physical fitness, Sports & Games-I	0	0	3	1
	Total	14	1	11	20

I year II semester

S.NO	Course Title	L	T	P	C
1.	Engineering Mathematics-II	3	1	2	5
2.	Engineering Chemistry	3	0	2	4
3.	Programming for Problem Solving	2	0	4	4
4.	English Proficiency and Communication Skills	0	0	2	1
5.	Technical English Communication	2	0	2	3
6.	Constitution of India	1	0	0	1
7.	Workshop	1	0	2	2
8.	Momentum Transfer	3	0	2	4
9.	Physical fitness, Sports & Games-II	0	0	3	1
	Total	15	1	19	25

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd u/s 3 of UGC Act 1956

Department of Chemical Engineering

II year I semester

S.NO	Course Title	L	T	P	C
1.	Probability & Statistics	3	1	0	4
2.	Chemical Process Calculations	3	1	0	4
3.	Process Heat Transfer	3	0	2	4
4.	Petroleum Geology	3	0	0	3
5.	Fundamentals of Geology	3	0	2	4
6.	Life Skills-I	-	-	1	0
7.	Technical Seminar-I	-	-	2	1
8.	Intra Disciplinary Project-I	-	-	3	1
9.	Physical fitness, Sports & Games-II	-	-	2	1
	Total	15	2	12	22

II-year II semester

S.NO	Course Title	L	T	P	C
1.	Petroleum Exploration	3	0	0	3
2.	Petroleum Engineering Thermodynamics	3	1	0	4
3.	Drilling Technology	3	1	0	4
4.	Environmental Studies	1	0	0	1
5.	Management Science	3	0	0	3
6.	Life Skills-II	0	0	2	1
7.	Technical Seminar-II	0	0	2	1
8.	Intra Disciplinary Project-II	0	0	2	1
9.	Department Elective-I	3	0	0	3
10.	Open Elective-I	3	0	0	3
	Total	19	2	6	24

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd u/s 3 of UGC Act 1956

Department of Chemical Engineering

III year I semester

S.NO	Course Title	L	T	P	C
1.	Instrumentation & Process Control	3	0	2	4
2.	Petroleum Reservoir Engineering-I	3	1	0	4
3.	Well Logging & Formation Evaluation	3	0	2	4
4.	Soft Skills lab	1	0	0	1
5.	Employability Skills-I	0	0	2	0
6.	Human Values, Professional Ethics & Gender Equity	2	0	0	2
7.	Inter Departmental Project-I	0	0	4	2
8.	Modular Course	1	0	0	1
9.	Department Elective-II	3	0	0	3
10.	Open Elective-II	3	0	0	3
	Total	18	1	10	24

III-year II semester

S.NO	Course Title	L	T	P	C
1.	Well Completions, Testing & Servicing	3	0	0	3
2.	Petroleum Reservoir Engineering-II	3	0	2	4
3.	Petroleum Production Engineering	3	0	0	3
4.	Petroleum Refinery & Petrochemical Technology	3	0	2	4
5.	Professional Communication Lab	0	0	2	1
6.	Employability Skills-II	0	0	1	1
7.	Inter-Departmental Project-II	0	0	2	1
8.	Department Elective-III	3	0	0	3
9.	Open Elective-III	3	0	0	3
	Total	18	0	9	23

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

IV year I semester

S.NO	Course Title	L	T	P	C
1.	Health, Safety and Environmental Engineering	3	0	0	3
2.	Petroleum Engineering Equipment Design	3	0	2	4
3.	Enhanced Oil Recovery Techniques	3	0	2	4
4.	Surface Production Operations	3	0	0	3
5.	Social Centric Project	-	-	6	3
6.	Department Elective-IV	3	0	0	3
	Total	15	0	10	20

IV-year II semester

S.NO	Course Title	L	T	P	C
1.	Internship/ Project Work (Industry Oriented Projects)	-	-	24	12
	Total	-	-	24	12

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



VIGNAN'S

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

Department Elective-I

- Petro Chemicals
- Waste Water & Effluent Treatment Methods
- Energy Engineering
- Material Science and Engineering
- Mathematical Methods & Application to Petroleum Engineering

Department Elective-II

- Solid Waste Management
- Fundamentals of LNG
- Natural Gas Processing
- Unconventional Hydrocarbon Resources
- Advanced Polymer Technology

Department Elective-III

- Operations Research
- Fluid Flow Through Porous Media
- Advanced Natural Gas Engineering
- Artificial Lift Techniques
- Pipeline Engineering



VIGNAN'S

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

Department Elective-IV

- Reservoir Stimulation
- Reservoir Simulation
- Applied Mathematics for Reservoir Engineering
- Petroleum Economics & Asset Management
- Oil & Gas Field Development
- Subsea Operation & Maintenance

Chairman BoS



APPENDIX - II

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

S. No	Semester (Year)	Course Name	Employability/ Entrepreneurship/ Skill development
1.	Semester I (First Year)	Basics of Petroleum Engineering	Employability
2.	Semester II Second Year)	Momentum transfer	Skill development
3.	Semester III (Second Year)	Petroleum Geology	Entrepreneurship
4.	Semester III (Second Year)	Process Heat Transfer	Skill development
5.	Semester III (Second Year)	Fundamentals of Geology	Skill development
6.	Semester III (Second Year)	Chemical Process Calculations	Skill development
7.	Semester IV (Second Year)	Petroleum Exploration	Skill development
8.	Semester IV (Second Year)	Petroleum Engineering Thermodynamics	Skill development
9.	Semester IV (Second Year)	Drilling Technology	Skill development

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

10.	Semester IV (Second Year)	Process Dynamics and Control	Skill development
11.	Semester V (Third Year)	Instrumentation & Process Control	Skill development
12.	Semester V (Third Year)	Well Logging & Formation Evaluation	Skill development
13.	Semester V (Third Year)	Petroleum Reservoir Engineering-I	Skill development
14.	Semester VI (Third Year)	Petroleum Reservoir Engineering-II	Skill development
15.	Semester VI (Third Year)	Well Completion, Testing & Servicing	Skill development
16.	Semester VI (Third Year)	Petroleum Production Engineering	Skill development
17.	Semester VI (Third Year)	Petroleum Refinery & Petrochemical Technology	Skill development
18.	Semester VII (Final Year)	Surface Production Operations	Skill development
19.	Semester VII (Final Year)	Enhanced Oil Recovery Methods	Skill development
20.	Semester VII (Final Year)	Health, Safety and Environmental Engineering	Skill development
21.	Semester VII (Final Year)	Petroleum Engineering Equipment Design	Skill development
22.	Semester IV	Petro Chemicals	Skill development

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

	(Second Year)		
23.	Semester VII (Third Year)	Fundamentals of LNG	Skill development
24.	Semester VI (Final Year)	Natural Gas Processing	Skill development
25.	Semester V (Third Year)	Natural Gas Hydrates	Employability
26.	Semester VI (Third Year)	Advance Natural Gas Engineering	Employability
27.	Semester VI (Final Year)	Reservoir Simulation	Skill development
28.	Semester VI (Final Year)	Reservoir Stimulation	Skill development
29.	Semester II (First Year)	Waste Water & Effluent Treatment Methods	Skill development
30.	Semester II (First Year)	Energy Engineering	Skill development
31.	Semester II (First Year)	Material Science & Engineering	Skill development
32.	Semester II (First Year)	Mathematical Methods & Application to Petroleum Engineering	Skill development
33.	Semester III (Second Year)	Solid Waste management	Skill development
34.	Semester III (Second Year)	Unconventional Hydrocarbon Resources	Skill development



VIGNAN'S

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

35.	Semester IV (Second Year)	Advanced Polymer Technology	Skill development
36.	Semester V (Third Year)	Operations Research	Skill development
37.	Semester V (Third Year)	Fluid Flow Through Porous Media	Skill development
38.	Semester VI (Third Year)	Pipeline Engineering	Skill development
39.	Semester VI (Final Year)	Applied Mathematics for Reservoir Engineering	Skill development
40.	Semester VII (Final Year)	Oil and Gas Field Development	Skill development
41.	Semester VII (Final Year)	Subsea Operations and Maintenance	Skill development

Ramesh
Chairman BoS



VIGNAN'S

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

(Estd. u/s 3 of UGC Act 1956)

Department of Chemical Engineering

APPENDIX - III

List of new courses in the R-19

B. Tech – Petroleum Engineering curriculum

S.No.	Course Name
1.	Basics of Petroleum Engineering
2.	Momentum Transfer
3.	Petroleum Geology
4.	Process Heat Transfer
5.	Fundamentals of Geology
6.	Chemical Process Calculations
7.	Petroleum Exploration
8.	Petroleum Engineering Thermodynamics
9.	Drilling Technology
10.	Process Dynamics and Control
11.	Instrumentation & Process Control
12.	Well Logging & Formation Evaluation
13.	Petroleum Reservoir Engineering-I
14.	Petroleum Reservoir Engineering-II
15.	Well Completion, Testing & Servicing
16.	Petroleum Production Engineering
17.	Petroleum Refinery & Petrochemical Technology
18.	Surface Production Operations
19.	Enhanced Oil Recovery Methods
20.	Health, Safety and Environmental Engineering
21.	Petroleum Engineering Equipment Design



VIGNAN'S

Foundation for Science, Technology & Research

(Deemed to be UNIVERSITY)

-Estd. u/s 3 of UGC Act 1956

Department of Chemical Engineering

22.	Petro Chemicals
23.	Fundamentals of LNG
24.	Natural Gas Processing
25.	Natural Gas Hydrates
26.	Advance Natural Gas Engineering
27.	Reservoir Simulation
28.	Reservoir Stimulation
29.	Waste Water & Effluent Treatment Methods
30.	Energy Engineering
31.	Material Science & Engineering
32.	Mathematical Methods & Application to Petroleum Engineering
33.	Solid Waste management
34.	Unconventional Hydrocarbon Resources
35.	Advanced Polymer Technology
36.	Operations Research
37.	Fluid Flow Through Porous Media
38.	Pipeline Engineering
39.	Applied Mathematics for Reservoir Engineering
40.	Oil and Gas Field Development
41.	Subsea Operations and Maintenance

Ramesh
Chairman BoS