



**PANDIT DEENDAYAL ENERGY UNIVERSITY**  
Formerly known as  
**PANDIT DEENDAYAL PETROLEUM UNIVERSITY**

Raisan, Gandhinagar - 382007, Gujarat, INDIA.

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Recognized by the University Grants Commission u/s 2(f)

NAAC Accredited 'A' Grade, (CGPA 3.39 out of 4.00)

SPT 133011

**Board of Studies Meeting**

**Minutes of the Meeting**

**05 March 2021**

The following members were present in the BoS meeting dated 05 March, 2021.

S.No	Name of Members	Designation
1	Dr. Bhawanisingh Desai	BoS Chairman, SPT, PDEU
2	Dr. Uttam K Bhui	BoS Member, SPT, PDEU
3	Dr. P. Sivakumar	BoS Member, SPT, PDEU
4	Prof. Ranjan Sengupta	Academic Expert, M S University
5	Prof. N C Pradhan	Academic Exoert, IIT Kharagpur.
6	Dr. R. K Vij	Special Invitee, SPT, PDEU
7	Dr. N. Madhavan	Special Invitee, SPT, PDEU
8	Dr. R. Balasubramanian	Special Invitee, SPT, PDEU
9	Dr. Lakshmana Rao Jeeru	Special Invitee, SPT, PDEU
10	Dr. Rohit Srivastava	Special Invitee, SPT, PDEU
11	Dr. Achinta Bera	Special Invitee, SPT, PDEU
12	Dr. Himanshu Chokshi	Student Alumni, SPT, PDEU

The courses were reviewed for **B. Tech – Petrochemical Engineering** and the BoS principally agreed to the same.

The following changes are suggested in B. Tech course for fine tuning purpose:

- The members agreed for the 1<sup>st</sup> and 2<sup>nd</sup> semester course structure and the detailed syllabus.
- Prof. N C Pradhan suggested to having strong syllabus on Polymer Science course. Also Prof. Sengupta agreed for the same.
- Petroleum Refinery Engineering course credit needs (at least 1 more) to be increased to cover depth of the syllabus.
- 4<sup>th</sup> semester elective – I course of Nanotechnology should be shifted to higher semester.
- Mass Transfer – I course is to be refined by focusing more on the basics of mass transfer instead of focusing on operations.
- Process Control course credits needs to be increased by 1.
- To reduce 1 credit of Summer Industrial Internship Report Presentation.

- Prof. N C Pradhan suggested to rename the Pre Project Dissertation as Project I in the 7<sup>th</sup> semester and Project – II in the 8<sup>th</sup> semester.
- Also, members were suggested to include Advanced Petroleum Refinery process and Green Technology course in the 8<sup>th</sup> semester as elective course instead of Optimization Techniques.

BoS Members consent and approve the above mentioned points.

Course structure (Annexure – I ) is attached.



Dr. R K Vij




Dr. Bhawanisingh Desai

Prof. Ranjan Sengupta


Prof. N C Pradhan



Dr. Uttam K Bhui



Dr. P Sivakumar




Dr. N Madhavan



Dr. R Balasubramanian



Dr. Lakshmana Rao Jeeru



Dr. Rohit Srivastava



Dr. Achinta Bera



Dr. Himanshu Chokshi

**Dr Kelkar's suggestions and their implementation towards strengthening of B Tech Petrochemicals Programme.**

The report send by Dr. V. Kelkar on the course structure proposed reveals his deep insight in this program and his commitment to engineering education in general.

In light of his suggestions certain changes have been made in the course structure that will certainly be helpful in valorising the program.

Commenting on Basic sciences he observed that the Chemistry content is only 3% of the Credits this has been now enhanced to 7.5% with 4 chemistry based subjects with considerable emphasis on inorganic and organic chemistry and incorporation of physical chemistry as well as polymer chemistry.

Chemical Engineering: Chemical engineering content is retained and the texts suggested are followed. Mechanical Operations is now shifted to 4<sup>th</sup> sem instead of 3<sup>rd</sup> as recommended. Transport Phenomena is shifted to 6<sup>th</sup> sem from 4<sup>th</sup> sem.

Mass Transfer I is placed in 4<sup>th</sup> semester and will incorporate Distillation (Binary and Multicomponent) and Absorption. While Mass Transfer II in 5<sup>th</sup> sem incorporates Adsorption and Extraction and drying etc.

Exploring hydrocarbons as a subject has been dropped but Introduction to Petroleum Engineering has been retained with the title 'Introduction to Petroleum and Petrochemicals'. Having an introductory subject will foster the curiosity of the students.

Transportation and Marketing of Petroleum and Petrochemicals, Pipe line and City gas distribution etc. are being retained in view of the expertise available at local levels.

All aspects of Petrochemical technologies mentioned by Dr Kelkar will be addressed in the course and suitable subject slots are provided totalling 8 subjects with >12.5% of the credits.

Some title changes suggested such as Petrochemical reaction Engg to Chemical Reaction Engg. are done. The objective of keeping Petrochemical reaction Engg was to put more emphasis on gas phase petrochemical reactions rather than liquid phase reactions and to distinguish the subject from the subject studied by chemical engineers.

It is recommended that overall subject distribution be mapped on Excel to get an overview at a glance.

R. Sengupta

3/3/2021

P. Sengupta  
4/3/2021

P. Sengupta  
4/3/2021



## Note for Approval

In connection with the earlier discussion on starting New B. Tech petrochemical Engineering Program at School of Petroleum Technology. An interim committee (Member: Prof. Ranjan Sengupta; Dr. R. Balasubramanian; and Dr. Lakshmana Rao Jeeru) was formed to frame the Crouse structure of the Petrochemical Engineering program. The same course structure was discussed with Dr. Jayant Kelkar (Vice President Reliance; dated 28<sup>th</sup> August 2020) where he has suggested some changes in the course structure. The changes were revised and adopted as per his suggestions.

Following this, a detailed discussion was held among the SPT faculties on the revised and new course structure of the B. Tech in Petrochemical Engineering.

Following points were discussed and agreed upon.

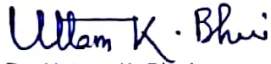
- 1) Course structure of B. Tech Petrochemical Engineering (Annexure-I)
- 2) Boucher for Admission of petrochemical Engineering (Annexure-II)
- 3) Justification of differentiation of Petroleum Engineering and Petrochemical Engineering (Annexure-III)

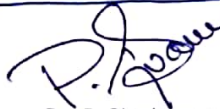
In this context, a BOS (Petroleum Engineering) was held on 5<sup>th</sup> February 2021 following members were present (online and offline).


- |                              |                   |
|------------------------------|-------------------|
| 1) Prof. R. K. Vij           | (Director-SPT)    |
| 2) Prof. Ranjan Sengupta     | (Special Invitee) |
| 3) Dr. Bhawanisingh G. Desai | (Chairman-BOS)    |
| 4) Dr. Uttam K. Bhui         | (Member-BOS)      |
| 5) Dr. P. Sivakumar          | (Member-BOS)      |
| 6) Dr. R. Balasubramanian    | (Special Invitee) |
| 7) Dr. Lakshmana Rao Jeeru   | (Special Invitee) |
| 8) Dr. Rohit Srivastava      | (Special Invitee) |

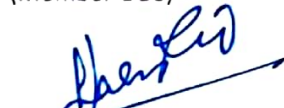
After discussion, the course structure was unanimously accepted.

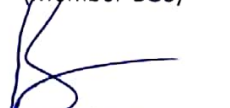
It is proposed that the B. Tech Program in Petrochemical Engineering may be accepted and approved.


  
Dr. Uttam K. Bhui  
(Member-BOS)


  
Dr. P. Sivakumar  
(Member-BOS)

  
Dr. R. Balasubramanian  
(Special Invitee)

  
Dr. Lakshmana Rao Jeeru  
(Special Invitee)

  
Dr. Rohit Srivastava  
(Special Invitee)

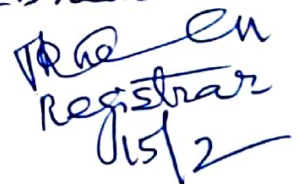
  
Dr. Bhawanisingh G. Desai  
(Chairman-BOS)

  
Prof. R. K. Vij  
(Director-SPT)

May kindly approve -

  
D.G.

In principle approval may be given  
Registrar Pl to the start of B. Tech. (Petrochem.) with  
DG, PDEU 60 intake, if financial outlay is reasonable  
to absorb, in particular

  
Registrar  
15/2

Director General

## Petroleum Engineering vs Petrochemical Engineering

Petrochemical engineering deals with refining of petroleum, petrochemicals, production, plant design and marketing. Whereas, Petroleum Engineering is a branch of science which deals with the study of extraction of crude oil and natural gas present on the deposits found below the surface of Earth.

Petroleum Engineering involves exploration and production whereas Petrochemical Engineering involves refining, manufacturing process, testing, characteristics determination and petrochemical processing.

In addition to producing petrochemical materials, Petrochemical engineering enables the engineers to design and operate petrochemical plants and improves method of production. Basically Petrochemical refers to organic chemicals which are obtained directly or indirectly from the crude petroleum.

Petroleum Industry is the backbone of any country's economy, both directly and indirectly. With the increased automobile numbers every year, the demand for crude oil and its components majorly petroleum has increased over the years.

Courses like Petrochemical Engineering are emphasized by institutes to provide industry technology advances. The course is a sub-part under Chemical Engineering and focuses on techniques and processes related to the refining of petroleum and other chemicals present in crude oil.

The courses provide an insight into modern logical design development mechanisms and technologies for the easy extraction of crude oil within the economic boundaries. As the industry is always short-handed in entry-level professionals, students with proper guidance and degree can easily find a high paying job and increase the reliability of the industry.

Petroleum engineering is generally focused on upstream and midstream sector. Upstream sector discovers and produces crude oil and natural gas from the sub surface. It is also called as exploration and exploitation sector. Midstream sector task is to store, transport and market the commodities of natural gas, crude oil, etc.

This course helps to develop the skills and abilities to design and develop the process of extraction and conversion of oil into useful products. Owing to greater demand for petrochemical engineers around the globe in both Research and Development area and Plant operations areas, they're often offered lucrative salaries.

