

**B. Tech. Petroleum Engineering (First Year) (Batch 2017-18)**  
**Trimester – I**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment, Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	ETT	Total
1	<b>ES111</b>	Mathematics -I	BS	3	1	--	3	--	75	-	75	150
2	<b>ES112</b>	Physics	BS	3	1	2	3	1	75	50	75	200
3	<b>CE111</b>	Applied Mechanics	ES	3	1	2	3	1	75	50	75	200
4	<b>ME111</b>	Workshop Practices	ES	-	-	2	-	1	-	50	-	50
5		Effective Communication	HSS	2	-	2	1	1	50	50	-	100
6		Practicing Yoga and Meditation	WP	-	-	1	-	-	-	-	-	-
	-	Total :		11	03	09	10	04	275	200	225	700

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: 23

Total Credits: First Year B. Tech. Trimester I: 14

( **Prof. L. K. Kshirsagar** )  
( Dean )

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**B. Tech. Petroleum Engineering (First Year) (Batch 2017-18)**  
**Trimester – II**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks **			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	ETT	Total
1	ES121	Mathematics II	BS	3	1	-	3	-	75	-	75	150
2	ES122	Biology	BS	3	-	-	2	-	50	-	50	100
3	ME121	Material Science For Engineers	BS	3	-	2	2	1	50	50	50	150
4	ME122	Engineering Graphics	ES	2	-	2	1	1	-	50	50	100
5	CS121	Computer Programming	ES	3	-	2	2	1	50	50	50	150
6	WPC 1	Philosophers of Bharat, Great Kings & Dynasties	WP	3	-	-	2	-	50	-	50	100
7		Rural Immersion Programme	WP	-	-	-	-	-	-	-	-	-
8		Practicing Yoga and Meditation	WP	-	-	1	-	-	-	-	-	-
		Total :		17	1	07	12	03	275	150	325	750

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: 25

Total Credits: First Year B. Tech Trimester II:15

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( Dean )

**B. Tech. Petroleum Engineering (First Year) (Batch 2017-18)**  
**Trimester – III**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	ETT	Total
1	<b>ES131</b>	Chemistry	BS	3	-	2	2	1	50	50	50	150
2	<b>ME131</b>	Introduction to Engineering Design Principles	ES	3	-	2	2	1	50	50	50	150
3		Engineering Science Elective Course I*	ES	3	-	2	2	1	50	50	50	150
4		Engineering Science Elective Course II*	ES	3	-	2	2	1	50	50	50	150
5	<b>WPC 2</b>	Gandhian Philosophy	WP	3	-	-	2	-	50	-	50	100
6		Practicing Yoga and Meditation	WP	-	-	1	-	-	-	-	-	-
		Total :		15	0	09	10	04	250	200	250	700

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: 24

Total Credits: First Year B. Tech. Trimester III: 14

Total First Year B. Tech. Credits: **14+15+14=43**

( **Prof. L. K. Kshirsagar** )  
( Dean )

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**Any two courses other than parent/ home discipline can be chosen from the list given below.**

<b>Sr. No.</b>	<b>Course Code</b>	<b>Name of Course</b>
1		Introduction to Civil Engineering
2	ME132	Introduction to Mechanical Engineering
3		Introduction to Computer Science and Engineering
4		Introduction to Electrical Engineering
5		Introduction to Electronics Engineering
6		Introduction to Polymer Engineering
7	PE131	Introduction to Petroleum Engineering
8		Introduction to Chemical Engineering

**B. Tech. Petroleum Engineering (Second Year) (Batch 2017-18)**

**Trimester – IV**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	ETT	Total
1	<b>ES213</b>	Oil Field Chemistry	BS	3	-	2	2	1	50	50	50	150
2	<b>PE211</b>	Petroleum Field Instrumentation and Control	PC	2	-	2	2	1	50	50	50	150
3	<b>PE212</b>	Fluid Mechanics for Petroleum Engineers	ES	3	-	2	2	1	50	50	50	150
4	<b>PE213</b>	Geomechanics	ES	3	-	2	2	1	50	50	50	150
5	<b>PE214</b>	Computational Skills	PC	-	-	2	-	1	-	50	-	50
6	<b>PE215</b>	Technical Communication	PC	-	-	2	-	1	-	50	-	50
7		Indian Constitution	HSS	2	-	-	1	-	50	-	-	50
		Total :		13	-	12	09	06	250	300	200	750

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: **25**

Total Credits: Second Year B. Tech. Trimester I:15

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( Dean )

**B. Tech. Petroleum Engineering (Second Year) (Batch 2017-18)**  
**Trimester – V**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	ETT	Total
1	<b>PE221</b>	Drilling Operations	PC	3	-	2	2	1	50	50	50	150
2	<b>PE222</b>	Petroleum Production Operations	PC	2	1	-	2	-	50	-	50	100
3	<b>PE223</b>	Heat Transfer	ES	3	-	2	2	1	50	50	50	150
4	<b>PE224</b>	Chemical Engineering Thermodynamics	PC	3	1	-	3	-	100	-	50	150
5	<b>PE 225</b>	Process calculations	PC	-	-	2	-	-	-	-	-	-
6	<b>WPC1</b>	World Famous Philosophers Sages /Saints and Great Kings	WP	3	-	-	2	-	75	-	25	100
7	<b>WPP04</b>	National Study Tour	WP	-	-	-	-	-	-	-	-	-
		Total :		14	2	6	11	03	325	150	225	700

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: **22**

Total Credits: Second Year B. Tech. Trimester II:14

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( Dean )

**B. Tech. Petroleum Engineering (Second Year) (Batch 2017-18)**  
**Trimester – VI**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	ETT	Total
1	<b>ES231</b>	Mathematics-III	BS	3	1	-	3	-	100	--	50	150
2	<b>PE232</b>	Petroleum Geology-I	PC	3	-	2	2	1	50	50	50	150
3	<b>PE233</b>	Reservoir Engineering	PC	3	-	2	2	1	50	50	50	150
4	<b>PE234</b>	Equipment Design and Drawing	PC	3	1	2	2	1	50	50	50	150
5	<b>PE235</b>	Environmental Science	HSS	2	-	-	1	-	50	-	-	50
		Total :		14	2	06	10	03	300	200	200	700

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: **22**

Total Credits: Second Year B. Tech. Trimester III: **13**

Total Second Year B. Tech. Credits: **15+14+13 = 42**

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( Dean )

**B. Tech. Petroleum Engineering (Third Year) (Batch 2017-18)**  
**Trimester – VII**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theor y	Lab	CCA	LCA	ETT	Total
1	<b>PE311</b>	Numerical Methods	ES	3	-	2	2	1	50	50	50	150
2	<b>PE312</b>	Petroleum Geology II	PC	4	-	2	2	1	50	50	50	150
3	<b>PE313</b>	Well Test Analysis and Interpretation	PC	3	-	2	2	1	50	50	50	150
4	<b>PE314</b>	Artificial Lift and Stimulation Techniques	PC	4	-	2	2	1	50	50	50	150
5		Human Values & Professional Ethics	WP	3	-	-	2	-	50	-	50	100
		Total :		17	-	8	10	04	250	200	250	700

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: **25**

Total Credits: Third Year B. Tech. Trimester I: **14**

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**B. Tech. Petroleum Engineering (Third Year) (Batch 2017-18)**

**Trimester – VIII**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	End Term Test	Total
1	<b>PE321</b>	Petroleum Exploration	PC	3	-	2	2	1	50	50	50	150
2	<b>PE322</b>	Well Design and Engineering	PC	4	-	2	2	1	50	50	50	150
3	<b>PE323</b>	Enhanced Oil Recovery	PC	3	-	2	2	1	50	50	50	150
4	<b>PE324</b>	Petroleum Finance and Economics	PC	3	1	-	2	-	50	-	50	100
5	<b>PE325</b>	Seminar /Mini Project	PR	-	-	2	-	-	-	50	-	50
6		Spirit and Mind	WP	3	-	-	2	-	50	-	50	100
		Total :		16	1	08	10	04	250	200	250	700

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: **24**

**Total Credits: Third Year B. Tech. Trimester II:14**

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**( Dean )**

**B. Tech. Petroleum Engineering (Third Year) (Batch 2017-18)**  
**Trimester – IX**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	End Term Test	Total
1	<b>PE331</b>	Formation Evaluation	PC	3	-	2	2	1	50	50	50	150
2	<b>PE332</b>	Surface Production Facilities Engineering	PC	3	-	2	2	1	50	50	50	150
3	<b>PE333</b>	Professional Elective I	PE	3	-	2	2	1	50	50	50	150
4	<b>PE334</b>	Open Elective I	OE	3	-	2	2	1	50	50	50	150
5	<b>PE335</b>	Computational Skills: Drilling, Production and Reservoir	PR	-	-	2	-	1	-	50	-	50
6		Gandhian Philosophy	WP	3	-	-	2	-	50	-	50	100
7		International Study Tour										
		Total :		15	-	10	10	05	250	250	250	750

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: **25**

Total Credits: Third Year B. Tech. Trimester III: 15

Total Third Year B. Tech Credits: 14+14+15 = 43

**(Prof. L. K. Kshirsagar)**  
(Dean)

**B. Tech. Petroleum Engineering (Final Year) (Batch 2017-18)**  
**Trimester – X**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	ETT	Total
1	<b>PE411</b>	Leadership and Project Management	LPC	3	-	-	2	-	50	-	50	100
2	<b>PE 412</b>	Professional Elective II	PE	3	-	2	2	1	50	50	50	150
3	<b>PE 413</b>	Open Elective II	OE	3	-	2	2	1	50	50	50	150
4	<b>PE 414</b>	Open Elective III	OE	3	-	2	2	1	50	50	50	150
5	<b>PE 415</b>	Mini Project /Interdisciplinary Project*	PR	-	-	2	-	2	--	100	-	100
		Total :		12	-	08	08	05	200	250	200	650

\* Seminar will be part of LCA

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: **20**

Total Credits: Final Year B. Tech. Trimester I: 13

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( Dean )

**B. Tech. Petroleum Engineering (Final Year) (Batch 2017-18)**  
**Trimester – XI**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	ETT	Total
1	<b>PE421</b>	Professional Elective III	PE	3	-	2	2	1	50	50	50	150
2	<b>PE422</b>	Professional Elective IV	PE	3	-	2	2	1	50	50	50	150
3	<b>PE423</b>	Open Elective IV	OE	3	-	2	2	1	50	50	50	150
4	<b>PE424</b>	Capstone Project: Stage I	PR	-	-	08	-	4	-	100	-	100
		Total :		06	-	14	6	7	150	250	150	550

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: **20**

Total Credits: Final Year B. Tech. Trimester II:13

( **Prof. L. K. Kshirsagar** )  
( Dean )

**B. Tech. Petroleum Engineering (Final Year) (Batch 2017-18)**  
**Trimester – XII**

Sr. No.	Course Code	Name of Course	Category	Weekly Workload, Hrs			Credits		Assessment Marks**			
				Theory	Tutorial	Lab	Theory	Lab	CCA	LCA	End Term Test	Total
1	<b>PE 431</b>	Professional Elective V	PE	2	1	-	2	-	50	-	50	100
2	<b>PE432</b>	Open Elective V	OE	2	1	-	-	-	50	-	50	100
3	<b>PE433</b>	Capstone Project with/ without Internship : Stage II	PR	-	-	18	-	9	-	300	-	300
		Total :		4	2	18	4	9	100	300	100	500

Type: (Refer Para 11 of Academic Ord. 2017)

\*\*Assessment Marks are valid only if Attendance criteria are met

Weekly Teaching Hours: **24**

\* CCA: Class Continuous Assessment

Total Credits: Third Year B. Tech. Trimester III:15 \*LCA : Laboratory Continuous Assessment

Total Final Year B. Tech Credits: 13+13+13 = 39

Total B. Tech Credits: 43+42+43+39 = 167 Credits

( Prof. L. K. Kshirsagar )  
( Dean )

**Choice /Guide Line for Selecting Professional Electives for T. Y. / Final Year B. Tech. (Petroleum)**  
**Batch: 2017-18**

<b>Career Specialization / Track / Domain</b>	<b>Professional Elective-I (Third Year-III)</b>	<b>Professional Elective-II (Fourth Year-I)</b>	<b>Professional Elective-III (Fourth Year-II)</b>	<b>Professional Elective-IV (Fourth Year-II)</b>	<b>Professional Elective-V (Fourth Year-III)</b>
<b>1) Exploration and / Economics</b>	<b>a)</b> Unconventional Hydrocarbon Resources	<b>a)</b> Petroleum Fiscal System	<b>a)</b> Risk and Reliability Analysis	<b>a)</b> Mergers and Acquisitions	<b>a)</b> Reservoir Characterization and Reserves Estimation
<b>2) Reservoir</b>	<b>b)</b> Natural Gas Engineering	<b>b)</b> Integrated Reservoir Management	<b>b)</b> Data Analytics in Oil and Gas	<b>b)</b> Reservoir Simulation and Modeling	<b>b)</b> Oil and gas Field Development
<b>3) Drilling</b>	<b>c)</b> Mud and Cementation Engineering	<b>c)</b> Well Control	<b>c)</b> _____	<b>c)</b> Horizontal and Multilateral Wells	<b>c)</b> Offshore Drilling Engineering Practices
<b>4) Production</b>	<b>d)</b> Well Completions and Services	<b>d)</b> Production Enhancement and Optimization	<b>d)</b> Offshore Production Engineering	<b>d)</b> Flow Assurance	<b>d)</b> Multiphase Flow :Theory and Applications
<b>5) Green /Environmental Engineering</b>	<b>e)</b> Environmental Engineering	<b>e)</b> Health , Safety and Environment in Oil and Gas	<b>e)</b> _____	<b>e)</b> _____	<b>e)</b> Process Safety Engineering
<b>6) Project Management / Emerging Technologies</b>	<b>f)</b> Logistics and Supply Chain Management	<b>f)</b> _____	<b>f)</b> Transport of Oil and gas	<b>f)</b> Subsea Systems Engineering	<b>f)</b> Gas Hydrates and Shale Gas
<b>7) General Engineering / Interdisciplinary</b>	<b>g)</b> Applied Electrical and Electronics Engineering	<b>g)</b> Pipe Line Design and construction Engineering.	<b>g)</b> Essentials of Oil and Gas Utilities	<b>g)</b> Industrial Automation	<b>g)</b> Digital Oil Field

**List of Open Electives (Offered):**

- 1) Exploration and Production of Hydrocarbons
- 2) Subsea Engineering
- 3) Process Safety Engineering
- 4) Nonconventional Hydrocarbon Resources
- 5) Process Instrumentation and Control
- 6) Petroleum Refining

**List of Open Electives (Expected):**

- 1) Data Analytics
- 2) Polymer Materials and Characterization
- 3) Mechatronics: Principles and Applications
- 4) Energy Engineering
- 5) Statistics
- 6) Introduction to Statistics and Data Analysis