

## **COURSE STRUCTURE**

**For**

## **PETROLEUM ENGINEERING**

*(Applicable for batches admitted from 2016-2017)*



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA - 533 003, Andhra Pradesh, India**

## I Year - I Semester

S. No.	Subjects	L	T	P	Credits
1-HS	English – I	4	--	--	3
2-BS	Mathematics - I (Differential Equations)	4	--	--	3
3-ES	Engineering Chemistry	4	--	--	3
4- ES	Engineering Mechanics	4	--	--	3
5-BS	Computer Programming	4	--	--	3
6-ES	Environmental Studies	4	--	--	3
7-HS	Engineering/ Applied Chemistry Laboratory	--	--	3	2
8-BS	English - Communication Skills Lab - I	--	--	3	2
9-ES	C Programming Lab	--	--	3	2
<b>Total Credits</b>					<b>24</b>

## I Year - II Semester

S. No.	Subjects	L	T	P	Credits
1-HS	English – II	4	--	--	3
2-BS	Mathematics – II (Mathematical Methods)	4	--	--	3
3-BS	Mathematics – III (Linear Algebra & Vector calculus)	4	--	--	3
4- BS	Engineering Physics	4	--	--	3
5-HS	Elements of Mechanical Engineering	4	--	--	3
6-ES	Engineering Drawing	4	--	--	3
7-BS	English - Communication Skills Lab - II	--	--	3	2
8-HS	Engineering /Applied Physics Lab	--	--	3	2
9-ES	Engineering / Applied Physics – Virtual Labs - Assignments	--	--	2	--
10	Engg.Workshop & IT Workshop	--	--	3	2
<b>Total Credits</b>					<b>24</b>

## II Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Complex Variables	4	--	--	3
2	Basic Electrical & Electronics Engineering	4	--	--	3
3	General Geology	4	--	--	3
4	Surveying & Offshore Structures	4	--	--	3
5	Chemical Process Calculations	4	--	--	3
6	Materials Science & Engineering	4	--	--	3
7	Basic Engineering (Mech. + Elec.) Lab	--	--	3	2
8	Geology & Surveying Lab	--	--	3	2
MC	Managerial Economics & Financial Analysis	2	--	--	--
<b>Total Credits</b>					<b>22</b>

## II Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Probability & Statistics	4	--	--	3
2	Momentum Transfer	4	--	--	3
3	Petroleum Geology	4	--	--	3
4	Thermodynamics for Petroleum Engineers	4	--	--	3
5	Process Heat Transfer	4	--	--	3
6	Petroleum Exploration	4	--	--	3
7	Momentum Transfer Lab	--	--	3	2
8	Process Heat Transfer Lab	--	--	3	2
MC	Professional Ethics & Human Values	2	--	--	--
<b>Total Credits</b>					<b>22</b>

## III Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Management Science	4	--	--	3
2	Process Dynamics & Control	4	--	--	3
3	Process Instrumentation	4	--	--	3
4	Well Logging & Formation Evaluation	4	--	--	3
5	Drilling Technology	4	--	--	3
6	Mathematical Methods Lab	--	--	3	2
7	Instrumentation, Process Dynamics & Control Lab	--	--	3	2
8	Drilling Fluids Lab	--	--	3	2
9	Industrial Visits	--	--	-	-
MC	Mini Project-I	--	--	--	--
<b>Total Credits</b>					<b>21</b>

## III Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	Well Completions, Testing & Servicing	4	--	--	3
2	Petroleum Production Engineering	4	--	--	3
3	Petroleum Reservoir Engineering-I	4	--	--	3
4	Petroleum Refinery & Petrochemical Engineering	4	--	--	3
5	<b>OPEN ELECTIVE</b>	4	--	--	3
	i. Electronic Instrumentation				
	ii. Big Data Analytics				
	iii. Alternative Energy Sources for Automobiles				
	iv. Waste water Management				
	v. Fundamentals of Liquefied Natural Gas				
6	Drilling Simulation Lab	--	--	3	2
7	Petroleum Analysis Lab	--	--	3	2
8	Petroleum Reservoir Engineering Lab	--	--	3	2
9	Summer Internship ( 4-6 weeks)	--	--	--	--
MC	Mini Project-II	--	--	--	--
<b>Total Credits</b>					<b>21</b>

## IV Year - I Semester

S. No.	Subjects	L	T	P	Credits
1	Integrated Asset Management	4	--	--	3
2	Petroleum Reservoir Engineering - II	4	--	--	3
3	Surface Production Operations	4	--	--	3
4	Oil & Gas Processing Plant Design	4	--	--	3
5	<b>Elective I</b>	4	--	--	3
	i. Natural Gas Hydrates				
	ii. Pipeline Engineering				
iii. Horizontal Well Technology					
6	<b>Elective II</b>	4	--	--	3
	i. Coal Bed Methane Engineering				
	ii. Offshore Engineering				
iii. Reservoir Stimulation					
7	IPR & Patents	--	2	--	--
8	Petroleum Equipment Design & Simulation Lab	--	--	2	2
9	Petroleum Reservoir Simulation Lab	--	--	2	2
<b>Total Credits</b>					<b>22</b>

## IV Year - II Semester

S. No.	Subjects	L	T	P	Credits
1	EOR Techniques	4	--	--	3
2	HSE & FE in Petroleum Industry	4	--	--	3
3	Petroleum Economics, Policies & Regulations	4	--	--	3
4	<b>Elective III</b>	4	--	--	3
	i. Shale Gas Reservoir Engineering				
	ii. Subsea Engineering				
iii. Reservoir Modelling & Simulation					
5	Seminar ( SIP Report Presentation)	--	--	--	2
6	Project	--	--	--	10
<b>Total Credits</b>					<b>24</b>

**Total Course Credits = 48+44 + 42 + 46 = 180**