JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

Kakinada-533003, Andhra Pradesh (India)

Program wise Curriculum Analysis of (R20)

Program Code	Program Name	No of Courses having focus on			Total Courses	Percentage
		Employability	Entrepreneurship	Skill development		
	B.Tech – PETROLEUM ENGINEERING	3	3	25	83	37%

Coordinator

HOD/Director

Head
Dept. of Petroleum Engineering &
Petrochemical Engineering, UCEK (A
J.N.T.University Kakinada
Kakinada - 533 003 A.P India

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

Kakinada-533003, Andhra Pradesh (India)

Course wise Curriculum Analysis (R20)

Program Code: Program Name: B.Tech – PETROLEUM ENGINEERING   Year: 1   **Semester: 1**

Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
BS	Mathematics - I			
BS	Engineering Physics			
ES	Engineering Mechanics			
ES	Elements of Mechanical Engineering			
ES	Basic Electrical and Electronics Engineering			
ES	Engineering Workshop and IT Workshop			Yes
BS	Engineering Physics Laboratory			Yes
ES	Basic Engineering (Mechanical & Electrical) Laboratory			Yes
BS	Physics Virtual Laboratory			Yes
MC	Constitution of India			
BS	Mathematics - I			
	Total			4

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Kakinada-533003, Andhra Pradesh (India)

Course wise Curriculum Analysis (R20)

Program Code: Program Name: B.Tech – PETROLEUM ENGINEERING   Year: 1   **Semester: 2**

Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
BS	Mathematics – II			
BS	Engineering Chemistry			
HS	Communicative English			
ES	Engineering Drawing			
ES	Programming for problem solving using - C			Yes
HS	English Communication Skill Lab			Yes
BS	Engineering Chemistry Laboratory			Yes
ES	Programming for problem solving using C- Laboratory			Yes
HS	Professional Ethics and Human Values			
	Physical Fitness Activities			
	Total			4

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
Kakinada-533003, Andhra Pradesh (India)

Course wise Curriculum Analysis (R20)

Program Code: 33   Program Name: B.Tech – PETROLEUM ENGINEERING   Year: 2   Semester: 1

Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
BS	Mathematics – III			
PCC	Petroleum Geology			
PCC	Fluid Mechanics for Petroleum Engineers			
PCC	Heat Transfer Operations			
PCC	Material and Energy Balances			Yes
PCC	Petroleum Geology-Laboratory			Yes
PCC	Fluid Mechanics for Petroleum Engineers-Laboratory			Yes
PCC	Heat Transfer Operations- Laboratory			Yes
SC	Python programming			Yes
MC	Environmental Science			
	Total			5

Course wise Curriculum Analysis (R20)

Program Code: 33　　　　Program Name: B.Tech – PETROLEUM ENGINEERING　　　　Year: 2　　　　Semester: 2

Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
HS	Management Science			
BS	Mathematics –IV			
PCC	Instrumentation, Process Dynamics & Control			
PCC	Thermodynamics for Petroleum Engineers			
PCC	Drilling & Well Completions			
PCC	Instrumentation, Process Dynamics & Control -Laboratory			Yes
PCC	Mathematical methods for Petroleum Engineers – Laboratory			Yes
PCC	Drilling Fluids – Laboratory			Yes
SC	Industry Exploration Project			Yes
	Total			4

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
Kakinada-533003, Andhra Pradesh (India)

Course wise Curriculum Analysis (R20)

Program Code: 33   Program Name: B.Tech – PETROLEUM ENGINEERING   Year: 3   **Semester: 1**

Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
PCC	Petroleum Exploration			
PCC	Well Logging & Formation Evaluation			
PCC	Petroleum Reservoir Engineering-I			
OEC	Open Elective Course (for other branches) 1. Introduction to Petroleum Engineering 2. Safety in Petroleum Operations 3. Corrosion Control in Petroleum Industry			Yes
PEC	Professional Elective courses 1. Fundamentals of Liquefied Natural Gas. 2. CBM Reservoir Engineering 3. Offshore Drilling Composites			Yes
PCC	Petroleum Reservoir Engineering -Laboratory			Yes
PCC	Drilling Simulation – Laboratory			Yes
SC	Soft Computing Techniques			Yes
MC	Essence of Indian Traditional Knowledge			
	Total			5

Course wise Curriculum Analysis (R20)

Program Code: Program Name: B.Tech – PETROLEUM ENGINEERING   Year: 3   Semester: 2

Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
PCC	Petroleum Production Engineering			
PCC	Petroleum Reservoir Engineering-II			
PCC	Petroleum Refinery & Petrochemical Engineering			
PEC	Professional Elective courses 1. Advanced Well Completion Engineering 2. Applied Mathematics in Reservoir Engineering 3. Natural Gas Hydrates)			Yes
OEC	1. Open Elective Course (for other branches) 2. Basic concepts in Petroleum Drilling and Completions 3. Basic concepts in Petroleum Production Engineering 4. Basic concepts in Petroleum Reservoir Engineering			Yes
PCC	Petroleum Analysis-Laboratory			Yes
PCC	Petroleum Equipment Design & Simulation -Laboratory			Yes
PCC	Petroleum Reservoir Simulation-Laboratory			Yes
SC	Data Science			Yes
MC	IPR & Patents			
Total				6

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
Kakinada-533003, Andhra Pradesh (India)

Course wise Curriculum Analysis (R20)

Program Code: 33   Program Name: B.Tech – PETROLEUM ENGINEERING   Year: 4   Semester: 1

Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)

PE-3	Professional Elective courses
	  1. Design of Surface Facilities
	  2. Reservoir Modeling & Simulation
	  3. Subsea Engineering
			Yes	

PE-4	Professional Elective courses
	  1. HSE in Petroleum Industry
	  2. Well Stimulation
	  3. Horizontal Well Technology
			Yes	

PE-5	Professional Elective courses
	  1. Petroleum Economics, Policies and Regulations
	  2. EOR Techniques
	  3. Asset Management
			Yes	

OE-3	Open Elective Courses (for other branches)
	  1. Transportation of oil and gas
	  2. Basics concepts in Seismic methods for Hydrocarbon Exploration
	  3. Basic concepts in Artificial lift methods
		Yes		

OE-4	Open Elective Courses (for other branches)
	
	  1. Deep water Technology
	
	  2. Basic concepts of acidizing and hydro-fracturing
	
	  3. Fundamentals of EOR Techniques
		Yes		

HSC-3	Universal Human Values 2: Understanding Harmony			
SOC-5	Cloud Computing			Yes

	Evaluation of Summer Internship completed after III B.Tech II Semester			
	Total	2	3	1

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Kakinada-533003, Andhra Pradesh (India)

Course wise Curriculum Analysis (R20)

Program Code: 33   Program Name: B.Tech – PETROLEUM ENGINEERING   Year: 4   **Semester: 2**

Course code	Course name		Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
Major Project	PROJ		yes		
			1		

Coordinator   **Chairman, Board of Studies**

Program wise Curriculum Analysis of (R19)

Program Code	Program Name	No of Courses having focus on			Total Courses	Percentage
		Employability	Entrepreneurship	Skill development		
	M.Tech – PIPELINE ENGINEERING	2	7	9	20	90%

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Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
PC -1	Pipeline Engineering – 1: Design		YES	
PC-2	Pipeline Engineering – 2: Construction		YES	
PE -1	1. Advanced Numerical Methods and Applied Statistics 2. Transportation of oil and gas			
PE-2	1. Pipeline Route Selection & Surveying 2. Stress and Vibration Analysis in Pipelines			
	Research Methodology and IPR			YES
AC-1	Pipeline Project Evaluation and Management		YES	Yes
L-1	Crude Oil and Product Testing Laboratory			Yes
L-2	Pipeline Engineering Design and Optimization Laboratory			Yes
	Total		3	4

Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
PC-3	Pipeline Engineering – 3: Operation & Maintenance	YES		
PC-4	Pipeline Network Analysis			
PE-3	1. Pumps, Compressors and Prime Movers 2. Pipeline Corrosion and Its Control			
PE-4	1. Pipeline System Automation & Control 2. Defect Assessment and Maintenance in Pipelines		YES	
AC-2	Pipeline Risk Management		YES	
L-3	Pipeline Simulation and Analysis Laboratory			Yes
L-4	Pipeline Network Analysis Laboratory			Yes
PE-4	Internship in Pipeline Industries and Presentation			Yes
Total		1	2	3

Course code	Course name	Employability (Yes/No)	Entrepreneurship (Yes/No)	Skill development (Yes/No)
PE-5	MOOCs- I†			YES
OE	MOOCs – II†			
	In - house Project / external (Industrial /other academia) with dissertation.		YES	
	Total		1	1