



Institute of Petroleum Engineers

*An initiative run by alumni of IIT
Madras*

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**Online Video Lecture
Series**

Online Test Series

**Online Practice Series
(Question Bank)**

**Offline Classroom
program**

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1. About IPE:

INSTITUTE OF PETROLEUM ENGINEERS (IPE) is an initiative taken by alumni of IIT Madras for providing a conceptual learning platform for PETROLEUM GATE exam. I-PE represents becoming one with the very core of petroleum engineering. Our aim is to provide students with the crude knowledge that one requires to understand all the concepts (basic to advance) and implement them to become a better Petroleum Engineer. IPE services present a holistic background and explain concepts involved in GATE PE topics in an insightful way to reach the solution.

2. Online Video Lecture Series

Amid this pandemic situation, DON'T let your preparation suffer. Registration for online video lecture platform will start from 21st February, 2021. 350+ hours of video lectures will be at your disposal, covering basics to advance concepts and numerical to give you an edge in your preparation. We will leave no stone unturned ensuring that you get the best content and that too from the past GATE PE rankers as well as professionals from oil and gas industry. We are providing you a platform where you get to know how these guys prepared and learn from them their strategies and above all the mistakes that they committed so that you don't face the same scenarios. IPE is acting as a bridge between you and great mentors of our field.

What includes in Package A?

- ✓ Complete PE GATE recorded video lectures.
- ✓ Daily doubt resolving sessions on Call/WhatsApp.
- ✓ Top GATE rankers and domain expert teachers.
- ✓ Postal study material.
- ✓ Practice sets (Question bank).
- ✓ Online test series.
- ✓ Monthly exam.

- ✓ Separate numerical discussion of all subjects.
- ✓ Previous year GATE questions discussion.
- ✓ Offline doubt solve at Dehradun centre.
- ✓ Take home questions and discussions.
- ✓ Personal mentorship program.
- ✓ Digital reference books.
- ✓ Counselling.
- ✓ Motivational webinars.
- ✓ Toppers talk.

FLAT Rs 10,000 OFF

Offer valid for First 30 registrations only

In Just Rs ~~35,000~~ 25,000/-

Important Points:

IPE Switch OR Retain

- ✚ Team IPE understands the requirements of students. For students who are confused whether to opt for online classes or go for physical coaching, team IPE is providing you with the option to switch from online mode to offline mode. You can register now with online mode and later pay the difference in amount to avail the offline coaching at Dehradun. Also students undergoing online classes and living in Dehradun can visit our office for doubts clarification.
- ✚ Validity of Package A is 07th February, 2022
- ✚ The validity lasts till 07th February, 2022. The best part is that you can extend your package for another year by just paying 1/3rd of the package amount.
- ✚ Registered Students can access every video 3 times till validity expires (07th February, 2022).

- + If Course renewal option is utilized (after 07th February, 2022) by students, they will get more 2 chances per videos.
- + If any Student wants to access any video after exhausting all 3 chances, they can write to us with valid reasons, we will allow access again depending on the circumstances.

3. Fees

Package A (Online batch)

Fees	Validity	Offer
Rs 35,000 (including GST)	07 th February, 2022	Yes (For first 30 registrations)
Offer for first 30 registrations – FLAT Rs 10,000 OFF		
Offer Price (Fee)	Validity	
Rs 25,000 (including GST)	07 th February, 2022	

Offline classes

Fee	Offer
Rs 45,000 (including GST)	Yes (For first 20 students)
Offer for first 20 students – FLAT Rs 10,000 OFF	
Fee	Term and condition
Rs 35,000 (including GST)	At the time of admission you have to pay full amount of fees

Pay fee in installment (only for offline classes)

Installment 1	Rs 27,000
Installment 2	Rs 18,000

Test Series and practice sets

Online test series	Rs 1699 (including GST)
Practice sets (Question bank)	Rs 3999 (including GST)

4. Scholarship

On the basis of GATE 2020/2021 rank

ALL India rank in GATE 2020/21	Scholarship
Under AIR 20	50%
Under AIR 21 - 50	40%
Under AIR 51 - 100	30%

On the basis of B.Tech score

Percentage	Scholarship
Above 75%	15%
Above 65%	10%

Important note

- ✚ To avail the scholarship, you (students) have to pay full amount of fee (after deduction) at the time of admission.

5. THE TEAM

Just like a lighthouse guides ships and shows a clear path, a good mentor guides and show students a clear path, saving their precious preparation time. Keeping this in mind team IPE brings you online video lectures designed and delivered by past and recent GATE rank holders. The lectures are designed in a specific manner to ensure that students don't waste time on learning unnecessary concepts and don't commit the same mistakes that rankers made during their preparation time. All the necessary concepts and tips and tricks regarding GATE exam are just one click away.

TOP GATE RANKERS & DOMAIN EXPERTISE TEACHERS

1. Jaiz P Baby: AIR 3 (GATE 2020)

B.Tech from University of Technology and Management Shillong, M.Tech from ISM Dhanbad

2. Raunak Gupta: AIR 4 (GATE 2019)

B.Tech from PDP, M.Tech from IIT Madras
AEE (Drilling), ONGC

3. Gaurav Saini: AIR 5 (GATE 2020)

B.Tech from UPES, M.Tech from ISM Dhanbad

4. Rohin Goyal: AIR 11 (GATE 2019)

B.Tech from UPES, M.Tech from IIT Madras
AEE (Production), ONGC

5. Anshul Jha: AIR 16 (GATE 2020)

B.Tech from UPES, M.Tech from ISM Dhanbad

6. Divyanshu Vyas: AIR 17 (GATE 2020)

B.Tech from PDP, M.Tech from IIT ISM Dhanbad

7. Shubham Debnath: AIR 19 (GATE 2019)

B.Tech from Dibrugarh University
AEE (Drilling), ONGC

8. Sonu Suthar: AIR 31 (GATE 2018)

B.Tech from RTU Kota
AEE (Production), ONGC

9. Brijesh Kuri: AIR 32 (GATE 2019)

B.Tech from RTU, M.Tech from IIT ISM Dhanbad
AEE (Production), ONGC

10. Navdeep Dhaka: AIR 33 (GATE 2020)

B.Tech from RTU Kota, M.Tech from IIT ISM Dhanbad

11. Gunjan Jha:

Ph.D from IIT Roorkee

**APPENDIX A-1:
PETRO MASTER TEST SERIES
Gate - 2022**

TEST NO.	SUBJECT	LEVEL
1	DRILLING	DIAGENESIS
2		CATAGENESIS
3		METAGENESIS
4	RESERVOIR	DIAGENESIS
5		CATAGENESIS
6		METAGENESIS
7	PRODUCTION (SURFACE FACILITY)	DIAGENESIS
8		CATAGENESIS
9		METAGENESIS
10	PRODUCTION (ARTIFICIAL LIFT)	DIAGENESIS
11	PRODUCTION (Well Equipment)	DIAGENESIS
12		CATAGENESIS
13		METAGENESIS
14	Formation Evaluation	DIAGENESIS
15		CATAGENESIS
16		METAGENESIS
17	Well Testing	DIAGENESIS
18		CATAGENESIS
19		METAGENESIS
20		DIAGENESIS

21	EOR	CATAGENESIS
22		METAGENESIS
23	HSE	COMPLETE SYLLABUS
24	EXPLORATION	COMPLETE SYLLABUS
25	MATHEMATICS 1	Matrix, Calculus, Differential equation
26	MATHEMATICS 2	Numerical analysis, Probability, Laplace, Complex number
27	Aptitude	complete
28	Aptitude	complete
29	Major Test 1	Complete Syllabus
30	Major Test 2	Complete Syllabus
31	Major Test 3	Complete Syllabus
32	Major Test 4	Complete Syllabus
33	Major Test 5	Complete Syllabus

34	Major Test 6	Complete Syllabus
35	Major Test 7	Complete Syllabus
36	Major Test 8	Complete Syllabus
37	Major Test 9	Complete Syllabus
38	Major Test 10	Complete Syllabus
39	Major Test 11	Complete Syllabus

**APPENDIX A-2:
PETRO PRACTICE SETS (Question Bank)**

SUBJECT	TOPIC	NUMBER OF SETS
Reservoir Engineering	Petro physical properties of reservoir rocks	5
	Coring and core analysis	1
	Reservoir fluid properties	5
	Phase behaviour of hydrocarbon system	1
	Flow of fluids through porous media	2
	Water and gas coning	1
	Reservoir pressure measurements	1
	Reservoir drives, drive mechanics and recovery factors	2
	Reserve estimation & techniques.	2
	Well planning, Drilling method	1
	Drilling rigs Rig operating systems.	3
	Drilling fluids function and properties, Drilling	2

Oil and Gas Well Drilling Technology	fluid maintenance equipment	
	Oil & gas well cementing operations	2
	Drill bit types and their applications (Hydraulics)	2
	Drill string & Casing string function, operations, selection & design	1
	Drilling problems, their control & remedies	1
	Directional drilling tools, Directional survey	2
	Application of horizontal, multilateral, extended reach, slim wells	1
Enhanced Oil Recovery Techniques	Water flooding	1
	Thermal flooding	1
	Polymer flooding	1
	Miscible Flooding	1
General Aptitude	Complete	8
Engineering	Matrix	3
	Calculus	3
	Differential equations	3

Mathematics	Complex variables	2
	Probability and Statistics:	2
	Numerical Methods	2
	Laplace	1
Geology	Complete	5
Well Testing	Diffusivity Equation	1
	DST	1
	Superposition & radius of investigation	1
	Injection well testing	1
	Build up and Draw down	3
Well logging	Complete	3
Health Safety and Environment in Petroleum Industry	Complete	3
	Heat Exchanger	2
	Separator	2
	Stimulation	1
	Choke Performance	1
	Artificial lift	5
	Well equipments and Well	1

Petroleum Production Operations	completion techniques.	
	Well production problems and mitigation	1
	Well servicing & Work over operations.	1
	Nodal system analysis	2
	Pumps and compressors	2
	Multiphase flow in tubing and flow-lines	1
Latest Trend	Complete	3
Offshore Drilling and Production Practices	Complete	3

APPENDIX A-3
VIDEO LECTURES OF DRILLING ENGINEERING
(Hindi and English)

Lecture number	Topic name
Introduction	Drilling Engineering
1	Well Planning & Drilling Methods
2	Rig components-1
3	Rig components-2
4	Hoisting system
5	Drilling Rig-1
6	Drilling Rig-2
7	Drilling Rig-3
8	Well Control
9	Drilling Fluid-1
10	Drilling Fluid-2
11	Drilling Fluid-3
12	Drilling Fluid-4
13	Drilling Fluid-5
14	Drilling Fluid-6
15	Drilling Fluid-7
16	Cementing -1
17	Cementing-2
18	Cementing-3
19	Cementing-4
20	Cementing-5
21	Cementing-6
22	Drill string Design-1
23	Drill string Design-2
24	Drill string Design-3
25	Casing Design
26	Drilling Bit
27	Directional Drilling - 1
28	Directional Drilling - 2

29	Directional Drilling – 3
30	Directional Drilling – 4
31	Well Problems
32	Well Control
33	Previous years Questions Discussion
34	Rheological Models
35	Directional Drilling Concept
36	Well Bore Curvature Well control Kick Tolerance
37	Formation pore pressure and fracture resistance - 1
38	Formation pore pressure and fracture resistance –2
39	Formation pore pressure and fracture resistance - 3

VIDEO LECTURES OF OFFSHORE (Hindi and English)

Topic	Lecture Number
Ocean environment	1
Offshore platforms	2
	3
Stability of platforms	4
Motion and offset	5
Station keeping methods (Mooring)	6
Station keeping methods (dynamic positioning system)	7
	8
conductors and risers	9
	10
Offshore well completion	11
SPM and SBM transportation and utilities	12
Some extra topics	13

VIDEO LECTURES OF FORMATION EVALUATION (Hindi and English)

LECTURE NUMBER	TOPIC NAME
0	Introduction
1	Archie's law
2	Borehole Environment
3	Sp log
4	Resistivity Theory
5	Resistivity Tools
6	Induction logging
7	Sp log examples
8-A	Resistivity logs
8-B	Resistivity logs
9	Radioactivity Gamma ray log
10	Density Tool
11	Litho Density Tool
12	Neutron logging-1
13	Neutron logging -2
14	Gamma ray examples
15	Porosity log examples neutron density crossplots chart
16	Sonic Theory and Sonic Logging
17	Sonic Logging Tools - 1
18	Sonic Logging Tools - 2
19	Nuclear Magnetic Resonance -1
20	Nuclear Magnetic Resonance -2
21	Nuclear Magnetic Resonance- logs
22	CBL/VDL
23	Quiz discussion
24	Production logging_1
25	Production logging-2

VIDEO LECTURES OF PETROLEUM PRODUCTION OPERATION (Hindi and English)

LECTURE NUMBER	TOPIC NAME
Introduction	Introduction
Introduction	Basics of Petroleum Engineering
Introduction	Production Engineering
1	Reservoir Deliverability
2	Flow Regime
3	Transient Flow
4	Unit conversion
5	Steady State Flow
6	Pseudo steady state
7	Derivation of steady state equation
8	Transient state numerical
9	Stabilized state numerical
10	Pseudo steady state numerical
11	Productivity index
12	Productivity index numerical
13	IPR one phase
14	IPR two phase
15	Vogel numerical
16	Partial two phase IPR
17	Partial two phase IPR numerical
18	Future IPR
19	Fetkovich equation
20	Fetkovich equation numerical
21	Wellbore performance introduction
22	Energy Balance

23	Pressure drops due to friction, unit conversion gc
24	Poiseuille derivation
25	Poiseuille numerical
26	VLP Plotting
27	Liquid Holdup & numerical
28	Multiphase flow vertical
29	Multiphase flow horizontal
30	VLP Models
31	NODAL Analysis-1
32	Nodal Analysis-2
33	Nodal Analysis-3
34	Wellbore Deliverability
35	Artificial lift introduction
36	AL Active well, Dead well
37	SRP introduction
38	Type of SRP API name Pump displacement
39	Effective Stroke Length
40	SHM motion
41	Conventional motion
42	Maximum and Minimum Acceleration
43	PPRL & MPRL
44	PPRL MPRL Numerical
45	SRP disadvantages and advantages
46	Gas Lift introduction
47	Gas lift working
48	Gas lift valve opening & closing
49	Gas lift IPR VLP
50	ESP
51.1	ESP total dynamic head pressure

51.2	ESP-pump characteristics
51.3	ESP numerical-1
51.4	ESP numerical-2
52	ESP-advantages & disadvantages
53	PLUNGER LIFT
54	Progressive cavity pump
55	PCP geometry
56	Jet pump
57	Velocity profile common doubt gate-2020
58	Well completion –A
59	Well completion –B
60	Well activation
61	Skin
62	Formation damage
63	Perforation
64	Hydrofracking
65	Hydro frack numerical
66	Acidization
67	Paraffins and Asphaltenes
68	Scales
69	Sand control and Gravel pack
70	Gravel pack & sieve analysis
71	Workover operation
71.2	Workover operation
72	Wireline and slickline and ctu
73	Introduction surface facilities
74	Concept of multi stage separator
75	Different type of section in separator
76	Type of separator
77	Separator vessel internal

78	Potential operating problems
79	Packer calculation
80	Separator design
81	Three phase separator
82	Emulsion
83	Emulsion treatment surface facilities
84	Heat exchanger
85	Pumps
86	NPSHA numerical
87	Compressor
88	Compressor numerical
89	Storage tank
90	LNG
91	METERING
92	3-phase separator
93	Well completion intro
94	Well completion-1
95	Well completion-2
97	Well completion-3
98	Well completion-4
99	Well completion-5

VIDEO LECTURES OF ENHANCED OIL RECOVERY (Hindi and English)

LECTURE NUMBER	TOPIC NAME
1	INTRODUCTION of water flooding
2	Flooding patterns
3	Fractional flow
4	Fractional flow and unit conversion
5	Frontal advance theory -1
6	Frontal advance theory -2
7	Mobility ratio initial gas saturation
8	Viscous fingering conformance
9	Miscible flooding-1
10	Miscible flooding-2
11	Co2 injection capillary number
12	Polymer flooding
13	Miceller polymer flooding
14	Alkaline flooding
15	Thermal steam
16	Steam injection
17	Thermal insitu combustion
18	TERNARY DIAGRAM-chemical flooding
19	Microbial

**VIDEO LECTURES OF OIL and GAS WELLTESTING
(Hindi and English)**

LECTURE NUMBER	TOPIC NAME
1	Fluid flow through porous media-concept
2	Flow equation -linear flow-1
3	Flow equation -linear flow-2
4	Flow equation -radial flow
5	Diffusivity equation
6	Transient state solution of diffusivity equation
7	Transient stage formation damage
8	Wellbore storage effect
9	Dimensionless parameters
10	Dimensionless well bore storage
11	Derivative plots
12	Pseudo steady state-intuition
13	PSS-dietz shape factor

VIDEO LECTURES OF RESERVOIR ENGINEERING (Hindi and English)

Lecture Number	Topic Name
Introduction	Reservoir Engineering
Introduction	Porosity
0	Permeability
1	Rock Properties
2	Porosity
3	Capillary Pressure
4	Capillary Pressure
5	Capillary Pressure
6	Wettability and Surface Tension
7	Unit conversion
8	Capillary pressure and Permeability
9	Permeability
10	Relative Permeability-1
11	Relative Permeability-2
12	Reservoir Flow Dynamics-1
13	Structural Aspects of Permeability
14	Deriving permeability for various cases
15	Phase behavior -1
16	Phase behavior -2
17	Fluid properties
18	Gas properties calculation
19	Gas material balance
20	Energy plot
21	Crude oil properties
22	Crude oil properties

23	Material balance fundamentals
24	Material balance preview
25	Oil reservoir Material balance-1
26	Oil reservoir Material balance-2
27	Understanding gas oil ratio
28	Important observation from MBE

VIDEO LECTURES OF NUMERICAL DISCUSSION

LECTURE NUMBER	TOPIC NAME
1	Detail explanation of modified vogel's equation
2	Drag force & settling velocity
3	Fluid potential and Rig hoisting efficiency
4	Rig numerical & concentration concept
5	concentration concept
6	Viscosity numerical
7	Relative uncertainty and porosity numerical
8	Alkalinity –Drilling fluid-1
8.1	Alkalinity –Drilling fluid-2
9	Capillary Pressure Numerical
10	Doubts Discussion Capillary Pressure Derrick Efficiency API water loss
11	Gas Condensate
12	Packer Calculation
13	Doubts discussion and Decline curve Numerical
14	Packer calculation
15	Decline curve
16	Separator Design
17	Q. 30 of quiz -2 and vertical separator

18	3 phase separator
19	direction drilling basic
20	Ternary Diagram (Chemical Flooding)
21	Well Bore Curvature Well control Kick Tolerance
22	Quiz 2.1 Discussion

VIDEO LECTURES OF Mathematics

Topic	Lecture Number
Linear Algebra	1
	2
	3
	4
	5
	6
	7
	8
	9
Differential Equation	10
	11
	12
	13
	14

	15
Laplace transform	16
	17
Complex Function	18
	19
	20
	21
	22
Calculus	23
	24
	25
	26
	27
	28
	29
	30
	31
Numerical Methods	32
	33
	34
	35
	36
	37

	38
Probability and Statics	39
	40
	41
	42
	43
	44
*Doubts Discussion	

6. GATE 2021 Top Performers:

Name	All India Rank	Program Enrolled
Prabhat Kumar	06	Test Series
Animesh Choudhary	07	Test Series
Siddharth Jain	08	Test Series
Ayush Sharma	10	Test Series
Agrani	13	Classroom
Adithya Sai Kiran	18	Test Series
Manna Mukherjee	18	Classroom
Raj Sakia	25	Classroom
Sharique	25	Classroom

Utkarsh Singh	27	Test Series
Shubham Kumar	35	Test Series
Arsh Attri	38	Test Series
Anshul Deshwal	38	Test Series
Ronak Manishbhai	46	Test Series
Anuj Bhatia	60	Test Series
Suraj Kumar	65	Test Series
Anshul Shukla	71	Test Series
Anjani Kumar	73	Test Series
Pranali M Rane	80	Test Series
Sheel Patel	82	Test Series
Manish Kumar	85	Classroom
Vinod Kumar Acharya	85	Test Series

7. Contact Us:

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