



SITARAMBHAI NARANJI PATEL
INSTITUTE OF TECHNOLOGY AND RESEARCH CENTRE, UMRAXH

A Vidyabharti Trust Institution

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Expert Lecture on

“Operation Research”

06th October, 2021



S. N. Patel Institute of Technology & Research Centre

Umrakh- Bardoli

Mechanical Engineering Department

Report Prepared by: Prof Rinkesh B Patel

VENUE

(Online Mode)



Webinar Topics	Operation Research
Date	06/10/2021, Wednesday 11:00 am onwards
Department & Year	3 rd Year Mechanical Engineering
Venue	Google Meet Platform
Expert	Dr. D. B. Naik Ex. Professor & Head, Training & Placement, SVNIT, Surat
Event Co-ordinator	Prof. Vishal Z Dhimmar



S. N. Patel Institute of Technology & Research Centre, Umrakh
(A Vidyabharti Trust Institution)

**Mechanical Engineering
Department
Organised Expert Lecture On
Operation Research**

Date: 06/10/2021
Time: 11:00 am onwards



Dr. D B. Naik
Ex. Professor & Head
Mechanical Engineering Department
SVNIT, Surat

Prof. Rinkesh B. Patel
Coordinator
SNPIT & RC, Umrakh

Prof. Vishal Dhimmar
I/C Head, Mechanical
SNPIT & RC, Umrakh

Dr. Piyush S. Jain
Principal
SNPIT & RC, Umrakh

Vidyabharti Campus, At & Po Baben, Ta: Bardoli, Dist: Surat, Pin: 394601 | Contact No.: 9925 777 117

Topics Covered in Webinar

- Game Theory
- “Two Person Zero Sum” game
- Saddle Point
- Pure Strategy and Mixed Strategy
- Dominance Rule
- Value of game for given Mixed Strategies of both players
- Algebraic Method to find “Optimal Solution “for 2x2 Mixed Strategy “Game Problems
- Methods to solve 2xN or Nx2 “Game Problems
- Application of LP to solve “Game Problems



Objective of Expert Lecture:

Game theory is an approach to modeling behavior in situations where the outcome of your decisions depends on the decisions of others. Game theory is the study of strategic, interactive decision making among rational individuals or organizations.

Game theory provides a mathematical framework for understanding the optimal outcome and what the tradeoffs are to achieve that outcome. We build models using game theory to help our clients make strategic and tactical decisions within the context of many possible scenarios and competitive responses.

Game theory is applied for determining different strategies in the business world. It offers valuable tools for solving strategy problems. Game theory models forces each player to consider the actions of others when picking their strategy, in which one player may respond to the moves of his competitor.

About expert Speakers:

Dr. D. B. Naik
Ex. Professor & Head,
Training & Placement Section,
Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat, India

He has conferred the bachelor's degree in Mechanical Engineering from, **BVM, VVN, and SPU** in 1970. He was completed his Mastered SVR in 1977. He had done his PHD from SVR in 1977. He started his carrier as an assistant lecture in BVM during 1970 to 1974. After this, He starts his carrier as lecture in SVR, Surat during 1974 to 1987. Then he worked as Assistant Professor in SVR, Surat during 1987 to 1999. He worked as Professor in SVR, Surat during 1999 to 2011.

He also worked as Training & placement officer, MED, SVR, Surat during 1999 to 2011. After December 2011, at age of 65yr he was retired. Then he worked as visiting professor in SVR, Surat.

Outcome of Expert Lecture:

- Dr. D. B. Naik has delivered such an ergastic presentation for what is game theory, Saddle Point, Dominance Rule and Application of LP to solve “Game Problems etc. The whole session was interactive and students enjoyed a lot during the session to learn new things. Total 90 students attended in this expert lecture and gained in-depth knowledge on the topic which could be helpful for their course studies (CO – 4).



[5] Pure Strategy and Mixed Strategy

1	2	1
2	3	2
2	3	

$\therefore V = 2$

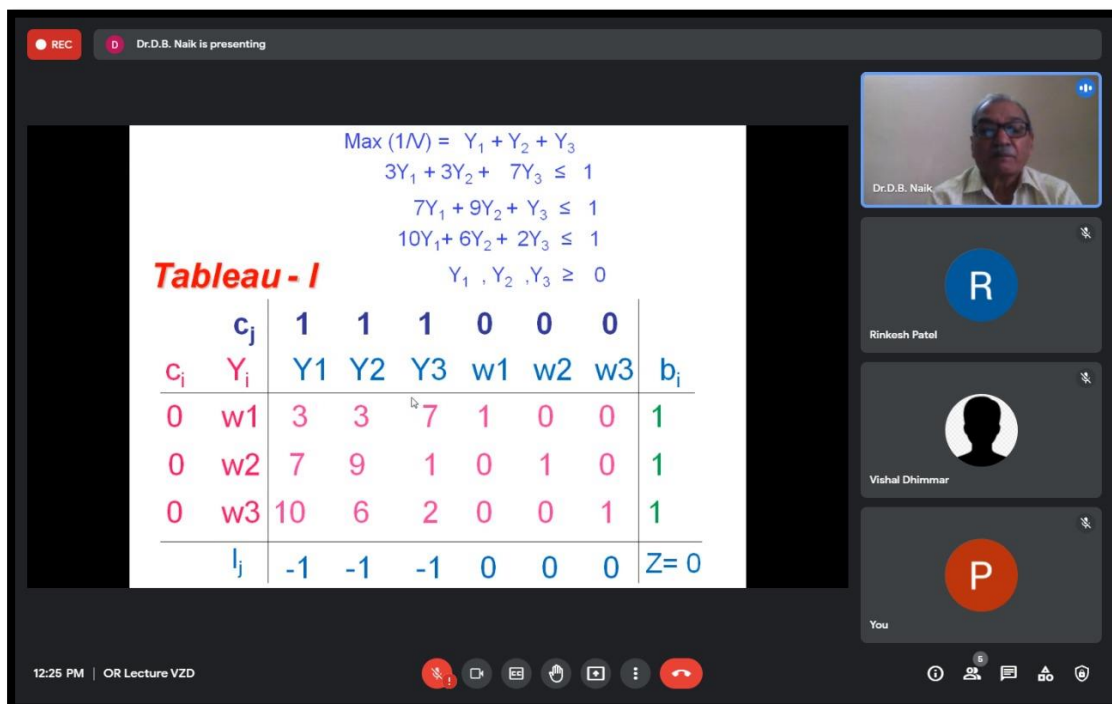
Pure Strategy Case

1	8	1
6	4	4
6	8	

$\therefore 4 \leq V \leq 6$

Mixed Strategy Case

11:17 AM | OR Lecture VZD

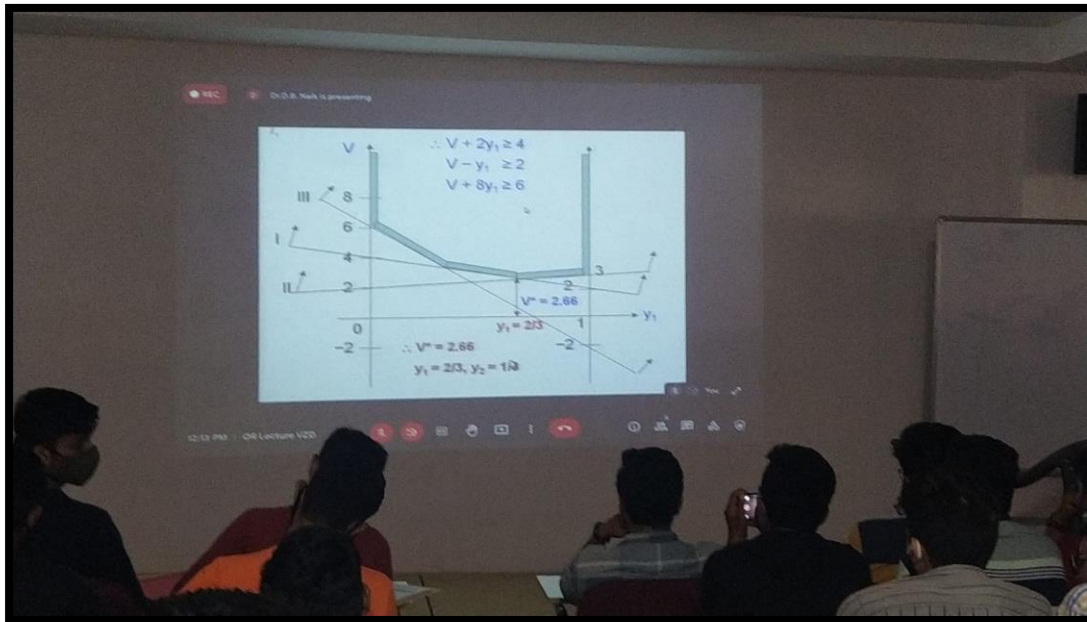


Max $(1/V) = Y_1 + Y_2 + Y_3$
 $3Y_1 + 3Y_2 + 7Y_3 \leq 1$
 $7Y_1 + 9Y_2 + Y_3 \leq 1$
 $10Y_1 + 6Y_2 + 2Y_3 \leq 1$
 $Y_1, Y_2, Y_3 \geq 0$

Tableau - I

c_j		1	1	1	0	0	0	
c_i	Y_i	Y1	Y2	Y3	w1	w2	w3	b_i
0	w1	3	3	7	1	0	0	1
0	w2	7	9	1	0	1	0	1
0	w3	10	6	2	0	0	1	1
	I_j	-1	-1	-1	0	0	0	Z=0

12:25 PM | OR Lecture VZD





CERTIFICATE OF APPRECIATION FOR Dr. D. B. Naik



S. N. Patel Institute of Technology & Research Centre, Umrakh
(A Vidyabharti Trust Institution)

Certificate of Appreciation

This certificate is awarded to

Dr. D. B. Naik

In the view of his noteworthy contribution as an eminent speaker in the Expert Lecture on

“Operation Research”

on

6th October, 2021

organized by

Mechanical Engineering,

S. N. Patel Institute of Technology & Research Centre, Umrakh.


Dr. Piyush S. Jain

Principal

SNPIT&RC, UMRAXH

MECHANICAL ENGINEERING DEPARTMENT		
LIST OF STUDENTS		
SEMESTER 5 (DIVISION -A)		
Sr. No.	Enrollment	Name
1	170490119034	JOBANPUTRA DEVARSH ATULBHAI
2	180490119016	GAMIT HIRENKUMAR SIKANDARBHAI
3	180490119030	PATEL MIHIR HARSHADKUMAR
4	180490119045	TANDEL VRUTIKKUMAR HARSHADBHAI
5	190493119032	CHAUDHARI SAVANKUMAR RAVINDRABHAI
6	190490119001	AHIR HARSH AMRUTBHAI
7	190490119002	AHIR JAYKUMAR VIJAYBHAI
8	190490119003	BHAKTA MAITRI JIGNESHBHAI
9	190490119007	CHAUDHARI DHRUV DHANSUKHBHAI
10	190490119008	CHAUDHARI KULDIPBHAI MOHANBHAI
11	190490119009	CHAUDHARI STAVANKUMAR DEVSINGBHAI
12	190490119010	CHAUDHARI UJAS DINESHBHAI
13	190490119011	CHAUDHARY CHAITANYAKUMAR DILIPBHAI
14	190490119012	CHOTAI JALPABEN JAYESHBHAI
15	190490119016	GAMIT JAIMINBHAI SUNILBHAI
16	190490119017	GAMIT JENISHKUMAR SUNILBHAI
17	190490119019	GAMIT SAHILKUMAR YOGESHBHAI
18	190490119021	JADHAV GYANESHWAR PRABHAKAR
19	190490119022	KHASIYA BHAUTIK JORUBHAI
20	190490119023	LAD YASH PANKAJBHAI
21	190490119024	MAHAJAN SUMIT BAPU
22	190490119025	MAVANI DENIS ASHOKBHAI
23	190490119026	MISAL SAGAR SAMPATBHAI
24	190490119027	MISTRY PRATHAM DINESHBHAI
25	190490119029	NIKWADE MANOJBHAI DAYARAMBHAI
26	190490119030	PARMAR MAHESH GANESH
27	190490119032	PATEL DHARMIN VINAYKUMAR
28	190490119033	PATEL GAURANG RAJESHBHAI
29	190490119034	PATEL HARDIKBHAI DIPAKBHAI
30	190490119035	PATEL HARSHADBHAI PRAMODBHAI
31	190490119037	PATEL JEEL SUKETUBHAI
32	190490119038	PATEL KARTIKBHAI SURESHBHAI
33	190490119039	PATEL KEYUR HARISHBHAI
34	190490119040	PATEL KRUNAL GOKULBHAI
35	190490119042	PATEL PRANAVKUMAR PRAKASHBHAI
36	190490119043	PATEL RUSHILKUMAR KIRANBHAI
37	190490119044	PATEL SHIVKUMAR DILIPBHAI
38	190490119045	PAVAGADHI DISHANTKUMAR SANATANBHAI
39	190490119046	SINGH ABHISHEKKUMAR ANOJKUMAR
40	190490119047	SINGH AKSHAT JANMEJAY
41	190490119049	SINGH ROSHAN SANJAY SINGH
42	190490119050	SOLANKI NILESHKUMAR BANSILAL
43	190490119051	SOLANKI UJJVAL NILESHBHAI
44	190490119052	TAILOR JAYKUMAR MOHANBHAI
45	190490119053	TANDEL DHRUVKUMAR BHAGVANDAS
46	190490119054	TANDEL KEVALKUMAR MANISHBHAI
47	190490119055	TANDEL PRIYANK YOGESHBHAI

48	190490119056	TANDEL PURVESH HASMUKH
49	190490119057	TANDEL SHIVAM HIMMATBHAI
50	190490119058	THORAT HIRENDRABHAI HARICHANDBHAI
51	190490119059	VALVI SHEKHARBHAI KANTILAL
52	190490119060	VALVI VIKASBHAI TEJPALBHAI

MECHANICAL ENGINEERING DEPARTMENT		
LIST OF STUDENTS		
SEMESTER 5 (DIVISION -B)		
Sr. No.	PEN	Name of Student
1	200490119501	DOSHI MEET MAYUR
2	200490119502	GOHIL BHARATBHAI DHANANJAY
3	200490119503	PAWAR JAY SUBHASHBHAI
4	200490119504	GANVIT JIGARBHAI NAGINBHAI
5	200490119505	DHODI BHAVARTH RAMUBHAI
6	200490119506	MAKWANA MEET VIJAYBHAI
7	200490119507	DESAI TARANG BHAVESH
8	200490119508	BHATTI RIZWANBHAI ANVARBHAI
9	200490119509	MAKWANA JAY RAJENDRABHAI
10	200490119510	NIYOLIYA DHAVALKUMAR SANJAYSINH
11	200490119511	PRASAD SURAJ RAMAYODHYA
12	200490119512	PATHAN HASNAIN SAMSUDDIN
13	200490119513	CHAUDHARI SAVANKUMAR KANTILAL
14	200490119514	CHAUDHARI SHUBHAM PANKAJBHAI
15	200490119515	MISTRY YASH MANOJBHAI
16	200490119516	PATEL MOHIT BHARATBHAI
17	200490119517	GAMIT AMITKUMAR MOHANBHAI
18	200490119518	VYAS PARTH JITENDRA
19	200490119519	MISTRY DARSHAN BHARATBHAI
20	200490119520	CHAVDA DIPENKUMAR PRAVINSINH
21	200490119521	DWIVEDI ANISH ASHOK KUMAR
22	200490119522	MAURYA PRAJEET MEHILAL
23	200490119523	BIPINBHAI PATEL PARIMALKUMAR
24	200490119524	CHAUDHARI HIRALBEN ARJUNBHAI
25	200490119525	CHAUDHARI KAUSHIKKUMAR RAJESHBHAI
26	200490119526	KHAIRNAR HRITIK SAHEBRAV
27	200490119527	DWIVEDI MANISH ASHOKBHAI
28	200490119528	GAMIT PRAKASHBHAI JAGADISHBHAI
29	200490119529	MAHAKAL BHAVINKUMAR NARESHBHAI
30	200490119530	CHAUDHARI NISHITH PRADIPSINH
31	200490119531	CHAUDHARI SNEHALBHAI SUNILBHAI
32	200490119532	PANCHAL VISHAL HARISH
33	200490119533	PATEL VASU JATINBHAI
34	200490119534	PANDEY ASHISHKUMAR JITENDRAKUMAR
35	200490119535	MAHIDA PARTH KIRANSINH
36	200490119536	MURUGAN MANJUNATHA PRABU
37	200490119537	SURYAVANSHI AVINASH RAJUBHAI
38	200490119538	PATEL HIRENKUMAR JAYANTIBHAI
39	200490119539	PARMAR GAURAV RAJESHBHAI
40	200490119540	MISTRY KARAN MANISHBHAI
41	200490119541	VASAVA DHAVALKUMAR BALVANTBHAI
42	200490119542	PARMAR SAGAR DILIPBHAI

43	200490119543	VASAVA DHARMESHKUMAR DINESHBHAI
44	200490119544	CHAUDHARY CHINTANKUMAR RAJENDRABHAI
45	200490119545	PANDYA ROHAN MAHESHBHAI
46	200490119546	PATEL HIRENBHAI RASIKBHAI
47	200490119547	MAISURIYA PARTH KUMAR DINESH BHAI
48	200490119548	KUSHWAH PRADIP VINOD PRASAD
49	200490119549	CHONKAR ADARSH HARIDATT
50	200490119550	CHAUDHARI MALAY BHARATBHAI
51	200490119551	DARVESHI AKASH JITENDRA
52	200490119552	GAMIT KEVALBHAI BABJIBHAI
53	200490119553	GAMIT PRUTHVIJEET MANGESHBHAI
54	200490119554	MAJITHIYA MIT PRATAPBHAI
55	200490119555	GAMIT SAURAVKUMAR PRAVINBHAI
56	200490119556	CHAUDHARI MIHIRKUMAR JAGADISHBHAI
57	200490119557	CHAUDHARI HIRENBHAI JITUBHAI
58	200490119558	PATEL BHAVINBHAI RAJESHBHAI
59	200490119559	GAMIT MEHULBHAI CHIMANBHAI
60	200490119560	MARATHE HEMANT DINESHBHAI
61	200490119561	CHEVLI YASH KAMLESH KUMAR
62	200490119562	VASAVA NIKUNJKUMAR JAGDISHBHAI
63	200490119563	SHAH SAMAY KAILASHBHAI
64	200490119564	PATEL TANMAYKUMAR MAHENDRABHAI
65	200490119565	PATEL HARSH CHAMPAKBHAI
66	200490119566	AGRAWAL JAYESH SHAILESHBHAI
67	200490119567	PAVAGHADHEE NISARG RAJESHBHAI
68	200490119568	GAMIT JYOTIXBHAI JAYESHBHAI
69	200490119569	PATIL SWAPNIL MOHAN
70	200490119570	BADGUJAR VAIBHAV PRAVINBHAI
71	200490119571	RATHOD DARSHANBHAI RAMESHBHAI
72	200490119572	PATEL DILIPBHAI KEYURBHAI
73	200490119573	GAMIT ANKITKUMAR BAKULBHAI
74	200490119574	MAHYAVANSHI DARSHAN KARSHANBHAI
75	200490119575	MACHHI HARSH ASHWINBHAI
76	200490119576	CHAUDHARI DIVYESHKUMAR MOHANBHAI
77	200490119577	DESAI NIRAV BABUBHAI
78	200490119578	MOHANAT VATSAL UMESHKUMAR
79	200490119579	GOHIL NIMESHKUMAR PRAVINBHAI
80	200490119580	SHARMA ASHISH RAMRATANBHAI
81	200490119581	PATEL YUVRAJ KISHORBHAI
82	200490119582	RATHOD PRITESH SANJAYBHAI
83	200490119583	VASAVA MAHESHBHAI SOMABHAI
84	200490119584	RATHOD VIJAY RAJUBHAI
85	200490119585	GAMIT NAILESHBHAI RAVISHBHAI
86	200490119586	PATIL VIPUL NARAYAN
87	200490119588	SONAWANE HITESH JAGANBHAI
88	200490119590	CHAUDHARI VIPULBHAI NASHVANBHAI
89	200490119591	DHIRAJLAL KHUNT PARTH
90	200490119592	MAHALE DEVANK MURLIDHARBHAI