Criteria 2-Teaching-Learning and Evaluation

KEY INDICATOR-2.2 - Catering to Student Diversity

2.2.1 - The institution assesses the learning levels of the students and organizes special Programmes for advanced learners and slow learners

Index
Supporting Documents

Sr.No	Document Attached	Page No.
1	Remedial Classes for MBA backlog students	2
2	Bridge Course For MCA Students	20
3	Remedial Classes for MCA backlog students	38

ShikshanMaharshi Dr. D. Y. PatilShikshanSanstha's
DR. D. Y. PATIL CENTRE FOR MANAGEMENT & RESEARCH,
NewaleVasti, Chikhali, Pune – 412114.
E-Mail: info@dypatilsanstha.com
Website: http://www.dypatilmba.com

Ref.: DYPCMR/Student Notice/ /2023-24 **Date: 27th Mar, 2024**

Notice

Dear Students, Remedial classes will be conducted for subject 302-Decision Science from 6th April, 2024 onwards at 2 pm.

Dr.Madhulika Gupta
HOD - MBA
HOD, MBA
Dr. D. Y. Patil Centre For Management and Research
Chikhali, Pune

Dr. Sunil Dhanawade
Director
Director
Dr. D. Y. Patil Centre For Management And Research
Gat No.1029/1030, A/P., Chikhali 411062

new business models for Internet Economy– E-Commerce Business Models and Strategies – Internet Strategies for Traditional Business –Virtual Value Chain. Sustainability & Strategic Management: Start ups- growth and reasons for decline. Threats to sustainability, integrating Social & environmental sustainability issues in strategic management, meaning of triple bottom line, people-planet-profits. (7+2)

Suggested Text Books:

1. Strategic Management and Business Policy by Azhar Kazmi, Tata McGraw-Hill
2. Strategic Management by Ireland, Hoskisson & Hitt, Indian Edition, Cengage Learning
3. Crafting and Executing Strategy- The Quest for Competitive Advantage by Thompson, Strickland, Gamble & Jain, Tata McGraw-Hill
4. Concepts in Strategic Management & Business Policy by Thomas L. Wheelen & J. David Hunger, Pearson

Suggested Reference Books:

1. Strategic Management by Dr. Yogeshwari L. Giri
2. Competitive Strategy: Techniques for Analyzing Industries and Competitors by Michael E. Porter, First Free Press Edition
3. Competing for the Future by Gary Hamel & C.K. Prahlad, .
4. Blue Ocean Strategy by Kim & Mauborgne

Semester III		302– Decision Science
3 Credits	LTP: 2:1:1	Compulsory Generic Core Course

Course Outcomes: On successful completion of the course the learner will be able to

CO#	COGNITIVE ABILITIES	COURSE OUTCOMES
CO302.1	REMEMBERING	DESCRIBE the concepts and models associated with Decision Science.
CO302.2	UNDERSTANDING	UNDERSTAND the different decision-making tools required to achieve optimisation in business processes.
CO302.3	UNDERSTANDING	APPLY appropriate decision-making approach and tools to be used in business environment.
CO302.4	APPLYING	ANALYSE real life situation with constraints and examine the problems using different decision-making tools
CO302.5	ANALYSING	EVALUATE the various facets of a business problem and develop problem solving ability
CO302.6	CREATING	DISCUSS & propose the various applications of decision tools in the present business scenario.

1. **Introduction:** Importance of Decision Sciences & role of quantitative techniques in decision making. **Assignment Models:** Concept, Flood's Technique/ Hungarian method, applications including restricted, multiple assignments and maximization objective. **Transportation Models:** Concept, formulation, problem types: balanced, unbalanced, restriction and maximization, Basic initial solution using North West Corner, Least Cost & VAM, Optimal solution using MODI, multiple solution case to be considered. (8+2)
2. **Linear Programming:** Concept, Formulation & Graphical Solution. Markov Chains: Applications related to management functional areas, estimation of transition probabilities. Simulation Techniques: Monte Carlo Simulation, scope, and limitations. (7+2)
3. **Probability:** Concept, Conditional Probability theorem-based decision making. Probability Distributions: Normal, Binomial, Poisson (Simple numerical for decision making expected). **Queuing Theory:** Concept, Single Server (M/M/I, Infinite, FIFO), Introduction of Multi Server (M/M/C, Infinite, FIFO) (Numerical on single server model expected) (8+2)
4. **CPM & PERT:** Concept, Drawing network, identifying critical path, Network calculations- calculating EST, LST, EFT, LFT, Slack, floats & probability of project completion in case of PERT. Network crashing: Concept of project cost and its components, time and cost relationship, crashing of CPM network. (8+2)
5. **Decision Theory:** Concept, Decision making under uncertainty Maximax, Maximin, Minimax regret, Hurwicz's & Laplace criterion, Decision making under risk (EMV, EVPI) for items with and without salvage value. Game

Theory: Concept, 2 × 2 zero sum game, Pure & Mixed Strategy, solution of games with dominance, average dominance method. Sequencing problem: Introduction, Problems involving n jobs-2 machines, n jobs- 3 machines & n jobs-m machines, Comparison of priority sequencing rules.(6+2)

Important Note:

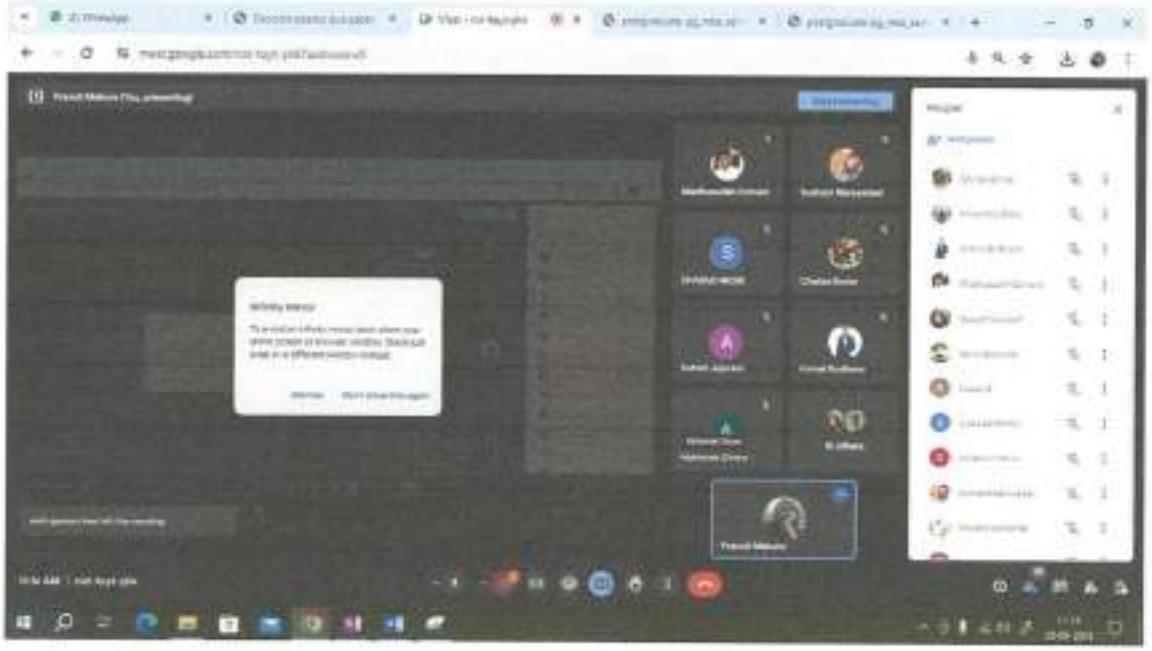
1. In each unit caselet related to management situation in various functional domains shall be discussed by the subject teacher.
2. Numerical based on functional areas of business are expected on each unit

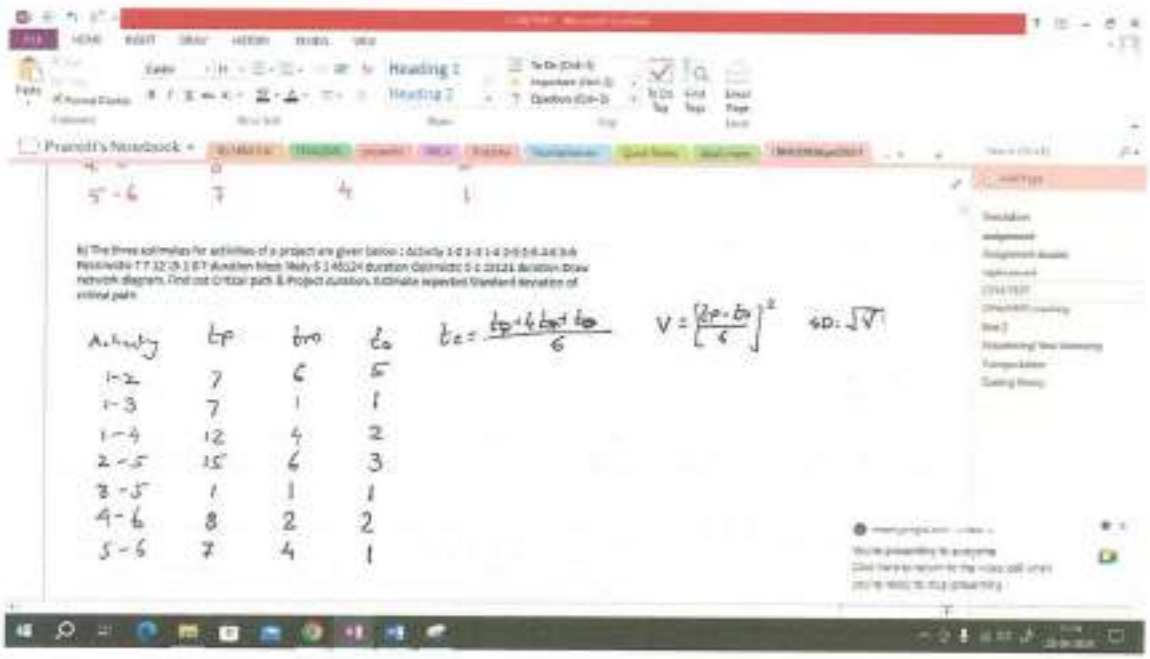
Suggested Text Books:

1. Quantitative Techniques in Management by N.D. Vohra Tata, McGraw Hill Publications (latest Edition)
2. Operations Research by Hamdy A. Taha, Pearson Publication (latest edition)
3. Operations research by Hira Gupta, S. Chand Publication (latest Edition)
4. Operations Research Theory & Applications by J K Sharma- MacMillan Publishers India Ltd. (latest Edition)
5. Statistical Methods by S.C. Gupta S. Chand Publication (latest edition)
6. Comprehensive Statistical Methods by P.N. Arora, Sumeet Arora, S. Arora S. Chand Publication

Suggested Reference Books:

1. Quantitative techniques & statistics By K L Sehgal Himalaya Publications (latest edition)
2. An introduction to management science: Quantitave approcach for decision making- Cengage Learning- Anderson (latest edition)
3. Introduction to Operations Research by Billey E. Gilett,TMGH (latest edition)
4. Operations Research by Nita Shah, Ravi Gor, Hardik Soni, PHI (latest Edition).
5. Operations Research by R. Pannerselvam, Prentice Hall India




Heading 1
Heading 2
Pranoti's NoteBook
5 - 6
7
4
1
A) The three estimates for activities of a project are given below : Activity 1-2 3-3 1-4 2-5 3-5 4-6 5-6
Pessimistic 7 7 12 5 1 ET duration Most likely 5 1 4 6 1 2 duration Optimistic 5 1 6 2 3 1 2 3 duration Draw
network diagram. Find out Critical path & Project duration. Estimate expected Standard deviation of
critical path
Activity
tp
tm
to
1-2
7
6
5
1-3
7
1
1
1-4
12
4
2
2-5
15
6
3
3-5
1
1
1
4-6
8
2
2
5-6
7
4
1
$t_e = \frac{t_p + 4t_m + t_o}{6}$
$V = \left[\frac{t_p - t_o}{6}\right]^2$
SD: $\sqrt{V}$

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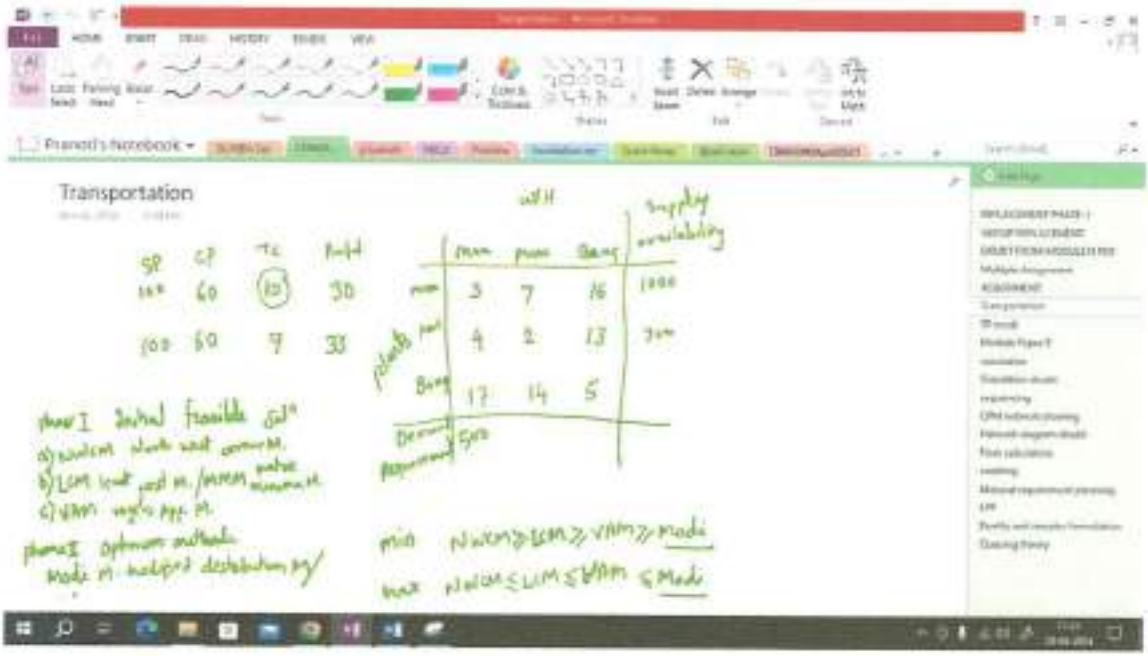

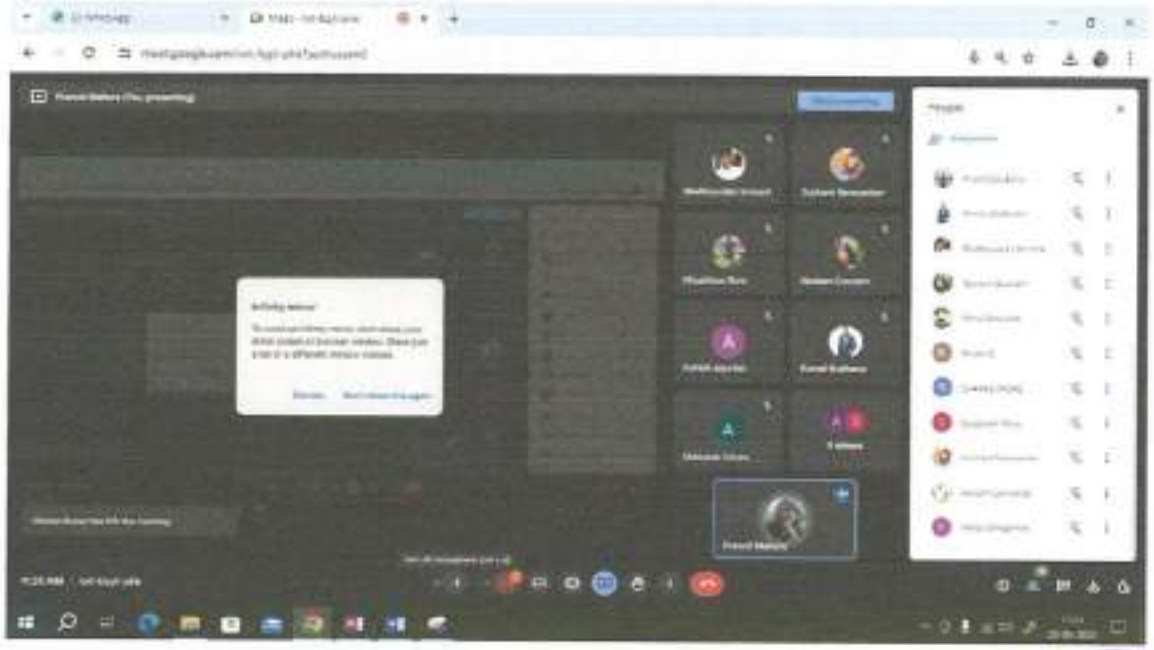

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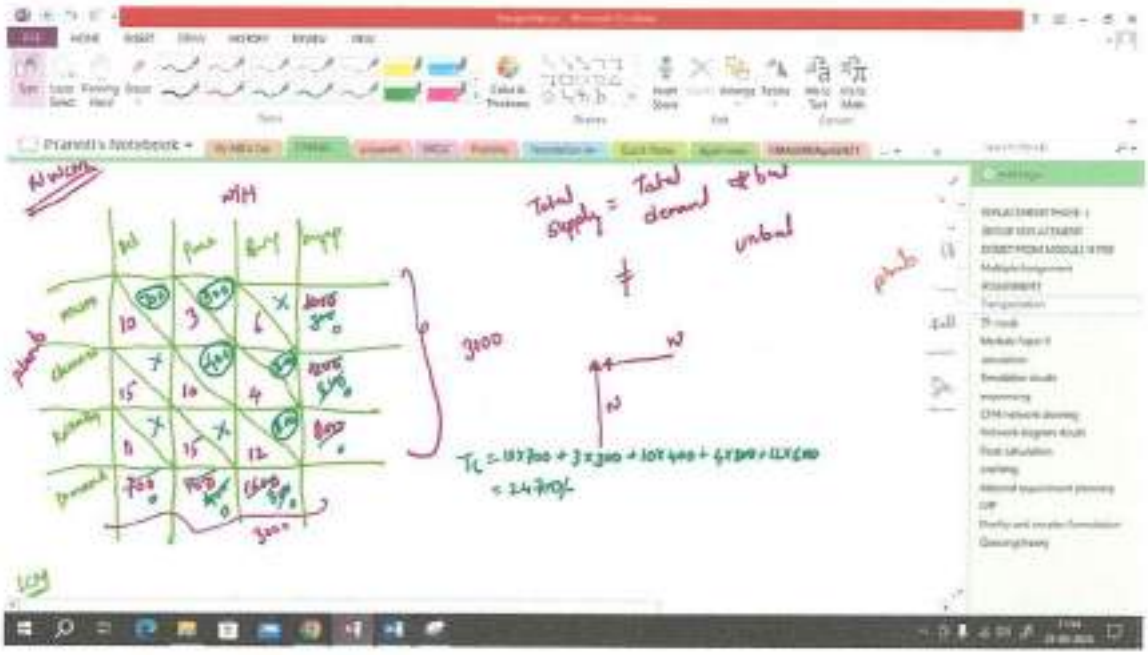

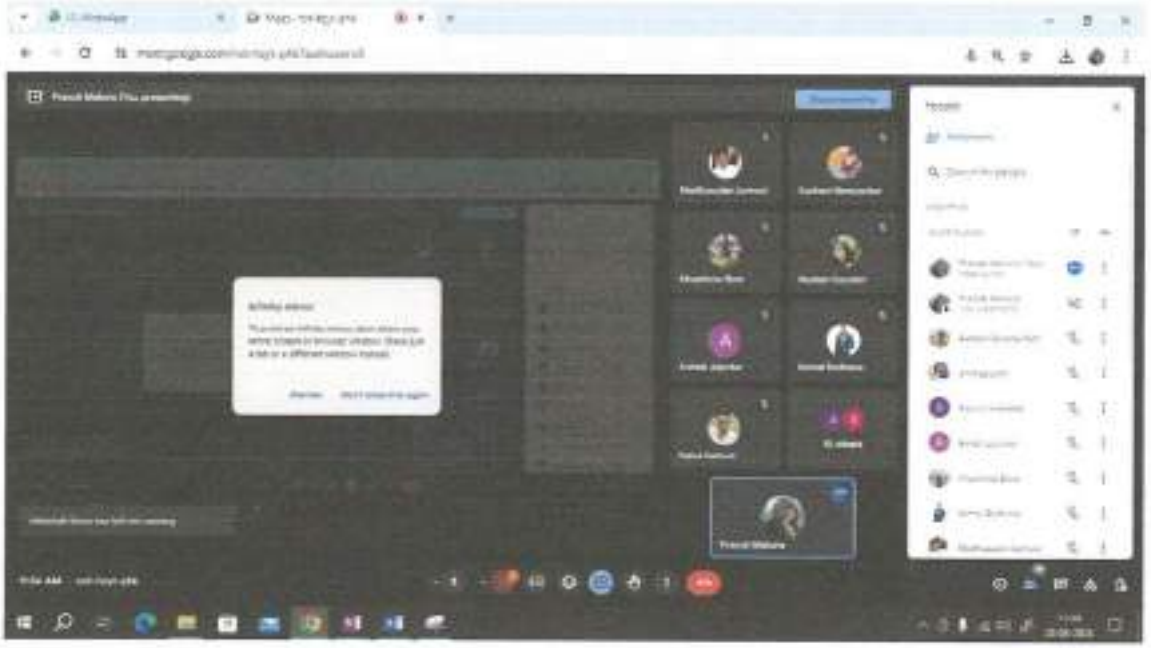

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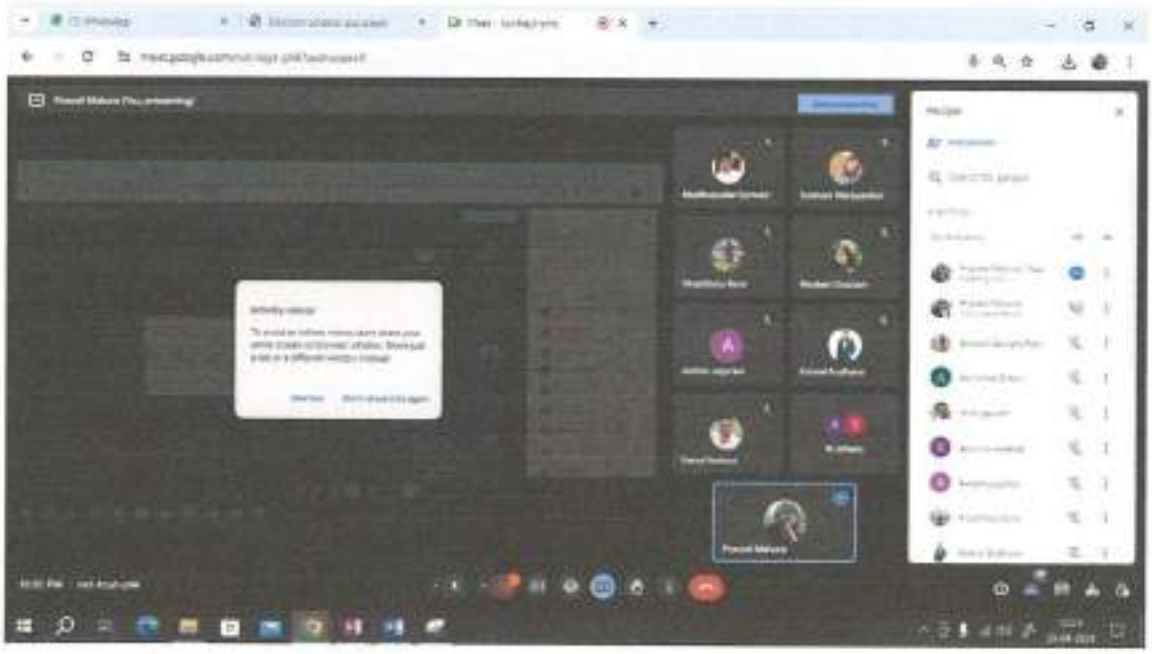

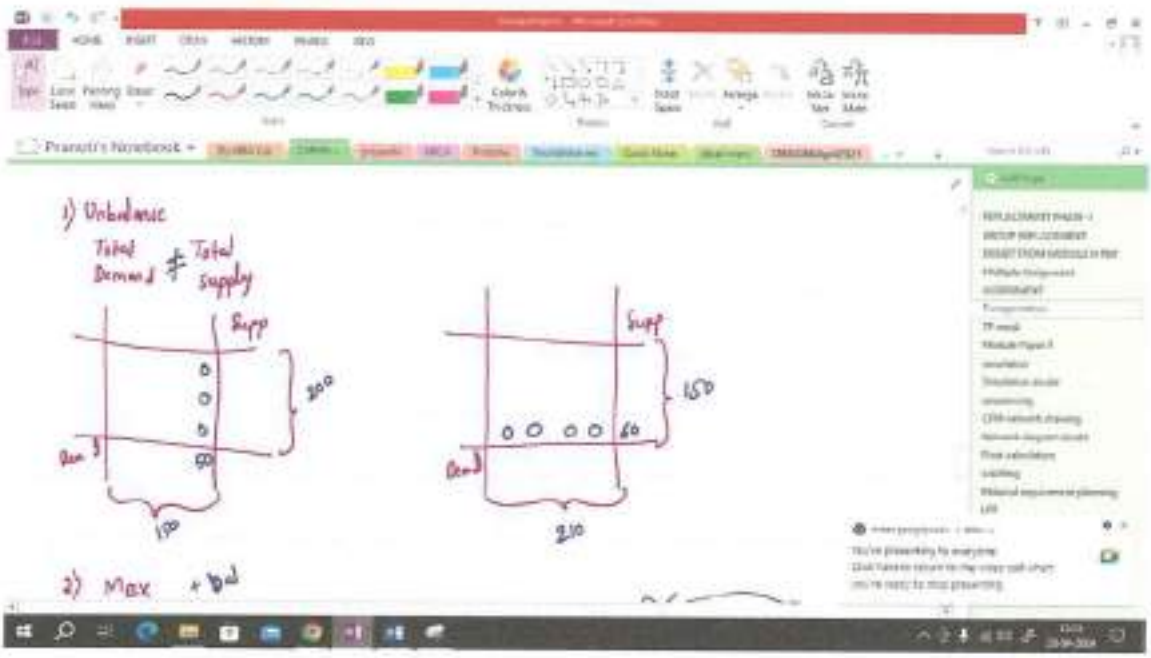
1) Unbalance
Total Demand ≠ Total Supply
Supp
Dem
300
100
90
Supp
Dem
150
210
60
2) Max

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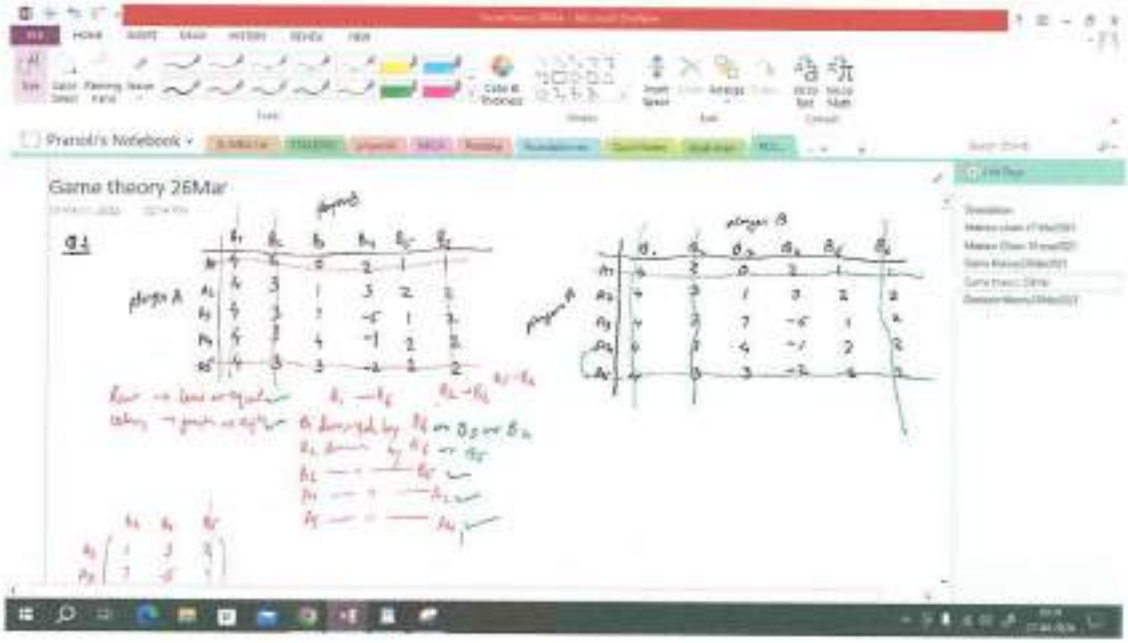
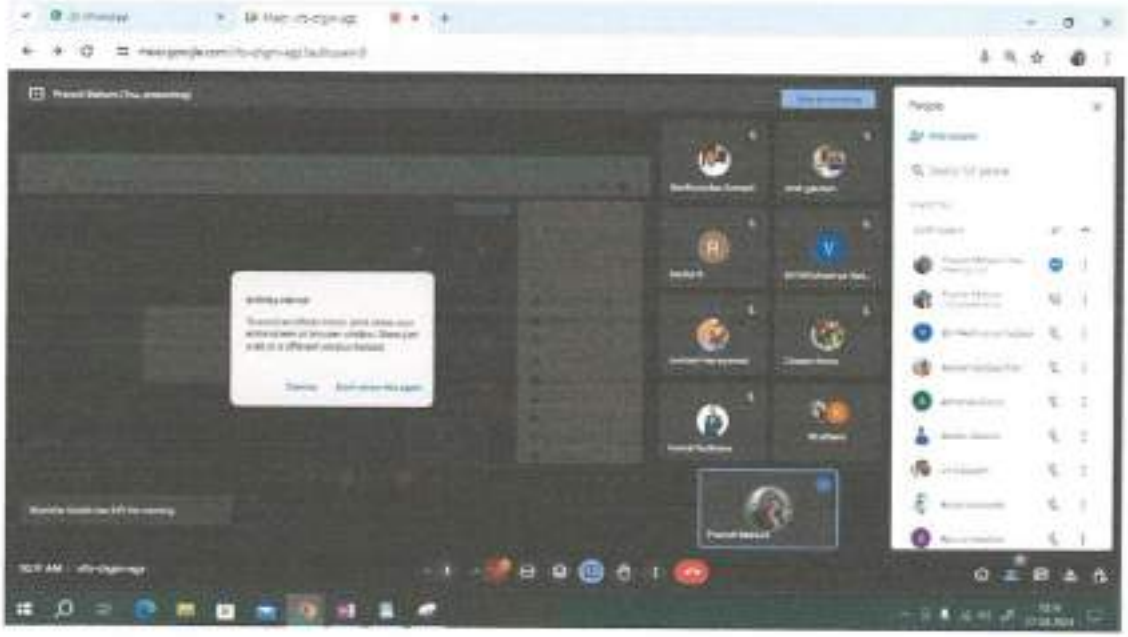

Pranoti's Notebook
Game theory 26Mar



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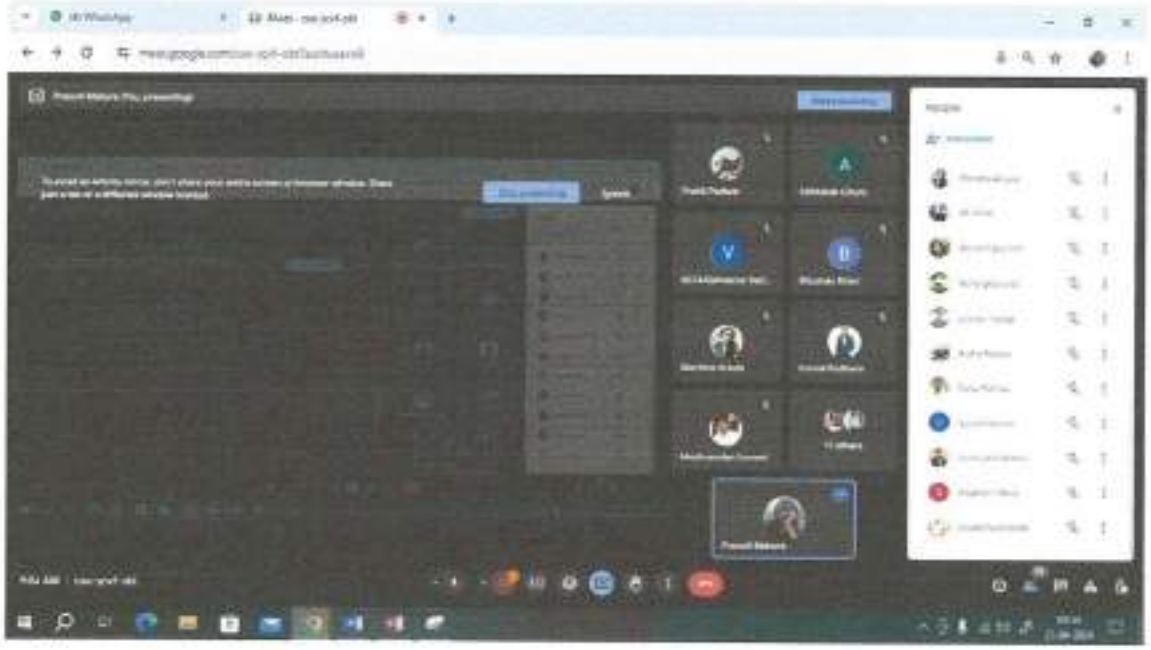

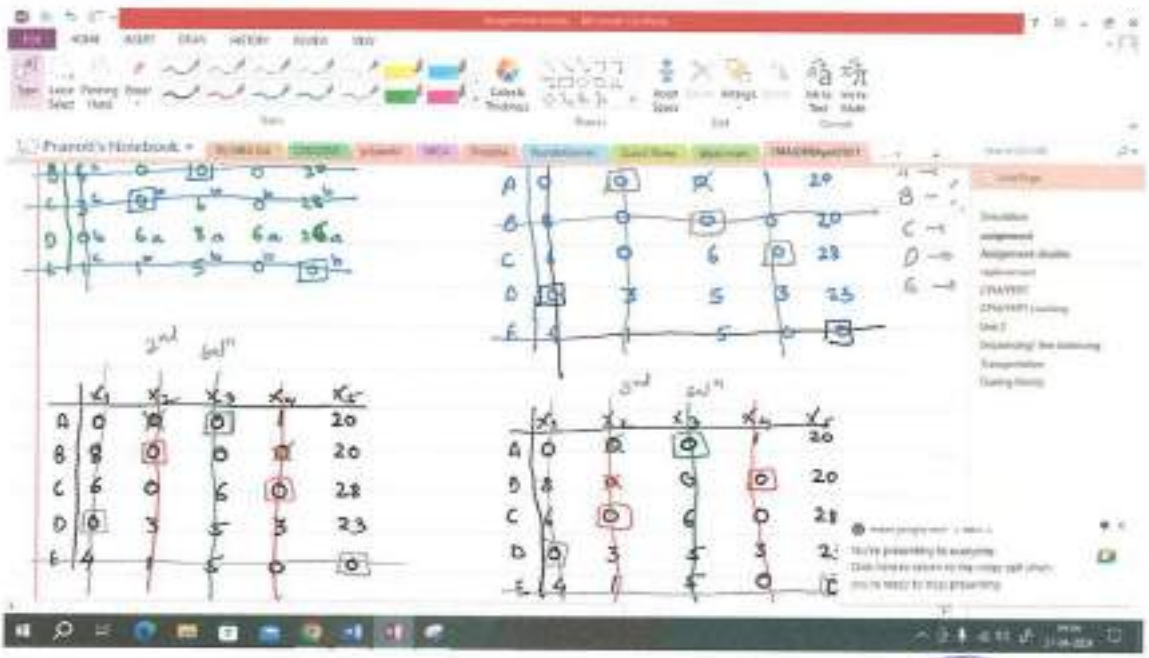

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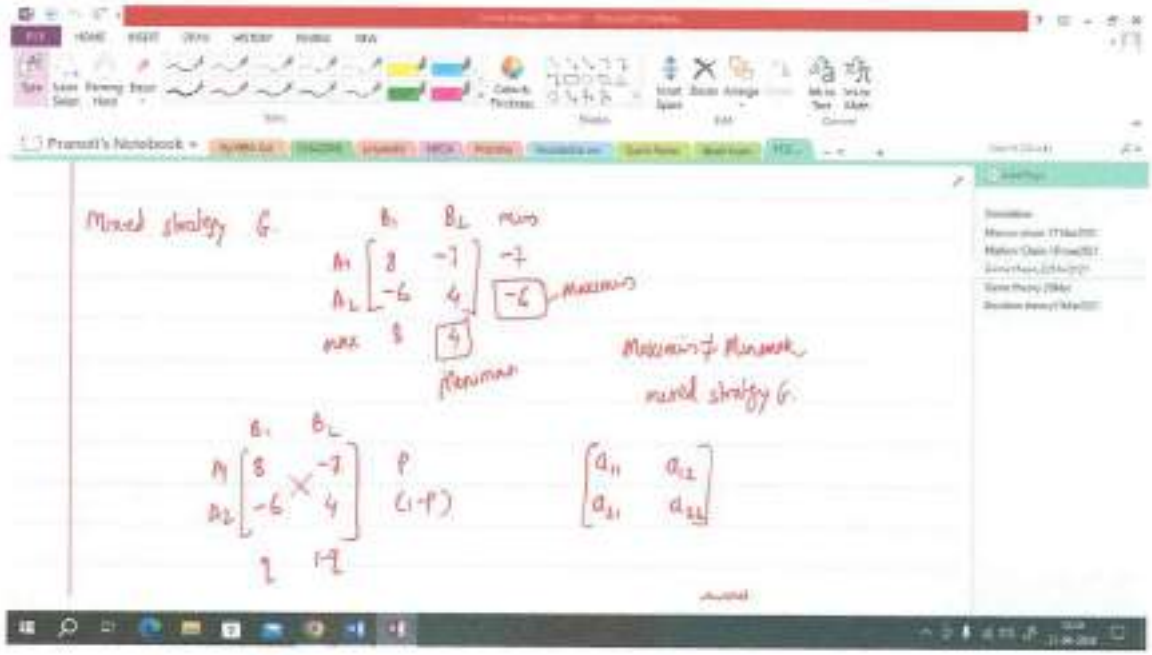

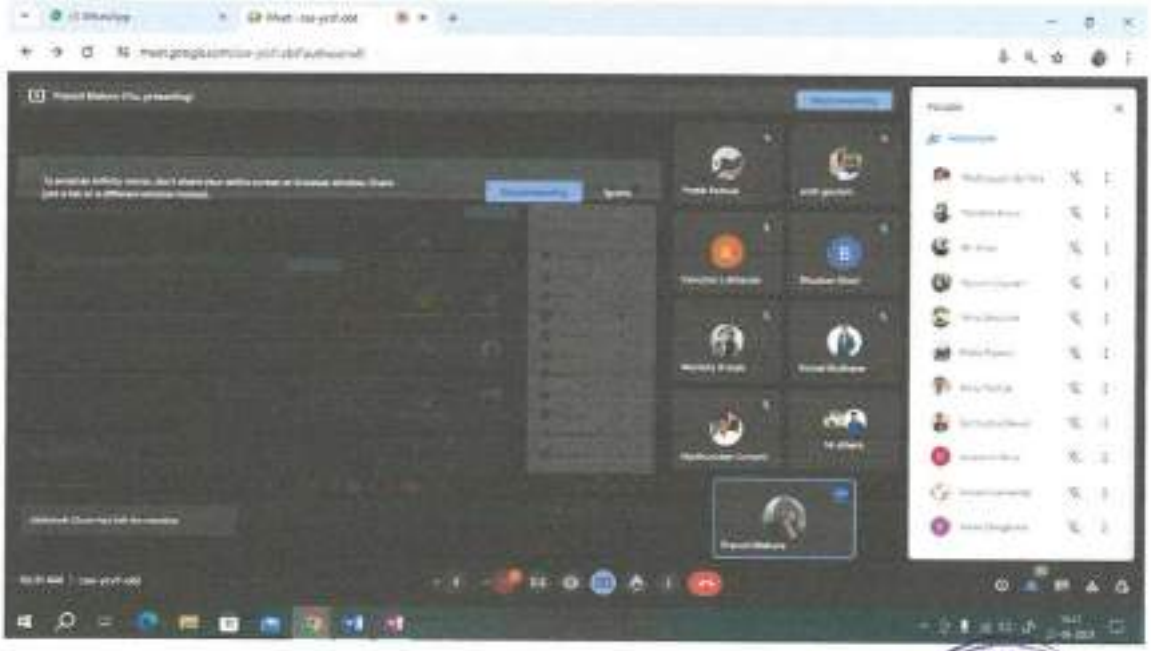

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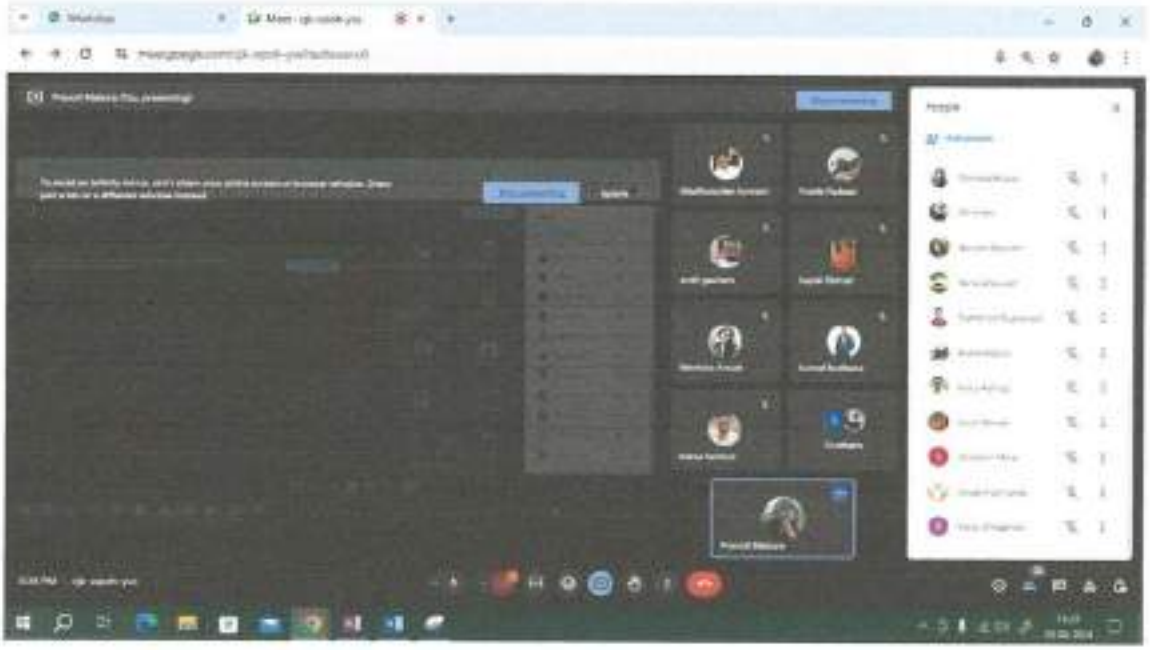
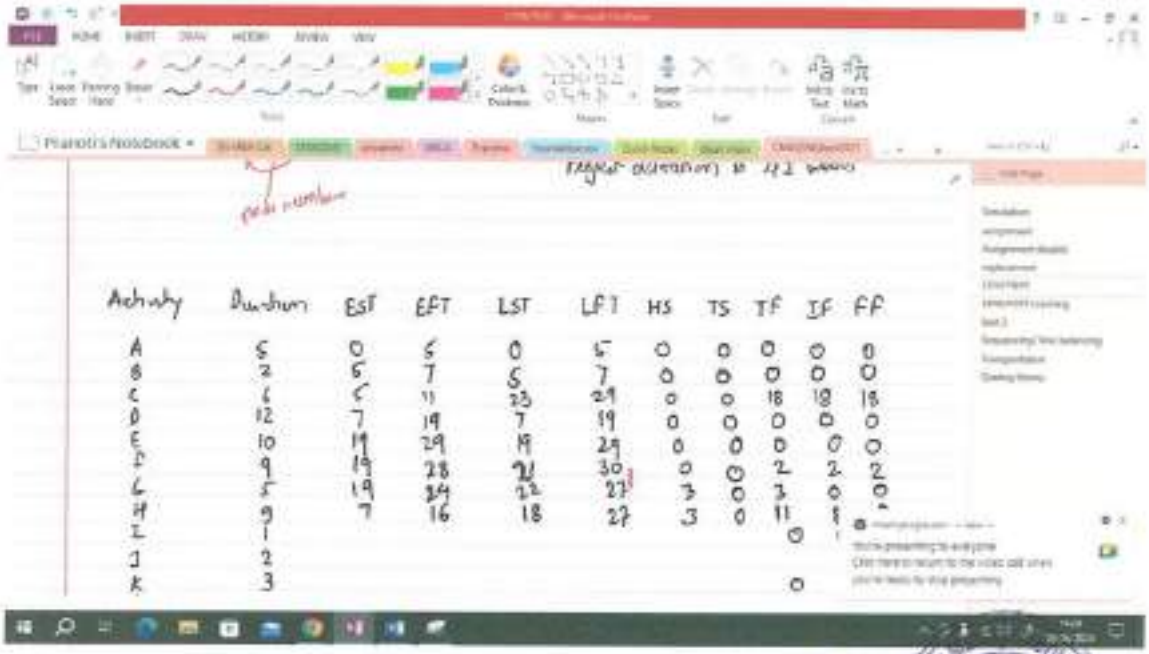
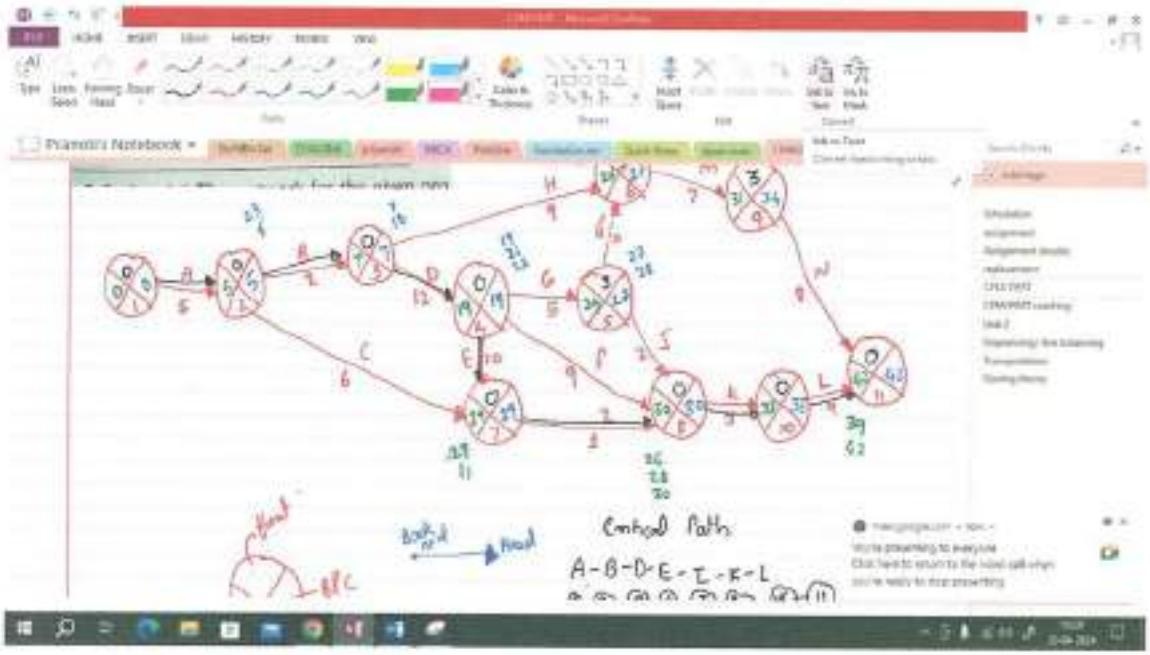
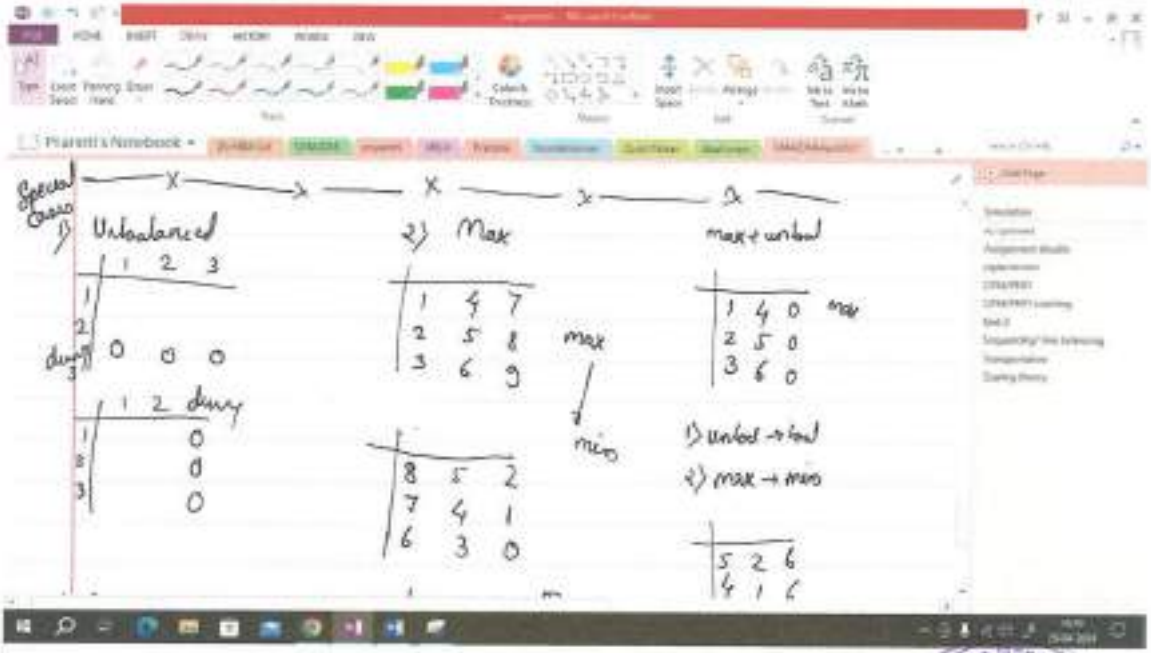




Activity	Duration	EST	EFT	LST	LFT	HS	TS	TF	IF	FF
A	5	0	5	0	5	0	0	0	0	0
B	2	5	7	5	7	0	0	0	0	0
C	6	5	11	23	29	0	0	18	18	18
D	12	7	19	7	19	0	0	0	0	0
E	10	19	29	19	29	0	0	0	0	0
F	9	19	28	21	30	2	2	2	2	2
G	5	19	24	22	27	3	3	3	3	3
H	9	7	16	18	27	3	3	11	1	1
I	1							0		
J	2									
K	3							0		


Critical Path
A-B-D-E-I-K-L


Special Case
1) Unbalanced
2) Max
max + unbal
1) unbal → bal
2) max → min

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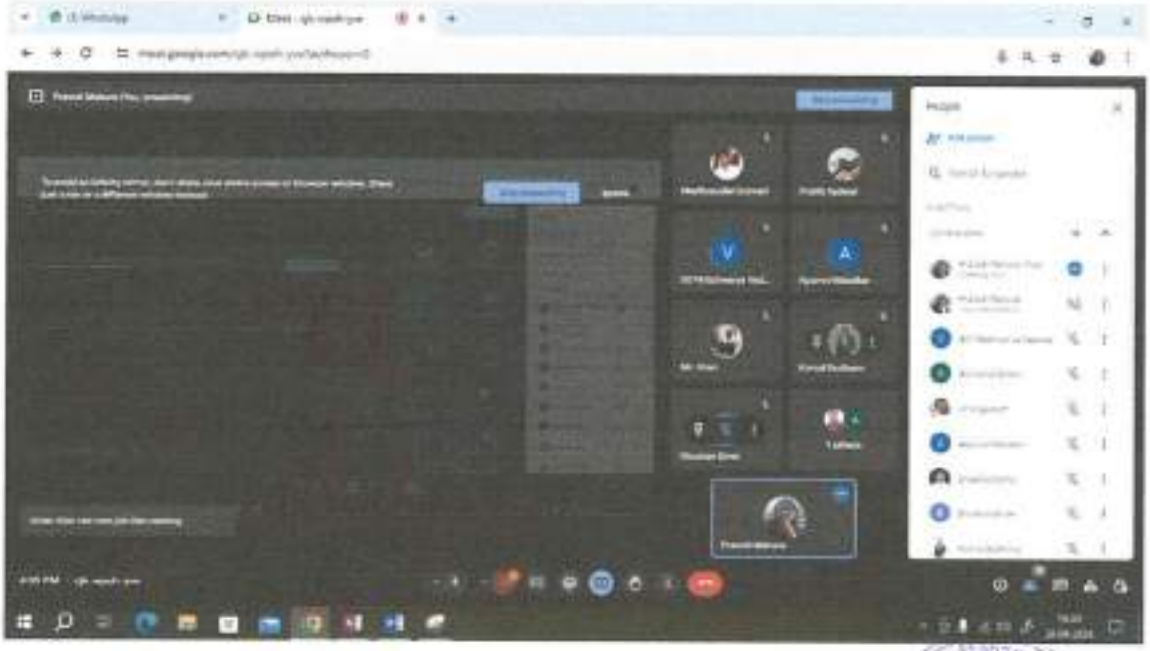

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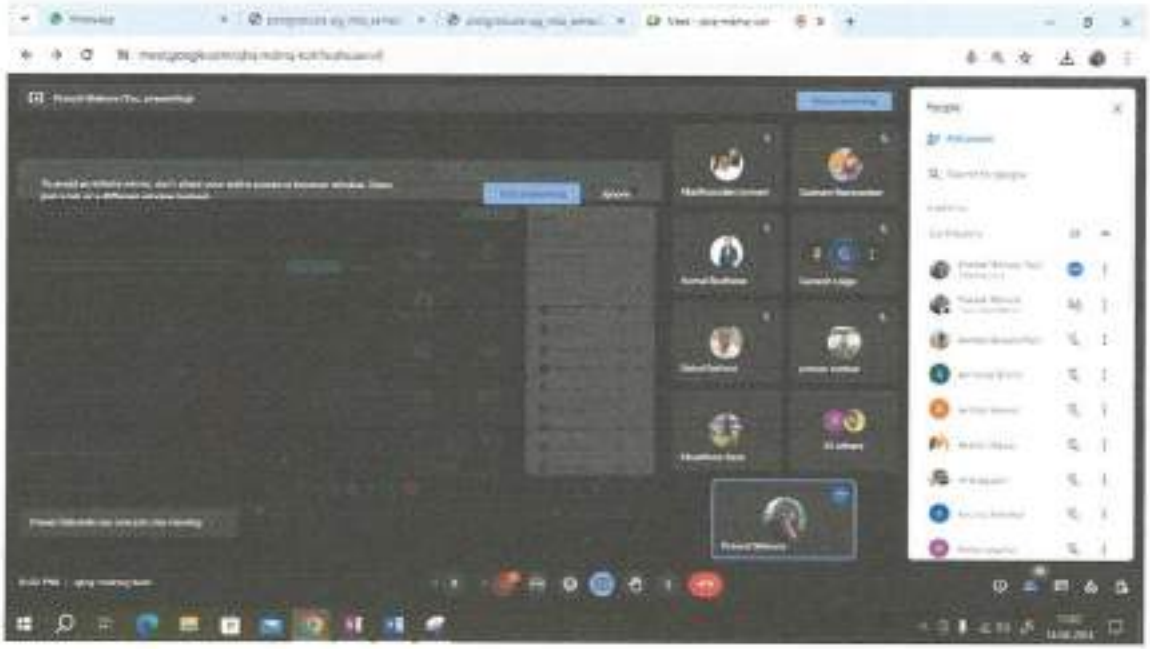

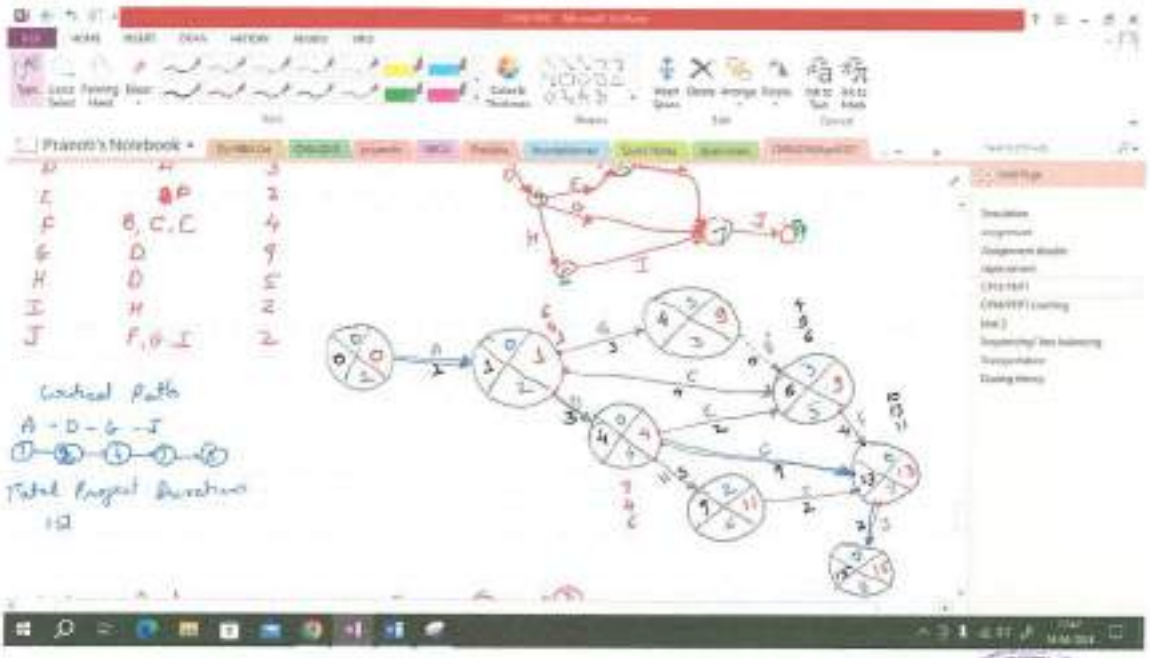

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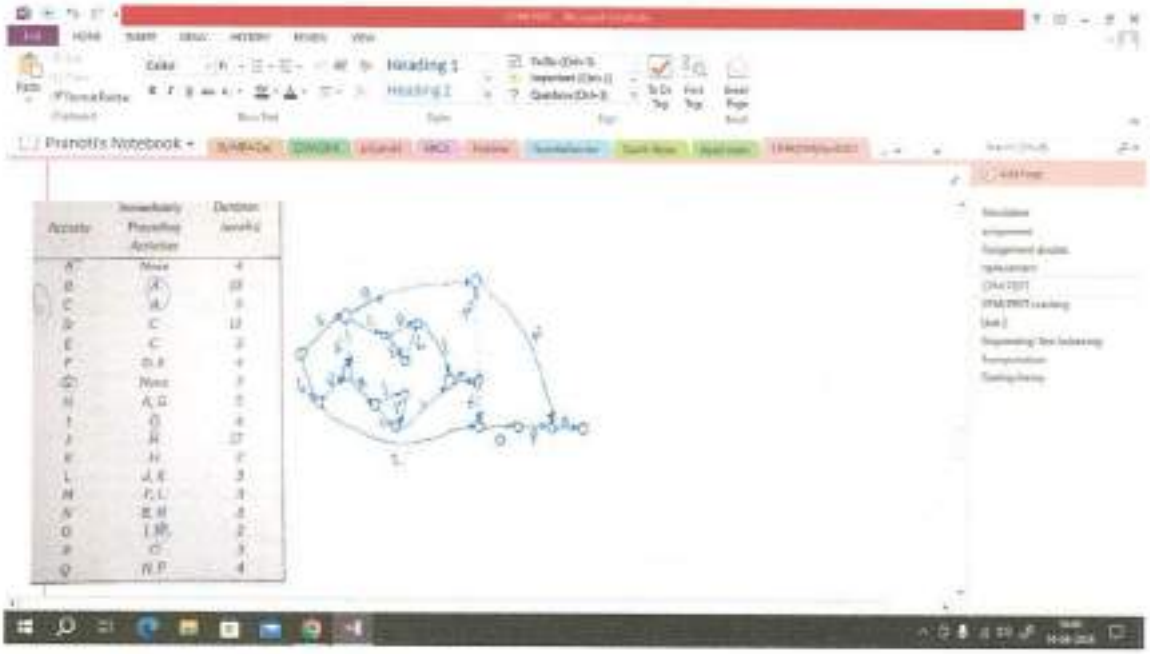
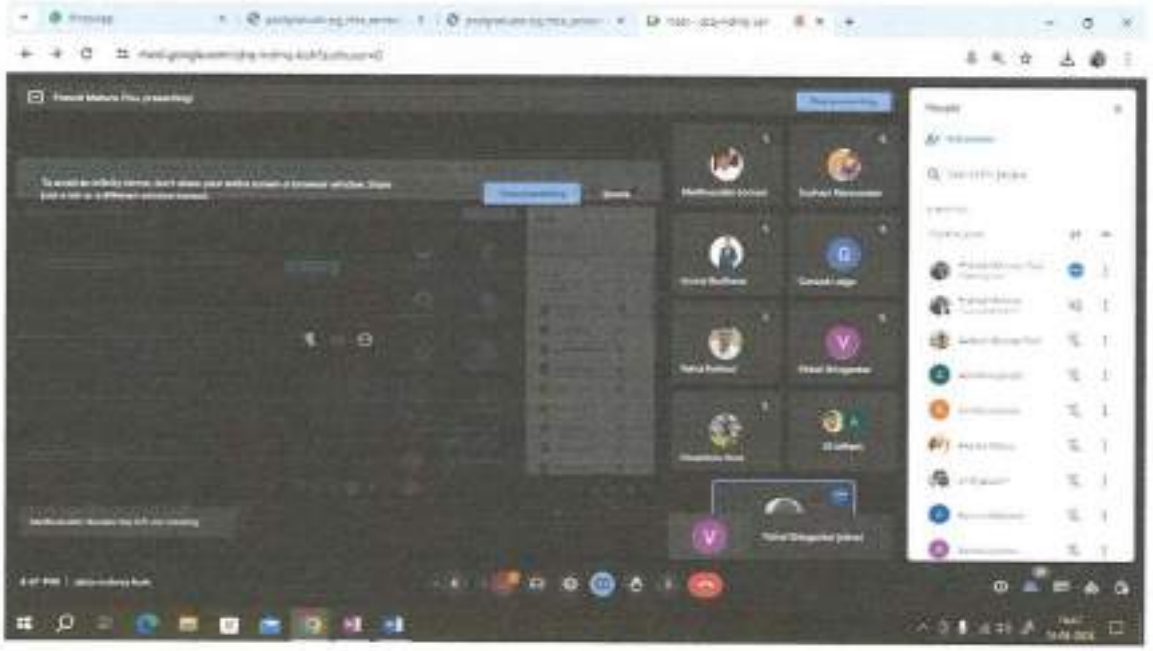

Activity
Immediately Preceding Activities
Duration (weeks)
Prasnit's Notebook



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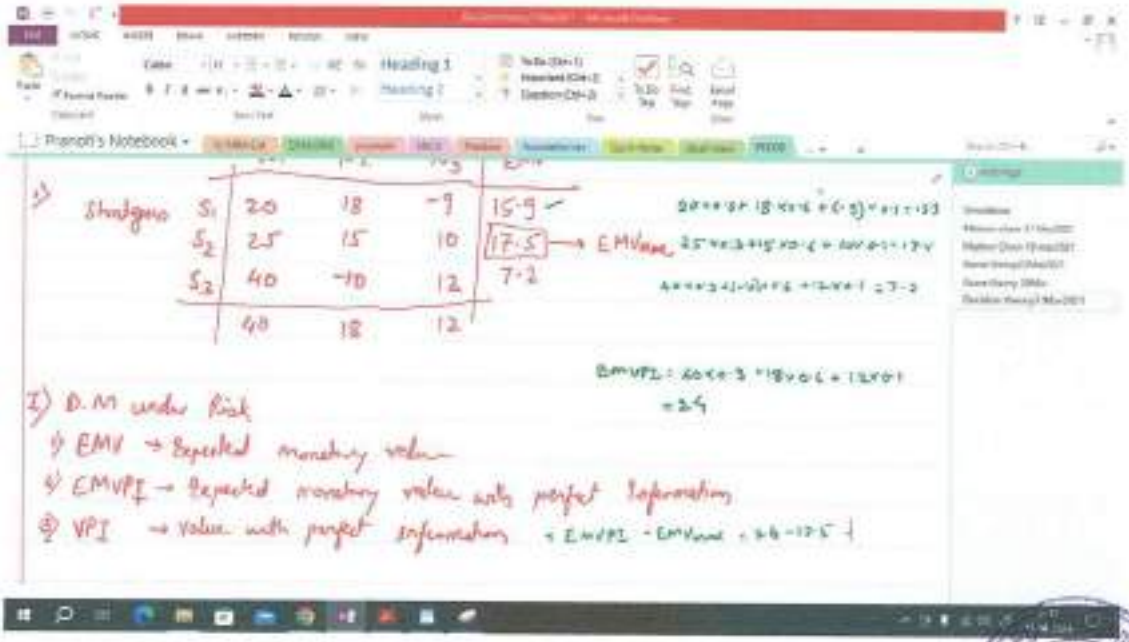
Prapti's Notebook
Strategies
S_1 20 18 -9 15.9
S_2 25 15 10 17.5 → EMV max
S_3 40 -10 12 7.2
40 18 12
I) D.M under Risk
i) EMV → Expected monetary value
ii) EMVPI → Expected monetary value with perfect information
iii) VPI → value with perfect information = EMVPI - EMV max = 24 - 17.5

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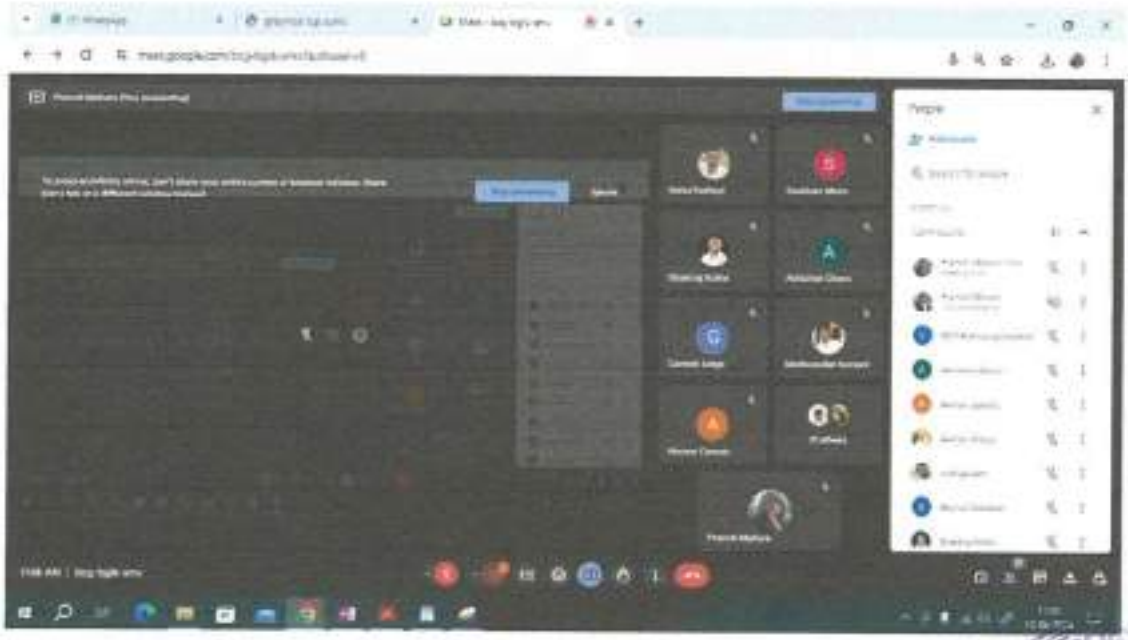

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Q4) Solve any one of the following: [1 × 18 = 18]

a) XYZ company is considering three options for managing its data processing operations: runtime with own staff, outsourcing or the use of combination. The annual profit of each option depends on demand as follows:

Staffing option	Demand		Profit (100 Rs.)
	High	Medium	Low
Own staff	650	650	600
Outsourcing	900	600	300
Combination	800	650	500

Determine Optimal strategy for

i) Maxi-min
ii) Laplace
iii) Hurwicz ($\alpha = 0.6$)
iv) Regret criterion.

b) The machine operator has to perform all two operations, turning and threading on a number of different jobs. The time required to perform these operation on these machines is given below.

Determine sequencing of jobs to minimize the total time. Also find idle

QuestionPapers.com

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Chikhali Pune-14

Shikshan Maharshi Dr. D. Y. Patil Shikshan Sanstha's
DR. D. Y. PATIL CENTRE FOR MANAGEMENT & RESEARCH,
Newale Vasti, Chikhali, Pune – 412114.
E-Mail: info@dypatilsanstha.com
Website:www.dypatilmba.com

Ref.: DYPCMR/Student Notice/ /2023-24 **Date: 26th Aug, 2023**

Notice

This is to inform all MCA Students that a "As per the Curriculum of SPPU University, we are starting the Bridge Course from 28.08.23 to 30.08.23".

Attendance is Compulsory.

Dr. Jayshri Patil
HOD - MCA

Dr. Sunil Dhanawade
Director

D. Y. Patil Centre For Management & Research Chikhali Pune-14

Savitribai Phule Pune University, Pune

Faculty of Commerce and Management

Master of Computer Application (MCA)

Bridge Course Curriculum
(2020-2022)

Preamble:

1. The name of the course shall be Bridge Course for MCA (Pattern 2020)
2. As per AICTE guidelines Bridge course is mandatory for those students who had done graduation in non-computer course (B.Sc. or B.Com. or B.A. with Mathematics at 10+2Level or at Graduation Level
3. The purpose of Bridge Course in MCA (Pattern 2020) is to bring all students on a uniform platform.
4. Bridge course fill gap of prerequisite of MCA program related to content, learning style, and professional norms.
5. After completion of bridge course students are expected to complete various certification courses. Which help to enrich their resume.

Evaluation and Assessment:

1. Evaluation will be of 100 marks.
2. The evaluation will be done at Institute Level
3. Mode of evaluation will be of Objective Type Question (MCQ, fill in the blank, True or False).
4. Institute needs to submit the marks to university with 2 months from the date of commencement of academic year.

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Course Structure

Course Code	Course Name	No. of Session (Hrs.)	Marks Weightage	Total Credit
BC101	Essentials of Networking	8	15	4
BC102	Introduction to Web Technology	8	15	
BC103	Fundamentals of Programming/ Problem Solving Techniques	8	15	
BC104	Fundamentals of Database Management System	8	15	
BC105	Fundamentals of Applied Mathematics	7	10	
BC106	Fundamentals of Operating Systems	7	10	
BC107	Recent trends in IT and Job opportunities	7	10	
BC108	Fundamentals of Information systems (various Business Processes Domains)	7	10	
	Total	**60**	**100**	

Detail syllabus of each course

Course Code: BC101
Course Name: Essentials of Networking

Course Structure:

Sr. No.	Topics Details	Weightage in %	No of Sessions (in Hrs.)
1	Basics of Data Communication and Networks Data Communication System Components(Message, Sender, Receiver, Transmission Medium, Set of rules (Protocol))	7%	1
2	Data Representation (Binary, Octal, Decimal, Hexadecimal), their conversions, Bit, Byte, ASCII, EBCDIC, Extended EBCDIC, Unicode etc. Data Flow (Simplex, Half Duplex, Full Duplex)	10%	1
3	Network Models (OSI Model, Internet Model)	25%	2
4	Categories of Network (PAN, LAN, WAN, MAN, WLAN, SAN), Network Topologies (Mesh, Bus, Star, Ring, Hybrid)	10%	1
5	Common Devices used in Computer Networks Hub, Switch, Router, Bridge, Gateway, Modem, Repeater, Access Point.	15%	1
6	Switching Techniques (Circuit Switching, Packet Switching) ,Transmission Media (Twisted pair cable, Shielding twisted pair, Coaxial Cable, Optical Fiber, Radio wave)	25 %	1
7	Criteria for Data Communication Network Performance, Consistency, Reliability, Recovery and Security	8%	1
	Total	**100%**	**8**

References

1) Computer Networks Andrew S. Tanenbaum, Pearson,5th Ed 2.
2) Data Communications and Networking Behrouz A. Frozen, TMH,4th Ed
3)Computer Networks and Internets with Internet Applications Douglas Comer

MOOC/Online Course

1) https://www.udacity.com/course/computer-networking--ud436
2) https://www.coursera.org/learn/fundamentals-network-communications
3) https://www.futurelearn.com/courses/effective-networking

Course Code: BC102
Course Name: Introduction to Web Technology

Course Structure:

Sr. No.	Topics Details	Weightage in %	No of Sessions (in Hrs.)
1	**Introduction** 1.1 Concept of WWW 1.2 Internet and WWW 1.3 Web Application- Client side and Server Side 1.4 SSL	20%	2
2	**Web Design** 2.1 Concepts of effective web design 2.2 Web design issues including Browser 2.3 Bandwidth and Cache 2.4 Responsive Website 2.5 User Interface/User Experience 2.6 Page Layout and linking 2.7 User centric design 2.8 Sitemap 2.9 Planning and publishing website 2.10 Designing effective navigation	20%	2
3	**HTML** 3.1. Introduction to HTML, WWW, W3C, Common HTML 3.2. Tags and attributes, Ordered & Unordered Lists 3.3. Inserting image 3.4. Client server image mapping 3.5. Text and image links	30%	2

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	3.6. Tables 3.7. Frames 3.8. Forms 3.9. Introduction to text box, text area, buttons, List box, radio, checkbox etc. 3.10 Introduction to JSON		
4	**CSS** 4.1 Introduction to Style Sheet 4.2 Types of style Sheets 4.3 Inline, External, Embedded CSS. 4.4 CSS Border, margin, Positioning, color, text, link, background, list, table, padding, image, display properties 4.5 Use of Id & classes in CSS 4.6 use of & 4.7 Introduction of CSS3: Gradients, Transitions, Animations, multiple columns	30%	2
	Total	**100%**	**8**

Reference Books:

1. HTML Black Book, Steven Holzner
2. The Complete Reference HTML & CSS, 5th Edition, Thomas A. Powell

Web References:

1. https://www.w3schools.com/

MOOC/Online Courses:

1. https://www.coursera.org/specializations/web-design
2. https://www.edx.org/course/css-basics
3. https://www.edx.org/course/html5-and-css-fundamentals

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Dr. D. Y. Patil Centre For Management & Research * Chikhali Pune-14

Course Code: BC103
Course Name: Fundamentals of Programming/ Problem Solving Techniques

Course Structure:

Sr. No.	Topics Details	Weightage in %	No of Sessions (in Hrs.)
1	**Computer Evolution** 1.1 Mainframe, SuperMini/Mini, PC (PC-XT, AT, 286, 386,486, Pentium, Core...) 1.2 Mobile Computers (Tablet computer, Smartphone, Palmtop PC, Handheld PC) 1.3 Wearable Computer (Smartwatch, Smartglasses) 1.4 Industry 1.0, 2.0, 3.0, 4.0 (Industrial Internet of Things) 1.5 Cloud Computing / Services 1.6 Mainframe based Applications / Dumb Terminal clients 1.7 Thick Client Server, Web based, Mobile App	15%	1
2	**Number System** 2.1 Introduction to binary, octal, decimal and hexadecimal number system 2.2 Introduction to Unicode standards	15%	1
3	**OFFICE AUTOMATION TOOLS** 3.1 Microsoft Word 3.2 Microsoft Excel 3.3 Microsoft Power point	15%	1
4	**Basic Program Design and Abstractions, Programming Environment** 4.1 Program structure- Temporary storage (variable/constant/homogeneous/heterogeneous/enumerated) 4.2 Data Types- Primitive, Non-primitive (only introduction) 4.3 Simple I/O	15%	1

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	4.4 Compiler and Run-Time Errors 4.5 Algorithms, Big-O notation and complexity 4.6 Types of programming languages		
5	**Control Structures (Flowchart and Algorithms)** 5.1 Conditional Statements 5.2 Iterative Statements	10%	1
6	**Program Decomposition and Functions (Flowchart and Algorithms)** 6.1 Subroutine Procedure 6.2 Functions 6.3 Recursion	10%	1
7	**Arrays, Pointers and Strings (Flowchart and Algorithms)** 7.1 1-D, 2-D Arrays 7.2 Dynamic Memory Allocation 7.3 Strings	10%	1
8	**File System** 8.1 Why File 8.2 Types of file 8.3 File Operations	10%	1
	Total	**100%**	**8**

Reference Books:

1. Fundamentals of Computers, E Balgurusamy
2. Programming Languages: Principles and Paradigms (Undergraduate Topics in Computer Science) 2010th Edition by Maurizio Gabbrielli (Author), Simone Martini (Author)
3. The Self-Taught Programmer: The Definitive Guide to Programming Professionally (ISBN-13: 978-0999685907 / ISBN-10: 0999685902)
   by Cory Althoff
4. Beginning Programming All-in-One Desk Reference For Dummies 1st Edition by Wallace Wang (Author)
5. Robert W. Sebesta, "Concepts of Programming Languages", Tenth Edition, Addison Wesley, 2012
6. Programming Languages, Principles & Paradigms, 2ed, Allen B Tucker, Robert E Noonan, TMH
7. R. Kent Dybvig, "The Scheme progring language", Fourth Edition, MIT Press, 2009

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Chikhali Pune-14

Course Code: BC104
Course Name: Fundamentals of Database Management System

Course Structure:

Sr. No.	Topics Details	Weightage in %	No of Sessions (in Hrs.)
1	**1 Basic concepts** 1.1 Introduction- why database? 1.2 Database Types (brief introduction) RDBMS, OODBMS, Distributed Database, Big Data, Cloud Database 1.3 DBA, DBA role, significance of DBA in the organization, 1.4 Introduction to various database Oracle, Sybase, MySQL, SQL, NoSQL	40%	3
2	**2 Database design** 2.1 Introduction to functional dependency 2.2. Concept of Atomic domain and Normalization 2.2 Different types of keys, Integrity Constraints 2.3 Database Languages - DDL, DML	40%	3
3	**Database Security** 3.1 Introduction of Database security 3.2 access control based on grant & revoking privilege	20%	2
	Total	**100%**	**8**

Reference Books:

1. Data base Management Systems, Raghurama Krishnan, Johannes Gehrke, McGrawHill Education, 3rd Edition, 2003.
2. Data base System Concepts, A.Silberschatz, H.F. Korth, S.Sudarshan, McGraw Hill, VI edition, 2006.
3. Introduction to database systems C.J.Date, Pearson.
4. Principles of Database Management James Martin, PHI

MOOC/Online Courses:

1) https://nptel.ac.in/courses/106/105/106105175/
2) https://www.coursera.org/courses?query=database%20management
3) https://www.edx.org/learn/databases

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Course Code: BC105
Course Name: Fundamentals of Applied Mathematics

Course Structure:

Sr. No.	Topics Details	Weightage in %	No of Sessions (in Hrs.)
1	**Relation and Function** 1.1 Equivalence Relation 1.2 Bijection	10%	1
2	**Basic of Correlation** 2.1 Definition of Correlation, 2.2 Karl Pearson correlation coefficient 2.3 Rank correlation coefficient	15%	1
3	**Linear Regression** 3.1 Definition of linear regression, 3.2 Two regression equations 3.3 regression coefficient and its significance	15%	1
4	**Concept of Probability** 4.1 Concept of probability, 4.2 Sample space and its type, 4.3 Occurrence of an event	15%	1
5	**Conditional Probability, Bays Theorem** 5.1 Definition of conditional probability, 5.2 Bayes theorem and its applications	15%	1
6	**Hypothesis Testing** 6.1 Test of Hypothesis Concept, 6.2 t and chi square test, 6.3 z test introduction.	15%	1
7	**Normal Distribution** 7.1 Definition of Normal distribution 7.2 its applications in real life	15%	1
	Total	**100%**	**7**

Reference Books:

1. Fundamentals of Mathematical Statistics by S. C. Gupta and V. K. Kapoor
2. Probability and Combinatorics : D. P. Apte
3. Statistical Methods by P. N. Arora , Sumeet Arora and S. Arora
4. Probability & Random Process by T. Veerarajan
5. Statistical Methods by S. P. Gupta

MOOC/Online Courses:

1. https://www.edx.org/learn/probability
2. https://oli.cmu.edu/courses/probability-statistics-open-free/
3 https://online-learning.harvard.edu/course/introduction-probability-edx?delta=1

Course Code: BC106
Course Name: Fundamentals of Operating Systems

Course Structure:

Sr. No.	Topics Details	Weightage in %	No of Sessions (in Hrs.)
1	**Basic concepts** 1.1 Introduction 1.1.1 What is Software? 1.1.2 What is Operating System 1.2 Booting 1.2.1 Introduction 1.2.2 Boot Devices 1.2.3 Boot Sequence 1.3 Resource 1.3.1 Types of Resources – Input/output Devices, Memory, File Storage Space, CPU 1.3.2 Operating System as a Resource Manager	35%	3
2	**2 Operating System-Installation** 2.1 Basic Installation steps 2.2 Maintenance 2.3 Windows Control Panel	35%	2
3	**Operating System- Types** 3.1 Types of Operating System (Up to Embedded OS) 3.2 Introduction to Linux File System (Basic) 3.3 Introduction to DOS 3.1.1 Basic DOS Commands	30%	2
	Total	**100%**	**7**

Reference Books:

1. D.M Dhamdhere: Operating systems - A concept-based Approach, 3rd Edition, Tata McGraw- Hill, 2012.
2. "Operating System Concepts" by Avi Silberschatz and Peter Galvin

MOOC/Online Courses:

1. https://nptel.ac.in/courses/106/106/106106144/
2. https://nptel.ac.in/courses/106/105/106105214/

Course Code: BC107

Course Name: Recent Trends in IT and Job Opportunities

Note: **Appropriate syllabus need to be designed at Institute level by considering the trends in the respective year.**

Course Code: BC108
Course Name: Fundamentals of Information Systems

Course Structure:

Sr. No.	Topics Details	Weightage in %	No of Sessions (in Hrs.)
1	**Basic concepts** 1.1 Introduction- Information System 1.2 Management Information System (MIS) 1.3 Decision Support System (DSS) 1.4 Enterprise Resource Planning (ERP)	30%	2
2	**Systems Applications and Products in Data Processing (SAP)** 2.1 Introduction to SAP 2.2. Modules of SAP	35%	2
3	**Business Process Domains (BPD)** 3.1 Introduction to BPD 3.2 Supply Chain Management (SCM) 3.3 Customer Relation Management (CRM) 3.4 E-Commerce	35%	3
	Total	**100%**	**7**

Reference Books:

1. Information Systems for Modern Management - Robert Murdick, Joel e. Ross, PHI
2. Decision Support & Intelligent System - Efraim Turban, Pearson, 8th Ed.
3. Management Information System - Waman S. Jawadekar, TMH,4th Ed.
4. The SAP Material Master - a Practical Guide by Matthew Johnson
5. Using SAP: An Introduction to Learning SAP for Beginners and Business Users (3rd Edition) (SAP PRESS... by Olaf Schulz)
6. Supply Chain Management - Strategy, Planning & Operation by Sunil Chopra, Peter Meindl, D. V. Kalra, Pearson Education.
7. E-Commerce concept-model-strategies, C.S.V. Murthy, Himayalaya Publication House S
8. Customer Relationship Management by Kristin Anderson and Carol Kerr, TMGH

MOOC/Online Courses:

1) https://www.udemy.com/course/sap-simplified-for-absolute-beginners/
2) https://www.coursera.org/specializations/information-systems
3) https://www.coursera.org/specializations/supply-chain-management?
4) https://www.coursera.org/learn/digital-business-models

Timestamp	Your Full Name	Code	
Attendance (28.08.23) Bridge Course			
8/28/2023 11:23:28	Ghorpade Arya Amol	L1OS	
8/28/2023 11:23:29	Shahnawaz qamarali maniyar	L1OS	
8/28/2023 11:23:29	Vaishnav Rajaram Patil	L1OS	
8/28/2023 11:23:30	Chaitanya sanjay chavan	L1OS	
8/28/2023 11:23:31	Amit Pardeshi	L1OS	
8/28/2023 11:23:31	Mayuri Sanjay Thete	L1OS	
8/28/2023 11:23:31	Sayali Badar	L1OS	
8/28/2023 11:23:32	Pranav Narayan Joshi	L1OS	
8/28/2023 11:23:32	Rohini Sanjay Patil	L1OS	
8/28/2023 11:23:32	KundanbThorat	L1OS	
8/28/2023 11:23:33	Patil Sanika Shahaji	L1OS	
8/28/2023 11:23:34	Jadhav Karan Sanjay	L1OS	
8/28/2023 11:23:37	Pratik Narkhede	L1OS	
8/28/2023 11:23:38	Rakesh Ramlal Rathod	L1OS	
8/28/2023 11:23:38	Om shinde	L1OS	
8/28/2023 11:23:40	Aishwarya Santosh Dhormare	L1OS	
8/28/2023 11:23:41	Abhishek Ramnath Dahitule	L1OS	
8/28/2023 11:23:42	Mayuri Maruti Dhawale	L1OS	
8/28/2023 11:23:44	Swati sagar	L1OS	
8/28/2023 11:23:48	Omkar dhanaji jadhav	L1 OS	
8/28/2023 11:23:48	Rohit Bajarang Ingle	L1OS	
8/28/2023 11:23:57	Prathmesh Vrushiket Choudhari	L1OS	
8/28/2023 11:24:01	Dinesh Sunil Jawale	L1OS	
8/28/2023 11:24:02	Ankush Sunil Shinde	L1OS	
8/28/2023 11:24:15	prathamesh akkatangerhal	L1OS	
8/28/2023 11:26:05	Preetij Bhande		7879
8/28/2023 11:34:11	Ayub	L1OS	
8/28/2023 11:37:43	Aftab Shaikh	L1OS	
8/28/2023 12:14:36	Chaitanya sanjay chavan		7080

Timestamp	Your Full Name	Code
Attendance 04 (29.08.23)	Bridge Course (Responses)	
8/29/2023 11:47:26	Jadhav Karan Sanjay	001
8/29/2023 11:47:29	Aditi Sarjerao Patil	001
8/29/2023 11:47:30	Gayatri Vijay Patil	001
8/29/2023 11:47:30	Amit Pardeshi	001
8/29/2023 11:47:30	Rakesh Ramlal Rathod	001
8/29/2023 11:47:32	Shahnawaz qamarali ma	001
8/29/2023 11:47:33	Pratik Narkhede	001
8/29/2023 11:47:33	Kundan Thorat	001
8/29/2023 11:47:35	Shivkumar Vishwanath J	001
8/29/2023 11:47:37	Vaishnav Patil	001
8/29/2023 11:47:37	Sayali Bader	001
8/29/2023 11:47:38	Dhananjay patil	001
8/29/2023 11:47:38	Mayuri Maruti Dhawale	001
8/29/2023 11:47:38	Waseem Akhtar AbuTalib	001
8/29/2023 11:47:38	Pavan Bhapkar	001
8/29/2023 11:47:39	Pranay Bhujbal	001
8/29/2023 11:47:40	Ghorpade Arya Amol	001
8/29/2023 11:47:41	Omkar Tulshidas Bhagat	001
8/29/2023 11:47:41	Pranav Narayan Joshi	001
8/29/2023 11:47:42	Aflab Shaikh	001
8/29/2023 11:47:42	Mukund Kamble	001
8/29/2023 11:47:43	Rohini Sanjay Patil	001
8/29/2023 11:47:43	Patil Sanika Shahaji	001
8/29/2023 11:47:44	Satyam Megar	001
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8/29/2023 11:47:51	Pratiksha Angad Gore	001
8/29/2023 11:47:52	Suyog Kumbhkarn	001
8/29/2023 11:47:52	ADITYA GAIKWAD	001
8/29/2023 11:47:53	Ajay Shingare	001
8/29/2023 11:47:54	Shubham Vishwakarma	001
8/29/2023 11:47:55	Prathamesh swami	001
8/29/2023 11:47:58	Prathmesh kumbhar	001
8/29/2023 11:48:02	Bhavesh Kolhe	001
8/29/2023 11:48:05	Ayub nadaf	001
8/29/2023 11:48:05	Om shinde	001
8/29/2023 11:48:12	Dinesh Sunil Jawale	001
8/29/2023 11:48:13	Abhishek Ramnath Dehit	001
8/29/2023 11:48:14	Ankush Sunil Shinde	001
8/29/2023 11:48:15	Aasiya Shafiq Shaikh	001
8/29/2023 11:48:18	Omkar bahanabahane	001
8/29/2023 11:48:25	Rohit Bajarang Ingle	001
8/29/2023 11:48:29	Rohit kashinath chavan	001
8/29/2023 11:48:37	Aishwarya Dhormare	001
8/29/2023 11:48:41	Prayas	001
8/29/2023 11:48:56	prathamesh akkatangerh	001
8/29/2023 11:49:04	Md. Hussen shaikh	001
8/29/2023 11:49:04	Prathmesh Vrushiket Chr	001
8/29/2023 11:49:08	Pratik popat karjule	001
8/29/2023 11:52:23	Umesh Dattatray Gavhar	001
8/29/2023 11:53:38	Shivani Dilip Sonone	001

Timestamp	Your Full Name	Code
Attendance 2 (30.08.23)	Bridge Course	
8/30/2023 12:11:40	Ajay Pakhare	0002
8/30/2023 12:11:51	Kamble sahebrao mohar	0002
8/30/2023 12:11:53	Prathamesh Hiware	0002
8/30/2023 12:11:54	Kapish vibhute	0002
8/30/2023 12:11:59	Gaikwad Kanchan Ravin	0002
8/30/2023 12:12:00	Fahad Shakeel Shaikh	0002
8/30/2023 12:12:00	Yogita dilip thorat	0002
8/30/2023 12:12:05	Tushar patil	0002
8/30/2023 12:12:09	Shriya Dattatray Parab 1	0002
8/30/2023 12:12:15	Shaikh Sana Rahim	0002
8/30/2023 12:12:30	Mohini Mahadev Kale	0002
8/30/2023 12:12:43	Nishant yadav ugale	0002
8/30/2023 12:12:44	swaroop hanmant bagal	0002
8/30/2023 12:12:45	Neha Manik Phadtare	0002
8/30/2023 12:12:51	Shraddha Satish Salunkl	0002

ShikshanMaharshi Dr. D. Y. PatilShikshanSanstha's
Dr. D. Y. Patil Centre For Management & Research,
NewaleVasti, Chikhali, Pune – 412114.
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Website: http://www.dypatilmba.com

Ref.: DYPCMR/Student Notice/ /2023-24 Date: 22nd Apr, 2024

Notice

Kindly note that Remedial Lectures for Subject Java Programming and DSA are Scheduled as follows.

Schedule for Remedial Lectures:

Subjects	Date & Time
DSA Java Programming	23rd Apr. 2024 at 10:00 am to 12:30 pm 23rd Apr. 2024 at 01:30 pm to 04:00 pm
Java Programming DSA	24th Apr. 2024 at 10:00 am to 12:30 pm 24th Apr. 2024 at 01:30 pm to 04:00 pm
Java Programming DSA	25th Apr. 2024 at 10:00 am to 12:30 pm 25th Apr. 2024 at 01:30 pm to 04:00 pm

Dr. Jayshri Patil
HOD - MCA

Dr. Sunil Dhanawade
Director

Director
Dr. D. Y. Patil Centre For Management and Research
Gat No. 1023, NRO, A/P, Chikhali-411062.

Semester I

Course Code: IT-11
Course Name: Java Programming

Credit Scheme			Evaluation Scheme				
Lecture	Practical	Credit	Internal			External	Total
			Written	Practical	Tutorial		
3 Hrs./Week	-	3	25	-	-	50	75

Course Description:

Prerequisite:

Knowledge of programming structures like decision flows, loops, etc.

Course Objectives:

1. To familiarize students with the concepts of OOPs.
2. To enable the students to understand the core principles of the Java Language and use AWT tools to produce well designed, effective applications.
3. Students will be able to develop server-side applications with database handling using servlets, JSP, JDBC

Course Outcomes:

Student will be able to

CO1 Understand Basic Concepts of OOPs, Java, Inheritance, Package. (Understand)
CO2: Understand Exception handling, arrays and Strings and multi-threading in Java (Understand.)
CO3: Understand collection framework (Understand)
CO4: Develop GUI using Abstract Windows Toolkit (AWT) and event handling (Apply)
CO5: Develop Web application using JSP and Servlet, JDBC (Apply)

Course Structure:

Sr. No.	Topics Details	Weightage in %	No of Sessions
1	1. Introduction - 1.1 About Java 1.2 Flavours of Java 1.3 Java Installation 1.4 Java Program Development Environment **Extra reading:** docs oracle docs	3	2

2	**2. Object Oriented Programming** 2.1 Class Fundamentals 2.2 Object & Object reference 2.3 Object Life time & Garbage Collection 2.4 Creating and Operating Objects 2.5 Constructor & initialization code block 2.6 Access Control, Modifiers, Use of Modifiers with Classes & Methods. 2.7 Nested, Inner Class & Anonymous Classes, Abstract Class & Interfaces 2.8 Methods, Defining Methods, Argument Passing Mechanism, Method Overloading, Recursion, Dealing with Static Members, Finalize () Method, Native Method. 2.9 Use of "this "reference, 2.10 Design of Accessors and Mutator Methods 2.11 Cloning Objects, shallow and deep cloning 2.12 Generic Class Types. **Extra Reading** : OCA Java Programmer :I Exam Kathy Sierra	8	3
3	**3. Extending Classes and Inheritance** 3.1 Use and Benefits of Inheritance in OOP 3.2 Types of Inheritance in Java 3.3 Inheriting Data members and Methods 3.4 Role of Constructors in inheritance 3.5 Overriding Super Class Methods, Use of "super" 3.6 Polymorphism in inheritance 3.7 Type Compatibility and Conversion 3.8 Implementing Interfaces **Extra Reading**: Understanding and practicing above concept in depth - OCA Java Programmer: I Exam Kathy Sierra	6	3
4	**4. Package** 4.1 Organizing Classes and Interfaces in Packages 4.2 Package as Access Protection 4.3 Defining Package 4.4 CLASSPATH Setting for Packages 4.5 Making JAR Files for Library Packages 4.6 Import and Static Import 4.7 Naming Convention for Packages. **Extra Reading**: Oracle Java tutorial	3	2
5	**5. Exception Handling**	6	3

	5.1 The Idea behind Exception 5.2 Exceptions & Errors 5.3 Types of Exception 5.4 Control Flow in Exceptions 5.5 JVM reaction to Exceptions 5.6 Use of try, catch, finally, throw, throws in Exception Handling 5.7 In-built and User Defined Exceptions Checked and Un-Checked Exceptions **Extra Reading**: Oracle Java tutorial		
6	**6. Array & String**: 6.1 Defining an Array 6.2 Initializing & Accessing Array 6.3 Multi –Dimensional Array 6.4 Operation on String, Mutable & Immutable String 6.5 Using Collection Bases Loop for String, Tokenizing a String 6.6 Creating Strings using StringBuffer, String Builder Extra Reading : Java arrays, tokenizer applications– Jenkov Tutorials	4	2
7	**7. Thread** 7.1 Understanding Threads 7.2 Needs of Multi-Threaded Programming 7.3 Thread Life-Cycle 7.4 Thread Priorities 7.5 Synchronizing Threads 7.6 Inter Communication of Threads 7.7 Critical Factor in Thread –Deadlock Extra Reading : Animation Using Thread	6	3
8	**8. A Collection of Useful Classes** 8.1 Utility Methods for Arrays 8.2 Observable and Observer Objects, 8.3 Date & Times, 8.4 Using Scanner 8.5 Regular Expression, 8.6 Input/output Operation in Java (java.io Package) 8.7 Streams and the new I/O Capabilities **8.7.1** Understanding Streams **8.7.2** The Classes for Input and Output **8.7.3** The Standard Streams 8.8 Working with File Object **8.8.1** File I/O Basics, **8.8.2** Reading and Writing to Files	6	3

	8.8.3 Buffer and Buffer Management 8.8.4 Read/Write Operations with File Channel 8.9 Serializing Objects Extra Reading : regex – Pattern matching, split examples, reading and writing Character Stream, Byte stream and Objects in java files.		
9.	**9. UI Programming** **9.1** Designing Graphical User Interfaces in Java, 9.2 Components and Containers, 9.3 Basics of Components 9.4 Using Containers 9.5 Layout Managers, 9.6 AWT Components 9.7 Adding a Menu to Window 9.8 Extending GUI Features Using Swing Components Extra Reading : Using Swing toolkit GUI –oracle java tutorial	12	5
10	**10. Event Handling** 10.1 Event-Driven Programming in Java 10.2 Event- Handling Process 10.3 Event Handling Mechanism 10.4 The Delegation Model of Event Handling 10.5 Event Classes, Event Sources, Event Listeners 10.6 Adapter Classes as Helper Classes in Event Handling. Extra Reading : Hierarchy of Event Classes, Event Sources, Event Listeners- Oracle java docs	10	4
11	**11. The Collection Framework** 11.1 Introduction to Java Frameworks 11.2 Collections of Objects 11.3 Collection Types, Sets, Sequence, Map 11.4 Understanding Hashing 11.5 Use of ArrayList & Vector 11.6 Java Utilities (java.util Package) Extra Reading : searching, sorting, insertion, manipulation, deletion of data using Java Collections	10	4
12	**12. Database Programming using JDBC** 12.1 Introduction to JDBC 12.2 JDBC Drivers & Architecture 12.3 CURD operation Using JDBC 12.4 Connecting to non-conventional databases	10	4

	Extra Reading: List of JDBC Drivers and Jars, Statement, Prepared Statement and Callable Statement.		
13	**13. Java Server Technologies** 13.1 Servlet Web Application Basics, 13.2 Architecture and challenges of Web Application 13.3 Introduction to servlet 13.4 Introduction to JSP 13.5 Servlet life cycle 13.6 Developing and Deploying Servlets, Exploring Deployment Descriptor (web.xml) 13.7 Handling Request and Response. Extra Reading : Session handling 4 methods, Request Dispatcher ,JSP Tags, JSP Implicit objects, Generic Servlet	16	7
	Total:	**100**	**45**

Course References:

Recommended Books:

Text Books:

1. Java Complete Reference Schildt Herbert, TMH.
2. Java Fundamentals (SIE), Schildt Herbert, TMH
3. The Complete Reference JSP, Phil Hanna, TMH
4. JDBC, Servlet and JSP, Black Book, Santosh Kumar K. Dremtech publication

Reference Books:

1. Head First Servlets and JSP, 2nd Edition by Bert Bates, Bryan Basham, Kathy Sierra
2. OCJP Oracle Certified Programmer for Java Study Guide by Kathy Sierra and Bert Bates.
3. A Programmer's Guide to Java OCJP Certification (A Comprehensive Primer) by Khalid A. Mughal and Rolf W. Rasmussen.
4. Java Server Programming Java Ee&(J2EE 1.7), Black Book, Wiley publications

Recommended Learning Material:

1. www.javatpoint.com
2. www.oracle.com
3. www.tutorialspoint.com
4. www.geeksforgeeks.org/java

Recommended Certification:

1. OCA- Oracle Certified Associate
2. OCP- Oracle Certified Professional

Course Code: IT-12
Course Name: Data Structure and Algorithms

Chikhali Pune-14

Credit Scheme			Evaluation Scheme				
Lecture	Practical	Credit	Internal			External	Total
			Written	Practical	Tutorial		
3 Hrs./Week	-	3	25	-	-	50	75

Course Description:

Prerequisite

Loops, Functions, Pointers, Arrays, Memory Allocation, Recursion

Course Objectives:

1. To understand basics data structure and algorithms
2. To solve problems using data structures such as linked lists, stacks, queues, hash tables, trees, heaps and graphs
3. To understand various programming techniques such as brute force, greedy, dynamic programming, divide-conquer and backtracking

Course Outcomes:

Student will be able to

CO1: demonstrate linear data structures linked list, stack and queue (apply)
CO2: implement tree, graph, hash table and heap data structures (apply)
CO3: apply brute force and backtracking techniques (apply)
CO4: demonstrate greedy and divide-conquer approaches (apply)
CO5: implement dynamic programming technique (apply)

Course Structure:

Sr. No.	Topics Details	Weightage in %	No of Sessions
1	**Linked List** 1.1 Singly Linked List 1.2 Doubly Linked List Extra Reading: Circular Linked list and Circular doubly linked list	8	2
2	**Stack and Queues** 2.1 Linked List implementation of Stack 2.2 Linked List implementation of Queue 2.3 Circular Queue 2.4 Priority Queue	10	4

	Extra Reading: Dqueue, Application of Stack		
3	**Tree** 3.1 Tree 3.2 Binary Search Tree 3.3 AVL Tree 3.4 Red-Black Tree 3.5 Segment Tree - with min/max/sum range queries examples 3.6 Fenwick Tree (Binary Indexed Tree) Extra Reading: Application of Tree, B* tree	12	
4	**Graph** 4.1 Directed and Undirected Graph 4.2 Graph Representations 4.2.1 Adjacency Matrix 4.2.2 Adjacency List 4.3 Graph Traversals 4.3.1 BFS 4.3.2 DFS Extra Reading: Application of Graph in Maps	8	2
5	**Hash Table and Heaps** 5.1 Hash Table 5.1.1 Hash Function 5.1.2 Hash function approaches 5.1.3 Handling the collisions 5.2 Heap 5.2.1 Min heap and Max heap Extra Reading: Hashing used in File handling	7	2
6	**Brute Force** 6.1 Linear Search 6.2 Rain Terraces 6.3 Recursive Staircase 6.4 Maximum Subarray 6.5 Travelling Salesman Problem 6.6 Discrete Fourier Transform Extra Reading: Application in Cryptography	10	5
7	**Greedy** 7.1 Jump Game 7.2 Unbound Knapsack Problem 7.3 Dijkstra Algorithm 7.4 Prim's Algorithm 7.5 Kruskal's Algorithm	10	5

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	Extra Reading: Huffman's Tree		
8	**Divide and Conquer** 8.1 Binary Search 8.2 Tower of Hanoi 8.3 Pascal's Triangle 8.4 Euclidean Algorithm 8.5 Merge Sort 8.6 Quicksort 8.7 Fast Powering Extra Reading: Cooley–Tukey Fast Fourier Transform (FFT) algorithm	10	8
9	**Dynamic Programming** 9.1 Fibonacci Number 9.2 Unique Paths 9.3 Longest Common Subsequence (LCS) 9.4 Longest Common Substring 9.5 Longest Increasing Subsequence 9.6 Shortest Common Super sequence 9.7 0/1 Knapsack Problem 9.8 Integer Partition 9.9 Regular Expression Matching Extra Reading: Painting Fence Algorithm, Moser-de Bruijn Sequence, Newman-Conway Sequence	15	7
10	**Backtracking** 10.1 Power Set 10.2 Hamiltonian Cycle 10.3 N-Queens Problem 10.4 Knight's Tour 10.5 Combination Sum Extra Reading: Word Break Problem using Backtracking	10	5
	Total:	**100**	**45**

Note: Course should be taught independent of any programming language.

Course References:

Recommended Books:

Text Books

1. Jean Paul Tremblay, Paul G. Sorensons, "AN Introduction to Data Structures with Application", McGraw Hall Publication (INDIAN edition)
2. A. V. Aho and J.D. Ullman, "Design and Analysis of Algorithms", Addison Wesley
3. Thomas H Cormen and Charles E.L Leiserson, "Introduction to Algorithm" PHI

Reference Books

1. Lipschutz Schaum's, "Data Structure", Outline Series, MH
2. D. Samanta, "Classical Data Structure", PHI,
3. Practical Approach to Data Structures by Hanumanthappa.
4. Data Structure and Algorithms in C++ by Joshi Brijendra Kumar
5. Data Structures with C++: Schaum's Outlines by Hubbard JohnBressard,
6. Horowitz/Sahani, Fundamental of Algorithm. PHI, Galgotia.
7. Magnifying Data Structures, Arpita Gopal, PHI Publications

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7	DESHMANE AMOL BHASKAR
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15	BHAPKAR PAVAN SATISH
16	AMIT SUDHIR SALUNKHE
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19	THORAT KUNDAN SANTOSH
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29	SHAIKH AYUB SHAIKH KAYYUM
30	SHIVANI DILIP SONONE
31	KARJULE PRATIK POPAT
32	SONAWANE MAHESH DIGAMBAR
33	KHUSHI DHIRAJ JAISWAL
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46	SINGH HARSHVARDHAN BHUPENDRA
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56	SAGAR TANAJI SONTAKKE
57	ISHA POORAN SINGHAL
58	VINIL MILIND WANI
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60	KRISHNA ANAND BATA
61	SAYYAD SHEBAZ IBRAHIM
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63	CHOUDHARI PRATHMESH VRUSHIKET
64	BHAGADE PRIYASH SANJAY
65	DEVAL YOGIRAJ NARKHEDE
66	MILKE SWAPNIL SANJAY
67	SALUNKE PRATHAMESH NILESH
68	DESHMUKH RUSHIKESH KESHAV
69	PRATIK DILIP MAHAJAN

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9	BHAVESH DAYARAM SAWADH
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16	INGLE ROHIT BAJARANG
17	SHAIKH AFTAB SHAKUR
18	VISHWAKARMA SHUBHAM HARISHANKAR
19	THORAT KUNDAN SANTOSH
20	JADHAV KARAN SANJAY
21	ANDHALE PRASAD LAHU
22	CHAVAN ROHIT KASHINATH
23	SHIVKUMAR VISHWANATH JEEVANGI

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26	SHIVANI DILIP SONONE
27	KARJULE PRATIK POPAT
28	SONAWANE MAHESH DIGAMBAR
29	MANIYAR SHAHNAWAZ QAMARALI
30	KOLHE BHAVESH PRAMOD
31	DAHITULE ABHISHEK RAMNATH
32	JAWALE DINESH SUNIL
33	SHITOLE SMITA KRISHANATH
34	INGALE PRAYAS RAMDAS
35	CHUNCHUNE RUPESH GOVIND
36	THETE MAYURI SANJAY
37	SINGH HARSHVARDHAN BHUPENDRA
38	SONWANE SAMBHAJI GAUTAM
39	DAS ADITYA VIKAS
40	SHINDE ARTI NATHU
41	BANKAR RUSHIKESH KAILAS
42	BELHEKAR RUSHIKESH NAVANATH
43	INGALE MAYUR HARISH
44	BHANDE PREETIJ DNYANESHWAR
45	YADAV PREM BHARAT
46	SAGAR TANAJI SONTAKKE
47	ISHA POORAN SINGHAL
48	VINIL MILIND WANI
49	MAHARANA PRAVIN GOVARDHAN
50	AMAN ABDULRAHIM SAYYAD

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54	CHOUDHARI PRATHMESH VRUSHIKET
55	BHAGADE PRIYASH SANJAY
56	DEVAL YOGIRAJ NARKHEDE
57	MILKE SWAPNIL SANJAY
58	SALUNKE PRATHAMESH NILESH
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Attendance Sheet

Data Structures & Algorithm

Subject Faculty Name:- Prashant Chordiya (Remedial classes) Signature :-

Sr No.	Roll No.	Student Name	Date :-	16-03-2024	23/4/24	24/4/24	25/4/24		
1	223102	ANDHALE PRASAD LAHU							
2	223105	KRISHNA ANAND BATA							
3	223106	BHAGADE PRIYASH SANJAY							
4	223107	BHANDE PREETIJ DNYANESHWAR							
5	223108	BHITE MILIND ANIL							
6	223112	CHAITANYA SANJAY CHAVAN							
7	223113	CHAVAN ROHIT KASHINATH		Rohit	Rohit	Rohit	Rohit		
8	223114	CHUNCHUNE RUPESH GOVIND							
9	223115	DAS ADITYA VIKAS							
10	223116	DESHMUKH RUSHIKESH KESHAV							
11	223124	INGALE PRAYAS RAMDAS		Prayas					
12	223125	JADHAV KARAN SANJAY		Karan	Karan	Karan	Karan		
13	223127	JAWALE DINESH SUNIL							
14	223129	KAMBLE RAJASHREE PRABHAKAR							
15	223130	KARJULE PRATIK POPAT		Pratik					
16	223131	KHAN WASEEM AKHTAR ABU TALIB							
17	223132	KOVE NISHAD BHOLENATH							
18	223136	PRATIK DILIP MAHAJAN							
19	223137	MANIYAR SHAHNAWAZ QAMARALI							
20	223138	MILKE SWAPNIL SANJAY							

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21	223140	DEVAL YOGIRAJ NARKHEDE						
22	223150	AMIT SUDHIR SALUNKHE						
23	223151	BHAVESH DAYARAM SAWADH						
24	223154	SAYYAD SHEBAZ IBRAHIM						
25	223155	SHINDE ARTI NATHU						
26	223158	ISHA POORAN SINGHAL						
27	223160	SHIVANI DILIP SONONE						
28	223161	SONWANE SAMBHAJI GAUTAM						
29	223162	SURVE SAMEER SAMBHAJI						
30	223165	THORAT KUNDAN SANTOSH	K.S.Thorat	K.S.Thorat	K.S.Thorat	K.S.Thorat		
31	223167	VINIL MILIND WANI						
32	223201	ANDHALE BABALU BHAGWAN						
33	223204	BANKAR RUSHIKESH KAILAS						
34	223205	BELHEKAR RUSHIKESH NAVANATH						
35	223207	BHAPKAR PAVAN SATISH						
36	223211	VAIBHAV SHREERAM BODKHE						
37	223213	CHOUDHARI PRATHMESH VRUSHIKET						
38	223214	DAHITULE ABHISHEK RAMNATH	Abhi					
39	223215	DESHMANE AMOL BHASKAR	Amol	Amol	Amol	Amol		
40	223223	INGALE MAYUR HARISH						
41	223224	INGLE ROHIT BAJARANG						
42	223227	SHIVKUMAR VISHWANATH JEEVANGI						
43	~~223227~~ 223159	SONDKAR SOURABH SANJAY						
44	223230	KHADSE VAISHNAVI NASHIKET						
45	223231	KOLHE BHAVESH PRAMOD						
46	223233	LAD ABHISHEK AMOL	Abhi					
47	223235	MAGAR SATYAM TUKARAM						
48	223236	MAHARANA PRAVIN GOVARDHAN	PravinM	PravinM	PravinM	PravinM		

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49	223239	SAGAR RAJENDRA NANDE						
50	223249	SALUNKE PRATHAMESH NILESH						
51	223251	AMAN ABDULRAHIM SAYYAD						
52	223252	SHAIKH AFTAB SHAKUR						
53	223256	SHITOLE SMITA KRISHANATH						
54	223257	SINGH HARSHVARDHAN BHUPENDRA						
55	223258	SONAWANE MAHESH DIGAMBAR						
56	223260	SAGAR TANAJI SONTAKKE						
57	223261	SAGAR SWATI SUDHAKAR						
58	223264	THETE MAYURI SANJAY						
59	223265	VISHWAKARMA SHUBHAM HARISHANKAR						
60	223267	YADAV PREM BHARAT						
61	223240	Norkhede Pratik Vinod						
62	223134	Lingray Saloni Hemant						
63.	223252	Suyog S. kumbhkarn						

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6	VAIBHAV SHREERAM BODKHE			
7	DESHMANE AMOL BHASKAR	[illegible]	[illegible]	[illegible]
8	SALUNKHE ROHAN VIJAY			
9	KAMBLE MUKUND DATTATRAYA			
10	PRANOTI YASHWANT NAVNAGE	[illegible]		
11	LAD ABHISHEK AMOL	LadAbhi	LadAbhi	LadAbhi
12	SURVE SAMEER SAMBHAJI			
13	BHITE MILIND ANIL			
14	KHAN WASEEM AKHTAR ABU TALIB			
15	BHAPKAR PAVAN SATISH			
16	AMIT SUDHIR SALUNKHE			
17	INGLE ROHIT BAJARANG			
18	GORE PUSHPA SUBHASH			
19	THORAT KUNDAN SANTOSH	K.Sthorat	K.Sthorat	K.Sthorat
20	BHUJBAL PRANAY YASHWANT			

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22	WAKASKAR BHAGYASHREE ANISH			
23	ANDHALE PRASAD LAHU			
24	SAURABH BABAN DHAWALE			
25	SHRADDHA RAMAKANT BHOSALE			
26	SONDKAR SOURABH SANJAY			
27	CHAITANYA SANJAY CHAVAN			
28	JADHAV OMKAR DHANAJI			
29	SHAIKH AYUB SHAIKH KAYYUM			
30	SHIVANI DILIP SONONE			
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65	DEVAL YOGIRAJ NARKHEDE			
66	MILKE SWAPNIL SANJAY			
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