



Dr. V. N. Bedekar Institute of Management, Thane
Teaching Plan (MMS/PGDM)
Academic Year (2018-2019)

Programme Name: MMS

Semester: II

Name of the Course: **Operations Research**

Maximum marks: **100**

No. of Sessions: **15**

Name of the Faculty: **Ajiitabh Dutta**

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Email: **ajitabhdutta@gmail.com**

Weblink:

Learning Objectives:

- To know optimizing techniques
- To understand its use in decision making in business
- To Identify and develop operational research model from real time systems
- To appreciate the mathematical basis for business decision making

Reference Books:

- ❖ Operation Research – AN introduction- HamdyTaha, Prentice Hall Of India
- ❖ Quantitative Techniques in Management -N D Vohra, Tata McGraw Hill
- ❖ Operations Research Theory and Applications- J K sharma, Macmillan Business books
- ❖ Principles of Operations Research –Wagner, Prentice Hall of India
- ❖ Operations Research- Hilier, Liberman, Tata McGraw Hill
- ❖ An introduction to Management Science – Anderson Sweeney Williams, Cengage Learning



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Plan:

Session No	Topics to be covered	Books referred/ Recommended/ References- Print/Articles/ News/Research papers/ Online database/ Software /Simulations used	Learning outcomes	Evaluation of Students understanding by MCQs, Quiz, Short Test
1	Introduction to OR and mathematical models	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand application in business	Assignment
2	Linear Programming- Formulation, Solution by graph	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Data modeling and framing	Assignment
3	Solving by Simplex	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Data modeling and framing	Assignment
4	Duality, post optimality and Sensitivity Analysis	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand special cases of LPP and apply in appropriate situation	Assignment
5	Linear Programming applications	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand special cases of LPP and apply in appropriate situation	Assignment
6	Transportation problem with special cases	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand special cases of LPP and apply in appropriate situation	Assignment
7	Transportation problem continued	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand special cases of LPP and apply in appropriate situation	Short Test
8	Assignment Problem with special cases	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand special cases of LPP and apply in appropriate situation	Assignment



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9	Game theory- Zero sum games	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand Competitive environment of business	Assignment
10	Decision Theory- Under Risk, Uncertainty, decision tree	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand project management techniques	Assignment
11	Waiting lines model- (M M 1):(FIFO ∞ ∞) with cost implication	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand queue model as a measure of performance of system	Assignment
12	Simulation- queue system, inventory and demand simulation	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understand the creation of a working model	Assignment
13	Introduction to network models	Operation Research – AN introduction- Hamdy Taha, Prentice Hall Of India	Understanding project management	Assignment
14	Viva / Presentation			
15	Viva / Presentation			



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2. Practical Approach : Other activities

Sr. No.	Activity Name	Topic Covered	Learning outcomes	Source
1	Practical simulation of a factory	Queuing	Understanding the role of statistical deviation	
2	Industry Visit			
3	Academic Projects	Linear programming	Understand framing of practical LPs	
4	Book Review			
5	Group Discussion	Demand simulation	Understating production optimization	
6	Business Quiz / Business News sharing			
7	Videos / Simulation	Classroom simulation of Game theory	Understanding zero sum game	
8	Use of Software and Labs	Use of Excel to solve OR problems	Solving LPP TP AP	
9	Any other activity			



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Use of ICT for effective teaching with Learning Management Systems (LMS), E-Learning resources etc.: -

Use of classroom simulations using analog models for queuing and sequencing
Teaching through Online resources to understand integer programming
Solving LP, TP and AP with excel solver
Daily assignments for each topic

Innovation and Creativity in teaching- learning: -

Build every model type with classroom contextualization

Suggestions (if any) to students on subject related Certificate/Diploma or Add-on program: -

<https://www.udemy.com/optimisation/>

<https://swayam.gov.in/course/1342-introduction-to-operations-research>



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Evaluation:

I) Internal:

Component	Details	Marks
Class Test	Internal Class Test	20
Case Study and assignments		10
Participation	Attendance and class participation	10

Signature of Faculty

Signature of the Co-ordinator



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