



**Dr. V. N. Bedekar Institute of Management, Thane**  
**Teaching Plan (MMS/PGDM)**  
**Academic Year (2017-2018)**

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Programme Name: MMS

Name of the Course: **Operations Research**

Maximum marks: **100**

No. of Sessions: **15**

Name of the Faculty: **Ajiitabh Dutta**

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Weblink:

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**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:**

<b>Session No</b>	<b>Topics to be covered</b>	<b>Books referred/ Recommended/ References- Print/Articles/ News/Research papers/ Online database/ Software /Simulations used</b>	<b>Learning outcomes</b>	<b>Evaluation of Students understanding by MCQs, Quiz, Short Test</b>
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			

**2. Practical Approach : Other activities (At least 4 distinct 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			
4	Book Review			
5	Group Discussion	Demand simulation	Understating production optimization	
6	Business Quiz / Business News sharing			



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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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**Evaluation:**

**I) Internal:**

<b>Component</b>	<b>Details</b>	<b>Marks</b>
Class Test		20
Case Study and assignments		10
Participation	Attendance and class participation	10

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**Signature of Faculty**

**Signature of the Co-ordinator**