Semester Plan
(Theory)

TCET/FRM/IP-02/09 | Revision: A

Semester: VII | Course: MECH
Subject: MEC505: Operations Research | Class: BE MECH -A & B

Sr.No.	Prerequisite/ Bridge course:	Duration (Week /Hrs)	Modes of Learning	Recommended Sources
1	Applied Mathematics and Statistics	6 hours	Self Learning/ Revision	1. Applied Methematics: G.V. Kumbhojkar

Class Room Teaching

Sr. No	Module No.	Lesson No	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
1	Module 1	L1.1	Introduction of LPP (Linear Programming & Problem)	Chalk & Board	10/7/2017	1.1	
2	Module 1	L1.2	LPP problem formulation	Chalk & Board	12/7/2017	1.1	
3	Module 1	L1.3	LPP Graphical Solution	Chalk & Board	13/7/2017	1.1	
4	Module 1	L1.4	LPP Graphical Solution	Chalk & Board	14/7/2017	1.1	
5	Module 1	L1.5	Simplex Method	Chalk & Board	17/7/2017	1.1	
6	Module 1	L1.6	Simplex Method	Chalk & Board	18/7/2017	1.1	
7	Module 1	L1.7	Two phase method	Chalk & Board	21/7/2017	1.1	
8	Module 1	L1.8	Big-M method	Chalk & Board	24/7/2017	1.1	
9	Module 1	L1.9	Principle of Duality	Chalk & Board	26/7/2017	1.1	
10	Module 1	L1.10	Dual Simplex	Chalk & Board	27/7/2017	1.1	
11	Module 1	L1.11	Sensitivity Analysis	Chalk & Board	28/7/2017	1.1	
12	Module 2	L2.1	Transportation Problem	Chalk & Board	31/7/2017	1.1	

13	Module 2	L2.2	Assignment Problem	Chalk & Board	2/8/2017	1.1	
14	Module 2	L2.3	Travelling Sales Man problem	Chalk & Board	3/8/2017	1.1	
15	Module 2	L2.4	Sequencing Problem	Chalk & Board	4/8/2017	1.1	
16	Module 2	L2.5	Sequencing Problem	Chalk & Board	7/8/2017	1.1	
17	Module 3	L3.1	Replacement of Items	Chalk & Board	9/8/2017	1.1	
18	Module 3	L3.2	Replacement without Money value	Chalk & Board	10/8/2017	1.1	
19	Module 3	L3.3	Group Replacement	Chalk & Board	11/8/2017	1.1	
20	Module 3	L3.4	Queing Models- Single Channel	Chalk & Board	14/8/2017	1.1	
21	Module 3	L3.5	Queing Models- MultiChannel	Chalk & Board	16/8/2017	1.1	
22	Module 4	L4.1	Game Theory	Chalk & Board	18/8/2017	1.3	
23	Module 4	L4.2	Solution of games with Saddle points	Chalk & Board	24/8/2017	1.3	
24	Module 4	L4.3	Rectangular Games without Saddle Points	Chalk & Board	30/8/2017	1.3	
25	Module 4	L4.4	2 *2 Games	Chalk & Board	31/8/2017	1.3	
26	Module 4	L4.5	Graphical Method	Chalk & Board	1/9/2017	1.3	
27	Module 5	L5.1	Introduction to Inventory Models	Chalk & Board	4/9/2017	1.3	
28	Module 5	L5.2	Deterministic Model	Chalk & Board	6/9/2017	1.1	
29	Module 5	L5.3	Stochastic Model	Chalk & Board	7/9/2017	1.1	
30	Module 5	L5.4	Probabilistic Models	Chalk & Board	8/9/2017	1.1	
31	Module 5	L5.5	Probabilistic Models	Chalk & Board	11/9/2017	1.1	

32	Module 6	L6.1	Dynamic Programming	Chalk & Board	13/9/2017	1.1	
33	Module 6	L6.2	Bellman's Principle of Optimality	Chalk & Board	14/9/2017	1.1	
34	Module 6	L6.3	Shortest Path Problem	Chalk & Board	15/9/2017	1.1	
35	Module 6	L6.4	Shortest Path Problem	Chalk & Board	18/9/2017	1.1	
36	Module 6	L6.5	Simulation and Applications	Chalk & Board	20/9/2017	1.1	
37	Module 6	L6.6	Simulation and Applications	Chalk & Board	21/9/2017	1.1	
38	Module 6	L6.7	Advantages and Disadvantages of Simulation	Chalk & Board	22/9/2017	1.1	

Remark:Total 38 leacture			
Course: TE MECH	Syllabus Coverage: Planned :38 Completed:	Practice Session: 2	**Content Beyond Syllabus:** Decision Theory and Integer Programming

No. of (lectures planned)/(lecture taken): 49

Sr.No.	Advanced Bridge course:	Duration (Week	Modes of	Recommended Sources
	Decision Theory and Integer Programming	20 Hours	Online course videos with Hands on Training	1. https://onlinecourses.nptel.ac.in/noc17_mm17/preview

Text Books:

1. Operations Research: Principle and Practices, A. Ravindran, D. Phillips, Wiley India. 2. Operations Research, S. D. Sharma, KedarNath Ram Nath-Meerut. 3. Operations Research, R. Panneerselvam, PHI Publications.
4. Operations Research, A. M. Natarajan, P. Balasubramani, A. Tamilarasi, Pearson Education
5. Operations Research - An introduction, Hamdy A Taha, Pearson Education. 6. Operations Research, KantiSwarup, P. K. Gupta and Man Mohan, Sultan Chand & Sons.
7. Operations Research: Methods and Problems, Maurice Saseini, ArhurYaspan and Lawrence Friedman.
8. Introduction to O.R, Hiller & Libermann (TMH)

Digital Reference:

3.1 www.nptel.ac.in
3.2 http://www.e-booksdirectory.com/details.php?ebook=5286

Name & Signature of Faculty Signature of HOD Signature of Principal /Dean (Academics)

Date: Date: Date:

Note:

1. Plan date and completion date should be in compliance
2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.
3. Planning is to be done for 15 weeks where 1st week will be AOP, 2nd -13th for effective teaching and 14th -15th week for effective university examination oriented teaching, mock practice session and semester consolidation.
4. According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.
5. In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.
6. Text books and reference books are available in syllabus. Here only additional references w.r.t. non –digital/ digital sources can be written (if applicable)
7. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.

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