

**Department of Production Engineering**  
**Fr. Conceicao Rodrigues College of Engineering (CRCE)**

**LESSON PLAN**

<b>Subject:</b>	<b>Operations Research</b>
<b>Academic Year:</b>	<b>2017-18</b>
<b>Name of the Teacher:</b>	<b>Dr.V.S.JORAPUR.</b>

<b>Week No.</b>	<b>Topics</b>	<b>Module</b>	<b>Hours</b>
<b><u>Week 1</u></b> (01/01/18 – 05/01/18)	Introduction to operations research. Applications and limitations. An introduction to Sequencing. Uses and applications. Johnson’s algorithm. A sample problem introduced.	<b>1</b>	<b>2</b>
<b><u>Week 2</u></b> (08/01/18 – 12/01/18)	Sequencing of two machines and ‘n’ jobs. Problems solved.	<b>1</b>	<b>3</b>
<b><u>Week 3</u></b> (15/01/18 – 19/01/18)	Assignment Models- Hungarian method. A case of Maximization Problem.	<b>1</b>	<b>2</b>
<b><u>Week 4</u></b> (22/01/18 – 25/01/18)	Transportation Models- Formulation. Generalize mathematical model. Methods to get initial basic feasible solution. Iteration towards optimality: MODI method.	<b>1</b>	<b>2</b>
<b><u>Week 5</u></b> (29/01/18 – 02/02/18)	Problems continued.	<b>1</b>	<b>2</b>
<b><u>Week 6</u></b> (05/02/18 – 09/02/18)	Problems continued.	<b>1</b>	<b>2</b>
<b><u>Week 7</u></b> (12/02/18 – 16/02/18)	<b>Unit Test 1 (Feb 12, 14 and 15) – FE, SE, TE.</b>		
<b><u>Week 8</u></b> (20/02/18 – 23/02/18)	Simulation: Random number generation techniques. Problems of simulation.	<b>5</b>	<b>2</b>
<b><u>Week 9</u></b> (26/02/18 – 01/03/18)	Simulation problems based on Queuing models and Inventory models. Introduction to Game theory.	<b>5 and 3</b>	<b>3+1</b>

**Department of Production Engineering**  
**Fr. Conceicao Rodrigues College of Engineering (CRCE)**

<b><u>Week 10</u></b> (05/03/18 – 09/03/18)	Two person zero sum games with saddle point and without saddle point. Mx2 and 2xn games. Graphical solution.	5	3
<b><u>Week 11</u></b> (12/03/18 – 16/03/18)	Introduction Linear Programming. Basic variables, non-basic variables. Simplex method.	1	2
<b><u>Week 12</u></b> (19/03/18 – 23/03/18)	Two-Phase method and Big-M method. Duality in linear programming.	1	3
<b><u>Week 13</u></b> (26/03/18 – 28/03/18)	Replacement models- Different criteria for replacing items.	2	1
<b><u>Week 14</u></b> (02/04/18 – 06/04/18)	<b>Unit Test 2 (April 2, 3 and 4) – SE, TE.</b>		
<b><u>Week 15</u></b> (09/04/18 – 13/04/18)	Remedial classes.	All modules	5
<b><u>Week 16</u></b> (16/04/18 – 21/04/18)	<b>Term End (April 21)</b>		