

New experiments and modules developed

1.	Dr. V. Madhusudanan Pillai	ME3105D Management Science Lab	<p>List of Experiments Developed for Management Science Lab</p> <ol style="list-style-type: none"> 1. Operation simulation of a serial supply chain using Supply Chain Role Play Game (SCRPG) software package 2. Performance analysis of a four-echelon supply chain under order up to level inventory policy using Supply Chain Inventory Policy Analyser (SCIPA) software packages 3. Problem formulation, and solution & sensitivity analysis using LINGO 4. Simulation exercise using ARENA and WITNESS 5. Construction of X-bar and R Chart 6. Preparation of material plan and schedule on rolling horizon basis for components of an end item using MNMRP package 7. Design of process layout for the given problem 8. Preparation of assembly chart and product structure, and MRP planning 9. Learning curve <p>The above lab experiments/exercises are developed to help the students in gaining better insight and improve their understanding in the production/operations management, industrial engineering, manufacturing system simulation, supply chain management, etc.</p> <p>Number of inhouse developed software packages are used in the above exercises. Homepages of software packages developed in house are attached herewith.</p> <p>In the above exercises, a templated approach is</p>
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			followed and as a result every student will be guided uniformly through various steps of the exercises. As a result, missing certain steps of the exercise can be avoided.
2.	Dr. V. Madhusudanan Pillai	<p>Supply chain Role Play Game</p> <ul style="list-style-type: none"> ● Instructor's Manual, ● User Manual, ● Exercise Handout and ● Typical Results and Discussion 	<ul style="list-style-type: none"> ● Supply Chain Role Play Game is an interactive e-learning and experiential learning tool for learning the concept of supply chain management. ● The mother of this software package is Beer Distribution Game of MIT, USA. Different versions of the Beer Distribution Game are available worldwide. This management game is widely used in teaching courses such as Production Management, Supply Chain Management, etc. ● The version available in India is Supply Chain Role Play Game which is developed in the Department of Mechanical Engineering with the support of the Computer Science and Engineering Department. ● This package is used for roleplay based operation of virtual supply chain with four members such as Retailer, Wholesaler, Distributor and Manufacturer ● One of the exercises for ME3105D Management Science lab is based on this software package ● Several workshops are conducted in many institutions using this package ● Two PhDs are completed based on this package and Two PhDs are ongoing. One of the ongoing PhDs uses the data generated from this game for Machine Learning application development for Supply Chain Order Management Another used it for developing blockchain adoption.