IE #### – Inventory Management
Spring 2019
Course Syllabus

Instructor
Dr. Surya D. Liman (email: surya.liman@scupi.cn)
> Office: 4-220
> Office Hours: Tuesdays and Thursdays, 10:15 AM – 11:45 AM

Teaching Assistant
TBA
> Office:
> Office Hours:

Lecture
Wednesdays: 1st lecture 9:00 AM – 10:30 AM; Room: Zone 3.104
2nd lecture 10:45 AM – 12:00 PM; Room: Zone 3.104

Course Description
Deterministic and stochastic inventory models for single- and multiple-item systems. Analysis and design of logistics systems. Supply chain management and coordination. Demand forecasting. 3 credit hours.

Course Objectives
This course develops student's analytic abilities to formulate and solve inventory, logistics and supply chain problems faced by today's firms. Students learn to take a comprehensive view of complex inventory and supply chain systems. Additionally, the students develop abilities to model, optimize, and design such systems.

Applicable ABET Outcomes
1. An ability to apply knowledge of mathematics, science and engineering.
2. An ability to analyze and interpret data.
3. An ability to identify, formulate and solve engineering problems.
4. An ability to engage in life-long learning.
5. An ability to know contemporary issues.
6. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Course Pre-Requisites
Basic knowledge in statistics (e.g., IE 1070). Junior status or instructor's permission.

Textbook
Tersine, R.J. (1994, 4th Edition), *Principles of Inventory and Materials Management*, Prentice Hall, Englewood Cliffs, New Jersey.

Assessments

Homework assignments, projects, and exam questions related specifically to the objectives above.

Attendance: 10 %
Homeworks & Assignments: 20 %
Mid-Semester Examination: 30 %
Final Examination: 40 %
                                              100 %

Score	Letter Grade
90.00 – 100.00	A
85.00 – 89.99	A–
80.00 – 84.99	B+
76.00 – 79.99	B
73.00 – 75.99	B–
70.00 – 72.99	C+
66.00 – 69.99	C
63.00 – 65.99	C–
61.00 – 62.99	D+
60.00 – 60.99	D
0.00 – 59.99	F

Attendance

There are 26 90-minute lecture periods in the semester. Attendance will be taken for each lecture period. Each student is allowed **three absences**. Each absence, after the third absence, will result in a **1% deduction** from the attendance grade. After the **thirteenth** absence, the student will **not** be allowed to take the final exam.

Homework and Other Assignments

Homework problems and other assignments will be assigned periodically and are due as stated. Late submission **will not** be accepted. Submissions must be done on **A4 papers** and **stapled** together at the top left-hand corner. Students' names and ID numbers must be listed on the first page at the top right-hand corner.

Exams

There will two exams, all are CLOSED BOOK, CLOSED NOTES, CLOSED COMPUTER. Students are allowed to bring one A4 page note and it must be hand-written on one side of the paper only. It cannot be a photo copy. If you must miss an exam, you should make alternative arrangements with the instructor before the exam is given. If you miss an exam without prior notification, you will receive a score of "zero" for that exam except under extenuating circumstances.

Make-Up Exams

Students who have not taken both mid-semester and final exams are not eligible for make-up exams. Make-up exams can only be taken by students who have attained between 50.00 % and 59.99 % (out of 100 %) of the total score. Only 75 % of the make-up exam grade can be used to **replace** the final exam grade. Students taking make-up exams can only attain at most a "**D**" grade.

Avoiding Plagiarism

1. Unacknowledged direct copying from the work of another person, or the close paraphrasing of somebody else's work, is called plagiarism and is a serious offence, equated with cheating in examinations. This applies to copying both from other students' work and from published sources such as books, reports or journal articles.

2. Paraphrasing, when the original statement is still identifiable and has no acknowledgement, is plagiarism. A close paraphrase of another person's work must have an acknowledgement to the source. It is not acceptable for you to put together unacknowledged passages from the same or from different sources linking these together with a few words or sentences of your own and changing a few words from the original text: this is regarded as over-dependence on other sources, which is a form of plagiarism.

Tentative Course Schedule

Week	Day	Dates	Topics	Chapter
1	Wed	Feb 27	Course Introduction and Review of Syllabus Introduction to inventory systems Forecasting – qualitative	1 2
2	Wed	Mar 6	Forecasting – quantitative: regression, MA, EWMA Forecasting – EWMA with trends and seasonalities	2
3	Wed	Mar 13	Basic Economic Order Quantity (EOQ) and Sensitivity Analysis EOQ with Quantity Discounts and Known Price Changes	3
4	Wed	Mar 20	Economic Production Quantity (EPQ) EPQ with Backorder Allowed	3
5	Wed	Mar 27	Multi-Item EOQ Resource Constrained Models	6
6	Wed	Apr 3	MID-TERM EXAM	
7	Wed	Apr 10	Dynamic Lot Size Models – Wagner-Whitin Dynamic Lot Size Models – Heuristics	4
8	Wed	Apr 17	Independent Demand Systems	5
9	Wed	Apr 24	Single Order Quantities	7
10	Wed	May 1	LABOR Day (HOLIDAY)	
11	Wed	May 8	Materials Requirement Planning (MRP)	8
12	Wed	May 15	In-Process Inventory Just-In-Time Theory of Constraints	9
13	Wed	May 22	Distribution Inventory Systems	10
14	Wed	May 29	FINAL EXAM	