INTERNATIONAL MANAGEMENT INSTITUTE, BHUBANESWAR
PROGRAMME NAME: POST GRADUATE DIPLOMA IN MANAGEMENT for Working Executives
BUSINESS MATHEMATICS (QM501)
CREDIT: Full (2 Credits)
SESSION DURATION: 90 Minutes

TERM: I
YEAR: 2013-2014
BATCH: I

FACULTY (Name): Dr. Manit Mishra; Prof. Padmini Jindal
Telephone: (0674)3042127; (0674)3042138
E-Mail: manit.mishra@imibh.edu.in; padmini@imibh.edu.in
Office hours: 9.30 AM – 5.30 PM

Course Introduction: Mathematics is a tool required to allow you to excel in business. Business mathematics is clearly an example of a body of ideas and techniques where the whole is bigger than the sum of its parts. This course addresses the need of executives to get acquainted with the basic concepts and areas of managerial applications of mathematics, probability and operation research. The course would help the students to understand the relevance of mathematics in business decision making.

Course Objectives:

- To understand mathematics from a business application perspective.
- To enable the student to gain a quantitative orientation.
- To improve the ability to formulate and resolve complex decision problems in a practical manner.
- To provide insight into various quantitative methods of decision making, their uses and their limitations

Course Pedagogy: The sessions will be a blend of interactive lectures and discussions and will be supplemented by case discussions and exercises.

Course Readings:

Text books

1. Levin, R.I. and Rubin, D.S. (1998) *Statistics for Management*. Pearson Education, New Delhi (SFM).

Reference book(s)

1. Anderson. D.R., Sweeney, D.J. and Williams, T.A. (2011) *Statistics for Business and Economics*. Cengage Learning.

Course Evaluation criteria:

Quiz (Best 2 out of 3)	20%
Class participation	20%
Assignment submission	20%
End-term	40%
Total	**100%**

Session Plan:

Session	Topic	Reading
1.	Matrices: Introduction to the course and decision making. *Instructor: Prof. Manit Mishra*	RM: The place of quantitative methods in management curriculum.
2-4	Introduction to Linear Programming *Instructor: Prof. Padmini Jindal*	Handouts will be provided.
	Linear Programming using Simplex Method and M Charnes Method *Instructor: Prof. Padmini Jindal*	Handouts will be provided.
	Assignment Problem *Instructor: Prof. Padmini Jindal*	Handouts will be provided.
5-7	Transportation: Problem formulation *Instructor: Prof. Padmini Jindal*	Handouts will be provided.
	Transportation: North West corner method *Instructor: Prof. Padmini Jindal*	Handouts will be provided.
	Transportation: Vogel's approximation method *Instructor: Prof. Padmini Jindal*	Handouts will be provided.
8-10	Concept of probability & probability rules *Instructor: Prof. Manit Mishra*	Text book (SFM): Ch. 4 (Page 160-174) Attempt: Problems 4-9, 4-11, 4-13, 4-15, 4-17, 4-21, 4-22, 4-23.
	Conditional probability *Instructor: Prof. Manit Mishra*	Text book (SFM): Ch. 4 (Page 176-197) Attempt: Problems 4-26, 4-28, 4-32, SC4-10, 4-37, 4-41, 4-42, 4-48, 4-49, 4-71, 4-74, 4-86.
	Probability distributions, Random variables and their Expected values *Instructor: Prof. Manit Mishra*	Text book (SFM): Ch. 5 (Page 222-235) & Ch. 17 (Page 972-977) Attempt: Problems SC5-2, 5-11, 5-12, 5-13, 5-15 & 5-16. Problems 17-4, 17-5, 17-7 & 17-8.
11-13	Introduction to Decision Tree analysis *Instructor: Prof. Manit Mishra*	Text book (SFM): Ch. 17 (Page 997-1006) Reading material: Decision Tree Case: Christie's Snow Fun Ski Resort.
	Decision Tree analysis – Rollback process *Instructor: Prof. Manit Mishra*	Text book (SFM): Ch. 17 (Page 997-1006) Problems 17-25, 17-26, 17-27, 17-28, 17-29
	Decision Tree analysis – Comprehensive application *Instructor: Prof. Manit Mishra*	Text book (SFM): Ch. 17 (Page 997-1006)