International Institute of Health Management Research, New Delhi

PGDHM II Year – Hospital Management

Operations Management in Hospitals (HOM-713)

Course coordinator: **Dr. Pankaj Talreja**

Subject Title: **Operations Management in Hospitals.**

Subject Code: **HOM-713**

Credit Point: **06**

Contact Hours: **60**

Subject Description

The course aims to develop skills of Operations Management techniques that would aid the prospective hospital managers in decision making. The answers to many of the dilemmas faced by the hospitals, such as increasing costs, decreasing profitability, inadequate access, and poor quality, lie within organizational operations.

The hospital arena is filled with opportunities for significant operational improvements. The subject encourages the individual, in finding ways, to improve the management and delivery of healthcare.

Manufacturing organizations have successfully employed the programs, techniques and tools of operations improvement for many years. Recently, leading hospitals have begun to employ the same tools.

Expected Learning Outcomes

Upon successful completion of the course, the students will be able to:

- Describe role of operations management in improving efficiency and effectiveness of health care delivery.
- Identify issues and problems in health services management.
- Learn the application of tools suitable for problem solving in hospitals.
- Find out how healthcare providers can offer their services more effectively and efficiently by better utilizing limited resources like financial assets, employees and staff, machines and facilities, and time.

Teaching Methods

The class will use following formats:

- Lecture format.
- Assignments.
- Presentations.
- Cases and exercises.

Mode of Delivery

The course will be delivered through a mix of approaches. The subject will comprise classroom teaching and class exercises. Students are provided with the basic module related to the course. Cases will be discussed in the class. All students are required to submit individual assignment on topics assigned to them.

Course Material

All basic reading materials are given in the course pack, distributed before the course starts. Students are required to read the assigned course material of each day, before they are discussed in the class.

Course Contents

Week	Hours	Units	Content
1	6	1	**Introduction to Operations Management** a. Knowledge based management. b. History of Operations Management.
	6	2	**Healthcare Facility Location** a. Need of location analysis and location methods. b. CVP Analysis, Factor Rating, Center of Gravity Method, Geographic Information Systems (GIS) in Healthcare.
	6	3	**Healthcare Facility Layout** a. Various Layout methodologies and their applications to healthcare facilities. b. Product layout, Process layout, tools of process layout, fixed position layouts.
	6	4	**Project Management through PERT/CPM in Healthcare Operations** a. Need of project management and its use for administrative and clinical operations. b. Evaluate projects with PERT/CPM techniques. c. Recognize risk in project completion, and develop probabilistic methods. d. Describe the concept of project compression. e. Evaluate the cost / benefit of project compression.

Week	Hours	Units	Content
	6	5	**Resource Allocation through LPP** a. Linear Programming, Maximization & Minimization cases. b. Integer Linear Programming, Branch & Bound Method.
2	6	6	**Applications of LPP in assignment and Transportation problems** a. Mathematical model, Hungarian Method for solving Assignment problem. b. Mathematical model of transportation problem, Test for Optimality.
	6	7	**Forecasting in Healthcare Operations** a. Forecasting Approaches, Accuracy of Forecasts.
	6	8	**Queuing Analysis in Healthcare Operations** a. Queuing System Characteristics, Measures of queuing system performance. b. Capacity Analysis and costs.
	6	9	**Simulation and its applications in Healthcare Services.** a. Concept of Simulation and its uses in healthcare services. b. Monte Carlo Simulation Method. c. Simulation of health clinic, Inventory, Queuing, Maintenance etc. problems.
	6		**Cases / Exercises.**

Assessment

The students will be assessed by a written examination, assignments, presentations etc. The distribution of marks will be as follows:

Assignments, Presentations: 30%
Final written examination : 70%

Readings Materials / References

IIHMR Course Material: The reading package has been compiled from various sources (internet, articles, and books). The contents have been slightly modified whenever necessary. The package is expected to provide the students with basic understanding. For detailed exposure the following text books can be referred:

- Jan Vissers and Roger Beech, "Health Operations Management", First published 2005, Routledge, New York, USA.
- Ronen Boaz, Pliskin Joseph S., "Focused Operations Management for Health Services Organizations", First Edition 2006, John Wiley & Sons, San Francisco, USA.
- McLaughlin Daniel B., Hays Julie M, "Healthcare Operations Management", First Edition 2008, Health Administration Press, Chicago, AUPHA Press, Washington DC, USA.
- Vohra N D., "Quantitative Techniques in Management", 4th Edition 2010, Tata McGraw Hill Publishing Company Limited, New Delhi.
- Aswathappa K., Shridhara Bhatt, "Production & Operations Management", Second Revised Edition 2008, Reprint 2012, Himalaya Publishing House, Mumbai.
- Bedi Kanishka, "Production & Operations Management", Third Impression 2008, Oxford University Press, New Delhi.
- Chase B.Richard, Jacobs Robert F., Acquilino J.Nicholas, "Operations Management for Competitive Advantage", Tenth Edition 2003, Tata McGraw Hill Publishing Company Limited, New Delhi.
- Krajewski J. Lee, Ritzman P. Larry, "Operations Management – Processes and Value Chains" 7th Edition (2006), Pearson Education, Delhi.
- Mulhemann Alan, Oakland John, Lockyer Keith, Sidhir Bodduluri, Katyayani Jasti, "Production & Operations Management" First Impression, Indian Subcontinent Adaptation, 2008, Pearson Education, Delhi.
- Ozcan A. Yasar, "Quantitative Methods in Healthcare Management Techniques and Applications", 2nd Edition 2009, John Wiley & Sons, USA.