



PONTIFICAL CATHOLIC UNIVERSITY OF RIO DE JANEIRO
CENTRE OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF INDUSTRIAL ENGINEERING

IND 2620 HEALTHCARE OPERATIONS MANAGEMENT

TOTAL HOURS: 45

CREDITS: 3 /CRITERIA 12

REQUIREMENT(S): ----

GOALS	To apply operations management techniques and methods, such as optimization, discrete event simulation, statistics, machine learning and process mining, to solve real problems of healthcare organizations (hospitals, clinics, laboratories).
SYLLABUS	Healthcare Operations Management concepts; Operations Management tools and software; Statistics and Machine Learning applied to disease analysis; Applications to real cases in healthcare organizations.
PROGRAM	Healthcare systems, Brazilian and international perspectives; Supply Chain management of drugs and medication; Hospital inventory management; Demand forecasting; Capacity sizing (beds, physicians, nurses, equipment, operating rooms); Planning and Scheduling of healthcare operations; Optimal medical appointment scheduling; Cost-effectiveness analysis in healthcare; Applications of machine learning to disease prediction; Clinical pathways; Applications of process mining to healthcare operations.
BIBLIOGRAPHY	Ozcan, Yasar A. <i>Quantitative methods in health care management: techniques and applications</i>. Vol. 4. John Wiley & Sons, 2005. Denton, Brian T. <i>Handbook of healthcare operations management</i>. Springer, 2013. Hulshof, Peter JH, Nikky Kortbeek, Richard J. Boucherie, Erwin W. Hans, and Piet JM Bakker. "Taxonomic classification of planning decisions in health care: a structured review of the state of the art in OR/MS." <i>Health systems</i> 1, no. 2 (2012): 129-175.
COMPLEMENTARY REFERENCES	Scientific papers to be distributed to students.