SUBJECT NO-BM60130, SUBJECT NAME- HEALTHCARE ANALYTICS

LTP- 24,CRD- 2.4

SYLLABUS :-

HEALTHCARE ANALYTICS (Elective) 2-0-0 (2 credits) Introduction: Healthcare analytics consists of the systems, tools, and techniques that help healthcare organizations gain insight into current performance, and guide future actions, by discerning patterns and relationships in data and using that understanding to guide decision making. This course has been designed with an understanding that the real value of analytics occurs when the insight generated through analytics can be used directly by quality improvement teams, frontline staff, and other healthcare professionals to improve the quality and efficiency of patient care. Objective: This course explores how the clinical, business, quality improvement, and technology professionals within healthcare organizations can leverage the power of analytics to achieve the goal of safe, effective, and efficient patient care. Analytics can assist them in better policy formulation, designing incentives, developing preferences, and supporting critical decisions by providing the right information to the right people, at the right time, in the right format, with the right technology. S. No Topics Description 1 Fundamentals of Healthcare Analytics iii. The Analytics Information Gap between Quality Improvement (QI), IT, and Healthcare Leadership iv. How Analytics Can Improve Decision Making v. Analytics, Quality, and Performance vi. Applications of Healthcare Analytics vii. Components of Healthcare Analytics 2 Developing an Analytics Strategy Effective analytics strategy framework for Quality/Performance Improvement 3 Healthcare Quality and Value Measuring Quality and Value, Decision support to quality improvement methodologies (PDSA, Lean, and Six Sigma) 4 Data Quality and Governance Access to the high-quality data, Different types of data 5 Preparing Data for Analytics Important methods of summarizing and understanding data, How data type affects the kind of analysis 6 Developing and Using Effective Indicators How to convert data into metrics and indicators to monitor and evaluate performance and quality 43 S. No Topics Description 7 Monitoring Quality and Performance Statistical and graphical methods for monitoring quality and performance, detecting changes in performance or quality 8 Presentation and Visualization of Information Dashboards for Quality and Performance Improvement Providing Accessibility to and Ensuring Usability of Analytics Systems 9 Cost estimation and pricing decisions Cost drivers, Cost allocation, Pricing a particular service 10 Risk Assessment and insurance Risk characterization, Healthcare Insurance 11 Customer Analytics Identifying customer segments that reliably predict some clinical, financial, and/or commercial concerns Designing best promotional response based on web site traffic, physicians prescription volume, and call centre data 12 Advanced Analytics in Healthcare Agent Based Models for emergency care Analytic Epidemiology for preventive care Modeling disease propagation in a community Patient classification KMS for healthcare decisions 13 Addressing data privacy and security concerns Types of leadership and management required, Building Effective Analytical Teams References:

Healthcare Analytics for Quality and Performance Improvement, Trevor L. Strome, Published by John Wiley and Sons, Inc., Hoboken, New Jersey. 2013 Health Analytics: Gaining the Insights to Transform Health Care, Jason Burke, Published by John Wiley and Sons, Inc., Hoboken, New Jersey. 2013 Fundamentals of healthcare finance, Louis C. Gapenski, Health Administration Press, Chicago, 2009