COURSE NAME:	Health Care Data Management
TOTAL DURATION:	45 Hrs
MODE OF DELIVERY	PHYSICAL CLASSROOM TRAINING AT RESPECTIVE COLLEGES
TRAINER TO STUDENT RATIO:	1:50
TOTAL MARKS:	75

Table 1	
OVERALL COURSE OBJECTIVE:	1. Formulate innovative strategies for enhancing hospitality and tourism services to meet evolving consumer demands and global trends. 2. Develop comprehensive event planning and management frameworks that integrate customer experience, resource optimization, and marketing strategies. 3. Evaluate the effectiveness of customer relationship management systems in achieving operational excellence and client satisfaction. 4. Propose sustainable tourism models by aligning eco-friendly practices with industry best standards. 5. Construct marketing campaigns that use data insights and creative advertising to achieve targeted growth in the hospitality sector.

LEARNING OUTCOME:	1. Evaluate healthcare data sources for effective management and compliance. 2. Organize and clean healthcare datasets for reliable analysis 3. Develop visualizations and dashboards to communicate healthcare insights effectively 4. Create predictive models to address operational inefficiencies. 5. Recommend policy and operational improvements based on data-driven insights.

TABLE 2: MODULE WISE COURSE CONTENT AND OUTCOME				
SL. NO	**MODULE NAME**	**MODULE CONTENT**	**MODULE LEARNING OUTCOME**	**DURATION (HRS)**
1	Foundations of Healthcare Data	Key concepts of healthcare data management, including data sources, integration, and ethical considerations.	Categorize and evaluate diverse healthcare data sources while ensuring compliance with legal and ethical standards.	9
2	Data Cleaning and Integration	Advanced techniques for cleaning, integrating, and preparing datasets for healthcare analytics.	Organize and prepare datasets for meaningful analysis, ensuring accuracy and consistency across various sources.	9
3	Exploratory Data Analysis and Visualization	Techniques for visualizing healthcare data, identifying trends, and presenting data effectively.	Develop dashboards and visualizations that effectively communicate trends and actionable insights in healthcare data.	9
4	Predictive Analytics and Modeling	Statistical modeling, predictive analysis, and AI applications in healthcare.	Create predictive models to evaluate performance metrics like patient outcomes and resource utilization.	9
5	Policy Design and Practical Applications	Practical application of insights for decision-making, policy recommendations, and process optimization in healthcare settings.	Recommend policies and implement strategies to enhance operational efficiency and align with healthcare goals.	9

TABLE 3: OVERALL COURSE LEARNING OUTCOME ASSESSMENT CRITERIA AND USE CASES			
LEARNING OUTCOME	**ASSESSMENT CRITERIA**	**Performance Criteria**	**USE CASES**
Evaluate healthcare data sources for effective management and compliance.	Identify and validate data sources.	Demonstrates understanding of data sources and adherence to regulatory standards.	Case Study: Validate data from multiple healthcare systems for compliance with HIPAA and other legal requirements.
Organize and clean healthcare datasets for reliable analysis.	Perform data cleaning and integration tasks.	Produces consistent, error-free datasets ready for analysis.	Use Case: Clean and merge patient admission records from different hospitals.
Develop visualizations and dashboards to communicate healthcare insights effectively.	Create dashboards and trend visualizations.	Creates interactive visualizations and dashboards with clear, actionable insights.	Use Case: Build a dashboard showing trends in chronic disease management.
Create predictive models to address operational inefficiencies.	Apply statistical and AI techniques for prediction.	Delivers accurate and reliable predictive models tailored to healthcare metrics.	Use Case: Predict patient no-shows for improved resource planning.
Recommend	Design	Proposes impactful	Case Study:

policy and operational improvements based on data-driven insights.	actionable strategies for healthcare improvement.	strategies supported by clear data insights.	Recommend scheduling policies to reduce bottlenecks in outpatient clinics.

TABLE 4: LIST OF FINAL PROJECTS (PROJECTS THAT COMPREHENSIVELY COVER ALL THE LEARNING OUTCOME)	
SL.NO	**FINAL PROJECT**
1	Get well soon hospital is concerned about decreasing no of inpatients month on month. You are requested to study the patient's admission and discharge data for last 12 months and give an opinion on the following • Is the no of patients coming to hospital is really coming down • Are the patients going to a competitor hospital • Is the general increase in health parameters of the people making less inpatients to the hospital
2	Get Well Soon Hospital is concerned about new cases getting admitted with respiratory diseases. The patients with respiratory disease occupy important critical beds which are kept for surgical patients which are more revenue earning and can benefit the society. Get well soon Hospitals provided 3 months investigations report data, and requested your opinion on following – • Is there higher incidence of the new viral disease • If yes, How many months the patients would be flooding with the same disease • Is there a need to add additional beds for these patients in order not to disturb routine operations • What would be the peak load and when it is expected, • When can the inflow be plateaued and start down trend
3	Using tools and calculations you are requested to forecast 30-day all-cause readmission, in-hospital mortality, comorbidity index, length of stay, and insurance denials using unaltered electronic

	health record (EHR) data.
4	Get well soon hospital is worried about appointment no-shows which are increasing significantly. You are requested to present • Probable reasons • Predict the number to enable additional appointments for walkin patient • Ways to combat the same • Technological tools • Suggested ways to make payment mandatory

TABLE 5: COURSE ASSESSMENT RUBRICS (TOTAL MARKS: 75)					
ASSESSMENT CRITERIA	**Learning Outcome**	**Fair (1–5)**	**Good (6–10)**	**Excellent (11–15)**	**TOTAL MARKS**
Healthcare Data Integration	Evaluate and integrate diverse data sources.	Identifies data sources with limited validation.	Validates and integrates data with minor inconsistencies.	Demonstrates seamless integration and regulatory compliance.	15
Data Cleaning and Preparation	Organize and clean datasets for analysis.	Cleans data with basic methods.	Prepares datasets with consistent formatting and few errors.	Produces error-free, well-prepared datasets for advanced analysis.	15
Dashboard Creation and Visualization	Develop meaningful visualizations for healthcare insights.	Creates basic visualizations with limited insights.	Delivers functional dashboards with detailed trends.	Produces high-quality dashboards showcasing actionable insights.	15
Predictive	Apply	Develops basic	Creates	Designs	15

Analytics	predictive modeling to improve healthcare operations.	models with limited predictive accuracy.	functional predictive models with practical utility.	accurate, complex models for real-world healthcare challenges.	
Policy Recommendations	Propose data-driven operational improvements.	Provides basic policy recommendations.	Suggests feasible, data-supported strategies.	Recommends innovative, impactful policies supported by comprehensive data insights.	15