INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
Dundigal - 500 043, Hyderabad, Telangana

COURSE CONTENT

HR METRICS AND ANALYSIS LABORATORY								
IV Semester: MBA								
Course Code	**Category**	**Hours / Week**			**Credits**	**Maximum Marks**		
CMBE59	**Elective**	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
		-	-	4	2	40	60	100
Contact Classes: Nil	**Tutorial Classes: Nil**	**Practical Classes: 40**				**Total Classes: 40**		
Prerequisite: Human Resource Management								
SDGs Mapped: SDG 9 (Industry, Innovation and Infrastructure), SDG 8 (Decent Work & Economic Growth)								

I. COURSE OVERVIEW:
This lab provides hands-on training in applying HR analytics tools and techniques to real-world HR data. Students will learn to collect, clean, and analyze workforce data using Excel/SPSS, apply HR metrics, and build dashboards. The course emphasizes descriptive, diagnostic, predictive, and prescriptive analytics for effective HR decision-making.

II. COURSE OBJECTIVES:
The students will try to learn:

I. Introduce students to HR analytics frameworks, models, and tools.
II. Develop skills in HR data collection, cleaning, and preparation.
III. Enable computation and interpretation of key HR metrics.
IV. Provide practical exposure to descriptive, diagnostic, predictive, and prescriptive HR analytics techniques.
V. Apply visualization and reporting methods for effective HR decision-making.

III. COURSE OUTCOMES:
At the end of the course students should be able to:

CO1 Demonstrate understanding of HR analytics concepts, frameworks, and models.

CO2 Organize, clean, and validate HR datasets using Excel/SPSS.

CO3 Compute, analyze, and interpret key HR metrics for workforce management.

CO4 Apply statistical methods to diagnose HR issues and predict workforce trends.

CO5 Develop HR dashboards and visualization reports for decision support.

CO6 Integrate descriptive, diagnostic, predictive, and prescriptive analytics to solve HR problems.

IV. COURSE CONTENT:

EXPERIMENT – 1: INTRODUCTION TO HR ANALYTICS
MS - EXCEL/SPSS: Introduction, uses, functions and Excel for HR data organization. Overview of HRM, HCM, and HR Analytics, business impact, and levels of analytics.

EXPERIMENT – 2: HR ANALYTICS MODELS – I
Applying LAMP Model and HC Bridge Model to sample HR datasets using Excel. Mapping metrics to HR analytics frameworks.

EXPERIMENT – 3: HR ANALYTICS MODELS – II
Application of Bersin's HR Analytics Maturity Model and HR Value Chain Model for workforce data. Using Excel for visualization and reporting.

EXPERIMENT – 4: DATA COLLECTION & CLEANING
Capturing HR data, identifying types/scales, cleaning datasets, handling missing values, and validation using Excel/SPSS.

EXPERIMENT – 5: HR METRICS COMPUTATION – I
Computing key HR metrics: Turnover Rate, Absenteeism Rate, Time-to-Hire, Cost-per-Hire using spreadsheet formulas.

EXPERIMENT – 6: HR METRICS COMPUTATION – II
Computing metrics for Training Effectiveness, Performance Ratings, Employee Engagement, and Compensation using Excel formulas.

EXPERIMENT – 7: DESCRIPTIVE HR ANALYTICS
Building HR dashboards using Pivot Tables, slicers, and charts in Excel. Visualizing recruitment, performance, and engagement metrics.

EXPERIMENT – 8: DIAGNOSTIC HR ANALYTICS – I
Root cause analysis for employee attrition and absenteeism. Hypothesis testing using Chi-square in Excel/SPSS.

EXPERIMENT – 9: DIAGNOSTIC HR ANALYTICS – II
Correlation analysis and simple linear regression to analyze relationships between HR metrics (e.g., training vs performance).

EXPERIMENT – 10: PREDICTIVE HR ANALYTICS – I
Multiple regression analysis to predict employee attrition, satisfaction, or performance using Excel/SPSS/R.

EXPERIMENT – 11: PREDICTIVE HR ANALYTICS – II
Factor analysis and cluster analysis for workforce segmentation and understanding employee demographics.

EXPERIMENT – 12: ANALYSIS OF VARIANCE (ANOVA)
Comparing means of HR metrics across departments, locations, or job levels using one-way ANOVA in Excel/SPSS.

EXPERIMENT – 13: PRESCRIPTIVE HR ANALYTICS – I
Decision trees for HR interventions (e.g., retention strategies), scenario planning using Excel What-If analysis.

EXPERIMENT – 14: PRESCRIPTIVE HR ANALYTICS – II
Integrated case study: end-to-end HR Analytics project using descriptive, diagnostic, predictive, and prescriptive techniques. Reporting insights via dashboards in Excel/Tableau/Power BI.

V. SOFTWARE / SPREADSHEET TOOLS:

1. Microsoft Excel: https://www.microsoft.com/en-us/microsoft-365/excel
2. Google Sheets: https://www.google.com/sheets/about/

3. SPSS: https://www.ibm.com/products/spss-statistics
4. R: https://www.r-project.org/
5. Python: https://www.python.org/
6. Tableau: https://www.tableau.com/
7. Power BI: https://powerbi.microsoft.com/

VI. TEXTBOOKS:

1. Marler, J. H., & Boudreau, J. W., *An Evidence-Based Review of HR Analytics*, Routledge, 2017.
2. Angrave, D., *HR Analytics: Understanding People Better*, Kogan Page, 2016.
3. Levenson, A., *Strategic Analytics: Advancing Strategy Execution and Organizational Effectiveness*, Wiley, 2018.

VII. REFERENCE BOOKS:

1. Fitz-enz, J., *The New HR Analytics: Predicting the Economic Value of Your Company's Human Capital*, AMACOM, 2010.
2. Becker, B., & Huselid, M., *HR Analytics: Insights for Strategic Human Resource Management*, Harvard Business Review, 2018.
3. Davenport, T. H., Harris, J., & Shapiro, J., *Competing on Talent Analytics*, Harvard Business Review, 2010.

VIII. WEB REFERENCES:

1. https://www.peoplemattersglobal.com
2. https://www.shrm.org/resourcesandtools/hr-topics/technology/pages/hr-analytics.aspx
3. https://www.analyticsvidhya.com