ST. ALOYSIUS COLLEGE(AUTONOMOUS), JABALPUR

Reaccredited 'A+ 'Grade by NAAC(CGPA:3.68/4.00)
College with Potential for Excellence by UGC
DST-FIST Supported & STAR College Scheme by DBT

Faculty of Commerce
Bachelor of Commerce
B. Com VI Semester
Elective- BUSINESS ANALYTICS

Course Outcomes

CO. No.	Course Outcomes	Cognitive Level
CO1	Understand the basic concepts and interdisciplinary nature of AI.	U
CO2	Analyze the importance of data quality and techniques for dealing with missing or incomplete data.	An
CO3	Apply exploratory data analysis (EDA), data wrangling, and feature engineering techniques in business scenarios.	A
CO4	Implement machine learning algorithms, including classification, clustering, and association, to solve business problems using Python.	A
CO5	Apply predictive analytics techniques, such as correlation, linear regression, and time series analysis, to real-world business forecasting problems.	A

Credit and Marking Scheme

	Credits	Marks		Total Marks
		Internal	External	
Theory	4	40	60	**100**
Practical	2	40	60	**100**
Total	**6**			**200**

Evaluation Scheme

	Marks	
	Internal	External
Theory	3 Internal Exam of 20 Marks During the Semester	1 External Exam end of the Semester
Practical	3 Internal Exam during the semester	1 External Exam end of the semester

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Content of the Course

Theory

No. of Lectures (in hours per week): 2 Hrs. per week

Total No. of Lectures: 45   **Maximum Marks:** 60

Units	Topics	No. of Lectures
I	**Introduction to Business Analytics:** Concept of analytics and Artificial Intelligence, AI in business, Application fields - Marketing Analytics, Finance Analytics, HR Analytics, Operation Analytics, organization and source of data, Social Networking Analysis.	8
II	**Introduction of machine learning and its types, ETL Process, Data Cleaning** importance of data quality, dealing with missing or incomplete data, machine learning techniques in business, Association rule mining, Apriori algorithm , Frequent pattern mining.	8
III	**Predictive modelling in business**: Basic concept of classification:- Naïve Bayes, Decision tree, linear regression and correlation, Introduction to clustering :- K Means, Hierarchical . Introduction to business analysis using python:- Data types, List, Dictionary , tuple, Operators in Python, Control statements, strings, Functions in Python.	10
I V	Data visualization using matplotlib, numpy, mathematical and logical operations on Numpy ,Python date and time functions Pandas, creating dataframes, creating series, operations with dataframe and series NLP used in business, case studies	10
V	Data Wrangling , Data Web Scraping, Python processing with unstructured data, introduction to NLP techniques, Word tokenization , stemming and lemmatization, parts of speech using NLTK, applications of NLP in business.	9

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References

Text Books:

1. Turban E, Armson, JE, Liang, TP &Sharda, Decision support and Business Intelligence Systems, 8th Edition, John Wiley & Sons, 2007
2. Frank J. Ohlhorst, Big Data Analytics, 1st Edition, Wiley, 2012.
3. Efraim Turban, Ramesh Sharda, Jay Aronson, David King, Decision Support and Business Intelligence Systems, 9th Edition, Pearson Education, 2009.

Essential Reading / Recommended Reading

- Microsoft Office 2007 Business Intelligence- Reporting, Analysis, and Measurement from the Desktop, Doug Harts, TATA McGraw-Hill Edition, 2008
- Data Mining for Business Intelligence: Concepts, Techniques, and Applications in Microsoft Office Excel with XLMiner, GalitShmueli, Nitin R. Patel, Peter C. Bruce, Wiley Publication, 2010
- The New Science of Retailing: How Analytics are Transforming the Supply Chain and Improving Performance, Ananth Raman, Marshall Fisher, HBR Book Press, 2010
- Data Mining: Concepts and Techniques", Morgan Kaufmann Publication, 3rd Edition, 2011.
- Decision Support and Business Intelligence Systems, Turban, E., Aronson, JE., Liang, T. Sharda R, Prentice Hall Publisher, 10th Edition, 2011
- Data Science for Business – What you need to know about data mining and data-analytic thinking, Foster Provost, Tom Fawcelt, O' Reilly Media Publication, 2013
- IDEA from CASEWARE

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List of Practical

1. Clean a dataset by handling missing values, removing duplicates, and creating new features using Pandas.
2. Create a bar chart to compare the sales of different products.
3. Create a pie chart to show the market share of different companies.
4. Apply and create frequent patterns and association rules using apriori (case study)
5. Apply k-means clustering in python
6. Conduct sentiment analysis on product reviews, classifying them as positive, negative, or neutral using NLTK and Scikit-learn.
7. Use linear regression to predict a business outcome (e.g., sales) and analyze the relationships between variables.