ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

V SEMESTER **COMMERCE** Time:3Hrs

COM-E1-5303(3) **BIG DATA ANALYTICS USING R** Max.Marks:100

w.e.f. 20AH Batch **SYLLABUS**

**COURSE OBJECTIVES:**

* To learn about storage, processing and retrieval of big data
* It focuses on technologies that are available for storage processing in big data.
* To perform a variety of analytics on different data sets.

**COURSE OUTCOMES: upon successful completion of the course, a student will be able to:**   
1. Understand data and classification of digital data.  
2. Understand Big Data Analytics.  
3. Load data in to R.   
4. Organize data in the form of R objects and manipulate them as needed.  
5. Perform analytics using R programming.

**UNIT–I: Introduction to Big data** :Data, classification Of Digital Data--structured, unstructured, semi-structured data, characteristics of data, evaluation of big data, definition and challenges of big data, what is big data and why to use big data ?, business intelligence Vs big data.

**UNIT–II: Big data Analytics**: What is and isn’t big data analytics? Why hype around big data analytics? Classification of analytics, top challenges facing big data, importance of big data analytics, technologies needed to meet challenges of big data.

**UNIT–III: Introduction to R and getting started with R** : What is R? Why R? , advantages of R over other programming languages, Data types inR-logical, numeric, integer, character, double, complex, raw, coercion, ls() command, expressions, variables and functions, control structures, Array, Matrix, Vectors, Rpackages.

**UNIT–IV: Exploring data in R**:Data frames-data frame access, ordering data frames, R functions for data frames dim(),nrow(), ncol(), str(), summary(), names(), head(), tail(), edit(). Load data frames—readingfrom .CSV files, sub setting data frames, reading from tab separated value files, reading from tables. P.T.O.

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**UNIT – V: Data Visualization using R**: Reading and getting data into R (External Data): XML files, Web Data, JSON files, Databases, Excel files. Working with R Charts and Graphs: Histograms, Bar Charts, Line Graphs,Scatterplots, Pie Charts.

**BOOKS:-**

1. Seema Acharya ,SubhashiniChellappan --- Big Data And Analytics secondedition, Wiley.

2. Seema Acharya--Data Analytics using R, McGraw Hill education (India) Private Limited.

3. Big Data Analytics, Introduction to Hadoop, Spark, and Machine-Learning, Raj kamal,PreetiSaxena, McGraw Hill, 2018.

4. Big Data, Big Analytics: Emerging Business intelligence and Analytic trends for Today's Business, Michael Minelli, Michelle Chambers, and AmbigaDhiraj, John Wiley & Sons,2013

**Reference Books:**-  
1. An Introduction to R, Notes on R: A Programming Environment for Data Analysis and Graphics. W. N. Venables, D.M. Smith and the R Development Core Team.

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