Guidelines for UGCF-NEP 2020 B.Com.(H)
Paper: Business Analytics (DSC- 6.1)
Semester-VI

Jointly Organized By

Department of Commerce, Delhi School of Economics, University of Delhi

and

Dr. Bhim Rao Ambedkar College (University of Delhi)

Date: November 25, 2024

MINUTES

An online meeting was held on 25th November 2024 at 4:00 PM on Google Meet Platform (Meeting link: https://meet.google.com/gfs-jejz-pyc) to prepare the Guidelines UGCF-NEP 2020 curriculum-based paper titled "Business Analytics" of B. Com. (H) Paper No. DSC- 6.1, Semester-VI, jointly organized by Department of Commerce, Delhi School of Economics, University of Delhi and Dr. Bhim Rao Ambedkar College under the initiative of *Department College Interface*. The advance notice of the meeting was served through a mail to all the College Principals of University of Delhi.

The meeting was attended by 42 teachers from different colleges of University of Delhi on the scheduled date and time through the above given link. The meeting was convened by Prof. Mohnish Kumar, Dr. Bhim Rao Ambedkar College, University of Delhi and presided over by Prof. H. K. Dangi, as a representative from the Department of Commerce, Delhi School of Economics, University of Delhi. The following members across various DU colleges were present during the meeting:

S No.	Name	College
1	Prof. Hamendra Dangi	Department of Commerce, DSE
2	Prof. Mohnish Kumar	Dr. Bhim Rao Ambedkar College
3	Dr. Arun Julka	Maharaja Agrasen College
4	Dr. Manju Bhatia	Sri Guru Gobind Singh College of Commerce,
5	Mr. Bal Kishan	Shri Ram College of Commerce
6	Ms. Rasleen Kaur	Sri Guru Gobind Singh College of Commerce,
7	Sheetal Aggarwal	Lakshmibai College
8	Prof. Harvinder Kaur	SGGCCC
9	Anil Kumar	Shri Ram College of Commerce
10	Dr. Namita Aggarwal	Gargi College

11	Dr. Archana Agarwal	Sri Aurobindo College (Evening)
12	Mohini Yadav	Sri Venkateswara College
13	Barun Kumar Jha	ARSD College
14	Dr Soma Garg	Maharaja Agrasen College
15	Dr. Neha	Maitreyi College
16	Dr. Suzanee Malhotra	Maitreyi College
17	Ms. Soumya Sharma	Vivekananda College
18	Ravinder	Satyawati College
19	Ms. Al Huda	Satyawati College (M)
20	Mohit Saini	Deen Dayal Upadhyaya college
21	Dr. Rajneesh Prakash Verma	Indraprastha College for Women
22	Sandeep Sehrawat	Satyawati College Evening
23	Dr. Vinod Kumar	Sri Venkateswara college
24	Dr Anita Agrawal	I P College For Women
25	Dr. Surender khan	Shyama Prasad Mukherjee Collage for Women
26	Deepak Verma	Deshbandhu College
27	Dr. Payal Jain	Gargi College
28	Ms. Manleen Kaur	Sri Guru Gobind Singh College of Commerce
29	Harsh kumar	Satyawati College (M)
30	Kamna Virmani	Mata Sundri College for women
31	Ms. Jyoti Gupta	Deen Dayal Upadhyaya College
32	Sakshi Agrawal	Swami Shraddhanand College
33	Dr. Yogesh Garg	Sri Aurobindo college(M)
34	Rahul	Kamala Nehru College
35	Sandeep Sehrawat	Satyawati College Evening
36	Dr Pritika Dua	IP College for Women
37	Dr.Sivachander.G	ARSD College
38	Sakshi Agrawal	Swami Shraddhanand College (SSNC)
39	Dr. Vijay Lakshmi	Sri Aurobindo College(M)
40	Anusha Goel	SPM College for Women
41	Sakshi Vasudeva	Dr. Bhim Rao Ambedkar College
42	Dr Poonam	Bharati College

The following guidelines were set with the consent of all the Faculty Members present in the meeting and the Representative member from Department of Commerce, Delhi School of Economics, University of Delhi.

Units	Content	Added Remarks as guidelines	Lectures/ Marks
Unit 1: Introduction (3 hours)	Data and Data Science; Data analytics and data analysis, Classification of Analytics, Application of analytics in business, Types of data: nominal, ordinal, scale; Big Data and its characteristics, Applications of Big data. Challenges in data analytics.	Theory	Theory- 15 Marks
Unit 2: Data Preparation, Summarisation and Visualisation Using spreadsheet (6 hours)	Data Preparation and Cleaning, Sort and filter, Conditional formatting, Text to Column, Removing Duplicates, Data Validation, identifying outliers in the data, covariance and correlation matrix, Moving Averages, Finding the missing value from data; Summarisation; Visualisation: scatter plots, line charts, histogram, etc., Pivot Tables, pivot charts and interactive dashboards.	Practical	Practical- 10 Marks
Unit 3: Getting started with R (6 hours)	Introduction to R, Advantages of R, Installation of R Packages, Importing data from spreadsheet files, Commands and Syntax, Packages and Libraries, Data Structures in R - Vectors, Matrices, Arrays, Lists, Factors, Data Frames, Conditionals and Control Flows, Loops, Functions, and Apply family.	Theory and Practical	Theory- 10 Marks, Practical- 5 Marks
Unit 4: Descriptive Statistics Using R (6 hours)	Importing Data file; Data visualisation using charts: histograms, bar charts, box plots, line graphs, scatter plots. etc; Data description: Measure of Central Tendency, Measure of Dispersion, Relationship between variables: Covariance, Correlation and coefficient of determination.	Theory and Practical	Theory- 10 Marks, Practical- 10 Marks.
Unit 5: Predictive and Textual Analytics	Simple Linear Regression models; Confidence & Prediction intervals; Multiple Linear Regression; Interpretation of Regression Coefficients; heteroscedasticity; multi-collinearity.	Theory and Practical	Theory- 25 Marks,

(9 hours)	Basics of textual data analysis, significance, application, and challenges. Introduction to Textual Analysis using R. Methods and Techniques of textual analysis: Text Mining, Categorization and Sentiment Analysis.		Practical-15 Marks.
	Practical Exercises		
1.	Showcase their understanding of the basics of Spreadsheet: Organizing data with Spreadsheet – Performing simple computations and aggregations using Spreadsheet - Working with Summing and other Reporting functions in Spreadsheet - Working with pivot tables and charts -using Spreadsheet for Data Analytics: Power Query - Power Pivot - Power view - Power Map - Building tips – Display tips - Keyboard shortcuts – Mouse shortcuts - Standardized layouts - Understanding table-based and spreadsheet-based layouts.	Primarily: Spreadsheet, PowerBi / R may be used.	
2	Showcase their understanding of data cleansing techniques using External Data – Searching and Combining Data with Power Query: Getting started with Power Query - Know the Environment tabs and toolbars - Access new or existing reports - Importing and combining data from databases, web, files - Splitting and aggregating data - Discovering and Analyzing Data with Power Pivot: Database concepts - Loading Data into Power Pivot - using Power Query and Power map add-ins - Designing Pivot Table reports - Filtering data – Creating Custom functions and formulas - Formatting Pivot Tables - Managing Power Pivot Data - Setting Connection properties - Managing Data sources - Configuring Pivot Table Options, Preparation of Histograms - Pareto charts – Boxplots – Treemap and Sunburst charts.	Primarily: Spreadsheet, PowerBi / R may be used.	
3	Create Linear Regression Models using Spreadsheet; Interpretation of results. Applying tests for heteroscedasticity and multicollinearity.	Create Linear Regression Models using Spreadsheet / R	
4	Read datasets into R - Export data from R - Manipulate and Process Data in R -use functions and packages in R - Demonstrate with a Case Study to perform basic analytics using R.		

5	Use R for analysing textual data; Data loading into Python; Pre-processing and Text Clean up; Generating a TF-IDF (Term Frequency Inverse Document Frequency) Matrix; Data Clustering; visualisation & Reporting.	Data loading into Python / R.	

Note: Guidelines for Question Paper setting and evaluation:

1. The End term Theory Exam- 60 Marks, Internal Assessment (IA) – 20 Marks, Continuous Assessment-20 Marks (Practical File), the End term Practical Exam- 40 Marks, Viva-Voce- 20 Marks.
2. In theory question paper, one short answer compulsory question with internal choice may be asked in the form of MCQ or true/ false question with reasons.
3. It is advised to have a soft copy of all assignments for Continuous Assessment part of evaluation of students.
4. In practical question paper, one compulsory data visualization / dashboard question of 10 marks would be asked. The students are supposed to answer 3 questions out of remaining 5 questions of 10 marks each. There may be a subdivision of question to incorporate every aspect of the syllabus.

All the faculty members participated actively in the deliberation while providing useful suggestions, and appreciated the timely initiative of Prof. A. K. Singh, the HOD and Dean, Department of Commerce and expressed sincere thanks to Dr. Sonal Thukral (Department of Commerce) and Dr. Kiran Bala (Department of Commerce), for the interest shown by them in executing this meeting. Special thanks were expressed to Prof. Sada Nand Prasad, Principal, Dr. Bhim Rao Ambedkar College for being a facilitator in holding the meeting.

The meeting ended with a vote of thanks to Prof. Sada Nand Prasad, Principal of the Dr. Bhim Rao Ambedkar College, Prof. H. K. Dangi, Representative, Department of Commerce, Delhi School of Economics, and Prof. Mohnish Kumar, Dr. Bhim Rao Ambedkar College (University of Delhi).

Mohnish Kumar 9/12/24

(Prof. Mohnish Kumar)
Convenor of the Meeting
Commerce Department,
Dr. Bhim Rao Ambedkar College
(University of Delhi), Delhi-94.

(Prof. H. K. Dangi)
Representative
Department of Commerce
Delhi School of Economics
University of Delhi, Delhi-7

System No..... College Roll No.....Date of Exam:..... Q. Paper's Code/Set No.:.....

University of Delhi: Semester VI-April/May Examination 202..

Academic Year 2024-2025 and onwards: B. Com. (Hons.) 3rd Year [NEP 2000]

Name of the college.....

Paper – DSC 6.1: Business Analytics

EVALUATION SHEET

External Examiner's Name : **Code** :

Internal Examiner's Name: **Code** :

Name of the candidate : **Univer. Exam. Roll No.** :

S. No.	Descriptions	Max. Marks	Marks Obtained
1	**DATA VISUALIZATION (10 Marks)** Scatter plots, line charts, histogram, Pareto charts, Boxplots, Tree-map and Sunburst charts etc., Interactive Dashboard,	10	
2a	**Introduction to R (5 Marks)** Importing Data file, Data Preparation and Cleaning, Data Summarisation, Data description, Relationship between variables	5	
2b	**REGRESSION (5 Marks)** Create Linear and Multiple Regression Models; Interpretation of results. Applying tests for heteroscedasticity and multicollinearity.	5	
3	**SPREADSHEET** Data Organization, Data Summary, Data Reporting, Pivot table and Charts, etc.	10	
4	**POWER QUERY AND POVER PIVOT (10 Marks)** Data cleansing techniques using External Data-Searching and Combining Data with Power Query, Analysing Data with Power Pivot, Power view, Power Map, Power Pivot Data	10	
5	**TEXTUAL ANALYSIS (10 Marks):** Use R for analysing textual data; Pre-processing and Text Clean up; Generating a TF-IDF (Term Frequency Inverse Document Frequency) Matrix; Data Clustering; visualisation & Reporting. Methods and Techniques of textual analysis: Text Mining, Categorization and Sentiment Analysis.	10	
6	**CONTINUOUS ASSESSMENT**	20	
7	**VIVA-VOCE**	20	
	Grand Total	80	
	In Words:		

Note: Marks in Total are required to be given under each head(s). Individual marking of items are not needed.

Signature of evaluators:

Internal Examiner **External Examiner**