HSNC UNIVERSITY, MUMBAI

(2025-2026)

Ordinances and Regulations With

Respect to

Choice Based Credit System

(CBCS)

For the Programmes Under

The Faculty of Science and Technology

Framed According to the National Education Policy (NEP 2020)

To be implemented from Academic Year: 2025-2026

For the Course

Computer Systems & Applications

Curriculum – Third Year Undergraduate

Semester-V and Semester -VI

2025-2026

HSNC UNIVERSITY, MUMBAI

Board of Faculty of Science & Technology

Board of Studies in the Subjects of Statistics

1) Name of Chairperson/Co-Chairperson/Coordinator:-

a) Dr Asha Jindal, Professor and (UG: Head &PG: Coordinator), Department of Statistics, K. C. college, HSNC University Churchgate, Mumbai –400 020. Email ID- asha.jindal@kccollege.edu.in Mobile no- 9821235627

2) Two to five teachers each having minimum five years teaching experience amongst the full time teachers of the Departments, in the relevant subject.

a) **Dr. S. B. Muley,** Associate Professor, Department of Statistics, K. C. college, HSNC University Churchgate, Mumbai – 400 020. Email ID sakharam.muley@kccollege.edu.in , Mobile No- 9323817918

b) **Mrs. Pratiksha Kadam,** Associate Professor, Department of Statistics, K. C. college, HSNC University Churchgate, Mumbai – 400 020. Email ID pratiksha.kadam@kccollege.edu.in , Mobile No- 7507162816

c) **Ms. Shailaja Rane,** Assistant Professor, Department of Statistics, K. C. college, HSNC University Churchgate, Mumbai – 400 020. Email ID shailaja.rane@kccollege.edu.in, Mobile No- 7506986359

d) **Mr. Yunus Gangat**, Assistant Professor, H. R. College, HSNC University, Mumbai, Email ID: gangatyunus@gmail.com, Mobile no. 9892099801 **(Special Invitee)**

3) One Professor / Associate Professor from other Universities or professor / Associate Professor from colleges managed by Parent Body;

a) **Dr Anjum Ara Ahmed;** Professor and Former I/C Principal, Rizvi College, Mumbai. Email ID **anjumahmed8@gmail.com, Mobile No-** 8451046220

4) Four external experts from Industry / Research / eminent scholar in the field relevant to the subject nominated by the Parent Body;

a. **Prof. Suresh Kumar Sharma,** Senior Professor, Department of Statistics, Panjab University, Chandigarh.
Email ID ssharma643@yahoo.co.in, **Mobile No-**9815911381

b. **Mr Mukesh Jain,** Vice President and Chief Technological Officer, Capgemini. Email ID mdjain@hotmail.com, **Mobile No-**7972637347.

c. **Dr Santosh Gite,** Professor and Head, Dept. of Statistics, University of Mumbai, Mumbai. Email ID santgite@yahoo.com, **Mobile No-**9167157717.

d. **Mr Prashant Kumar Nair,** Director, Geo Spatial Analytics Global Lead, Intelligent Analytics, Nielsen Connect, Email ID prashantkumar.nair@nielsen.com , **Mobile No-**9833747057.

5. Top rankers of the Final Year Graduate and Final Year Post Graduate examination of previous year of the concerned subject as invitee members for discussions on framing or revision of syllabus of that subject or group of subjects for one year.

a) **Mr. Neel More(** (Postgraduate student 23-25) Email ID- neelmore85@gmai.com ; Mobile no- 9867374401

b) **Ms. Sarrah Pittalwala** (undergraduate student 22-25) Email ID-; sarrah,pittalwala@gmail.com; Mobile no- 9892828381

TYBCom - Semester V

Third Year Semester V Internal and External Detailed Evaluation Scheme

Sr. No.	Sem	Subject Code	Subject Title	NEP Course Type	Hours Per Week						Seasonal Evaluation Scheme (Internal + External)			Total Marks
					Units	SLE	L	T	P	Credits	SLE	PA/AT	SEE	
1.	V	STA305B	**Computer Systems & Applications - I**	DSE	3	20%	3	0	0	3	10	5	60	100
		STA305D	**Practical Based on CSA - I**						2	1			25	

Third Year Semester V - Units – Topics – Teaching Hours

S.No.	Subject Code	Subject Unit Title		Hours	Total No. of hours	Credit	Tot al Marks
1	STA305B	I	Introduction to Digital Marketing	15	45	3	100 (60+40)
		II	DBMS and MySQL Basics	15			
		III	Advanced MySQL	15			
	STA305D	IV	Practical based on STA305B	30	30	1	

Course Code:

Course Title: Computer Systems & Applications – I (DSE)

Learning Objectives

1. Recall basic concepts of Digital Marketing and Social Media Marketing.
2. Understand fundamentals of Database Management Systems and MySQL operations.
3. Apply MySQL commands to create, insert, update, and delete data.
4. Analyze different social media platforms for marketing effectiveness.
5. Evaluate the role of influencers in marketing strategies.
6. Develop basic social media marketing campaigns and simple databases

Course Outcomes

1. Define and describe Digital Marketing and Social Media Marketing concepts.
2. Explain relational and non-relational databases and MySQL structure.
3. Perform MySQL operations for table creation and data management.
4. Analyze multi-table queries and nested queries for database handling.
5. Evaluate different platforms for targeted marketing strategies.

6. Create Facebook/LinkedIn business pages, influencer plans, and database projects.

Unit	Contents	No of Lectures
I	**Introduction to Digital Marketing** **1. Introduction to Social Media Marketing** a. Definition and purpose of Social Media Marketing (SMM) Importance of SMM in the digital landscape b. Overview of different social media platforms and their significance **2. Facebook Marketing** a. Creating and managing Facebook business page Strategies for engaging with the audience on Facebook b. Utilizing Facebook advertising tools and creating effective ad campaigns **3. LinkedIn Marketing** a. Leveraging LinkedIn for business marketing and networking b. Crafting a LinkedIn marketing strategy to reach the target audience c. Lead generation techniques and content strategy on LinkedIn **4. Influencer Marketing** a. Understanding the role of influencers in social media marketing b. Identifying and collaborating with influencers to amplify brand reach and engagement **5. X Marketing (formerly Twitter Marketing)** a. Developing content strategies for X (replace X with any emerging platform) Utilizing X advertising tools for promoting businesses b. Engaging with the audience and building brand presence on X	**15**
II	**DBMS and MySQL Basics** **1. Introduction of DBMS** a. Databases, Relational and Non-Relational Database Management System b. MySQL as a Non-procedural Language **2. MySQL Basics** a. Statements (Schema Statements, Data statements, Transaction statements) b. Names (table & column names) c. Data types (Char, Varchar, Text, Mediumtext, Longtext, Smallint, Bigint, Boolean, Decimal, Float, Double, Date, Date Time, Timestamp, Year, Time, d. Creating Database e. Inserting data f. Updating data	**15**

	g. Deleting data h. Expressions i. Built-in functions j. Missing data(NULL and NOT NULL DEFAULT values) **3. Row & Column Operations** a. CREATE,USE, ALTER (Add, Remove, Change columns) b. RENAME,SHOW, DESCRIBE (CREATE TABLE, COLUMNS, STATUS and DATABASES) c. DROP (TABLE, COLUMN, DATABASES statements) d. PRIMARY KEY FOREIGN KEY (One and more columns) e. Simple Validity checking using CONSTRAINTS.	
III	**Advanced MySQL** **1. MySQL queries** a. The SELECT statement (From, Where, Group By, Having, Order By, Distinct) b. Filtering Data by using conditions c. Simple and complex conditions using logical, arithmetic and relational operators(=, !,=, <, >, <>, AND, OR, NOT, LIKE, BETWEEN). **2. Multi-table queries** a. Table joins b. SQL considerations for multi table queries (table aliases, qualified column names, all column selections self joins). **3. Nested Queries (Only up to two levels)** a. Using sub queries b. sub query search conditions c. sub queries & joins, nested sub queries d. correlated sub queries e. sub-queries in the HAVING clause f. Simple Transaction illustrating START, COMMIT, and ROLLBACK.	**15**

Self-Learning Topics

Unit	Topics
I	**1. Introduction to Social Media Marketing** a. Definition and purpose of Social Media Marketing (SMM) Importance of SMM in the digital landscape b. Overview of different social media platforms and their significance
II	**1. Introduction of DBMS** a. Databases, Relational and Non-Relational Database Management System

Online Resources

Unit	Link

I	Basics of Digital Marketing by Dr. Lalit Engle, Devi Ahilya Vishwavidyalaya, Indore https://onlinecourses.swayam2.ac.in/cec19_mg23/preview
II	Database Management System by Prof. Parth Pratim Das, IITK https://archive.nptel.ac.in/courses/106/105/106105175/#

Practical

Sr. No.	Practical Topic
1.	Create a Facebook business page for fictional business and design a sample ad campaign
2.	Optimize your LinkedIn profiles and develop a sample content strategy for a professional networking scenario
3.	Identify potential influencers for a given scenario and create a collaboration plan
4.	Create sample tweets and design a mock X ad campaign targeting a specific audience
5.	Website Design – a case study
6.	MySQL Basics
7.	MySQL Row & Column Operations
8.	MySQL Queries
9.	Sub-queries and Multi-table queries
10.	Nested Queries and Transactions

TYBCom - Semester VI

Third Year Semester V Internal and External Detailed Evaluation Scheme

Sr. No.	Sem	Subject Code	Subject Title	NEP Course Type	Hours Per Week						Seasonal Evaluation Scheme (Internal + External)			Total Marks
					Units	SLE	L	T	P	Credits	SLE	PA/AT	SEE	
1.	Vi	STA310B	**Computer Systems & Applications - I**	DSE	3	20%	3	0	0	3	10	5	60	100
		STA310D	**Practical Based on CSA - I**						2	1			25	

Third Year Semester V - Units – Topics – Teaching Hours

S.No.	Subject Code	Subject Unit Title		Hours	Total No. of hours	Credit	Tot al Marks
1	STA310B	I	Advanced Digital Marketing Techniques	15	45	3	100 (60+40)
		II	Data Analysis Using Google Sheets	15			
		III	Power BI Fundamentals	15			
	STA310D	IV	Practical based on STA310B	30	30	1	

Course Code:

Learning Objectives

1. Recall key principles of advanced digital marketing techniques like YouTube, Email, SEO.
2. Understand features of Google Sheets and Power BI interfaces.
3. Apply data cleaning, pivot tables, and visualization techniques in Google Sheets.
4. Analyze marketing campaigns and large datasets for trends and insights.
5. Evaluate digital marketing performance and data reporting strategies.
6. Create interactive dashboards and advanced reports using Power BI.

Course Outcomes

1. List types of emails, YouTube ads, and SEO basics.
2. Summarize Google Sheets and Power BI capabilities for business data.
3. Apply Google Sheets formulas and Power BI visuals for real-world cases.
4. Analyze sales or marketing data using pivot tables, slicers, and drill-downs.
5. Evaluate YouTube analytics, email campaign results, and mobile marketing ROI.
6. Design professional dashboards, KPI indicators, and project reports.

Course Title: Computer Systems & Applications – II(DSE)

Unit	Contents	No of Lectures
I	**Advanced Digital Marketing Techniques** **1. YouTube Marketing** a. Optimizing video content for YouTube b. Promoting businesses through YouTube ads and sponsored content Monetization strategies and leveraging YouTube analytics for insights **2. Email Marketing** a. Understanding different types of emails and email marketing tools Building and managing mailing lists for effective email campaigns b. Implementing email marketing automation and analyzing email deliverability **3. Content Marketing and SEO** a. Introduction to content marketing and its importance in SMM Creating and optimizing content for social media platforms b. Overview of SEO techniques for improving website visibility and Google rankings **4. Mobile Marketing** a. Exploring the role of mobile devices in marketing strategies Understanding mobile advertising and engagement techniques b. Developing mobile-specific campaigns and measuring mobile marketing ROI	15
II	**Data Analysis Using Google Sheets** **1. Introduction to Google Sheets** a. Overview of Google Sheets i. Features and benefits of using Google Sheets for data analysis. ii. Differences between Google Sheets and other spreadsheet software (e.g., Microsoft Excel). b. Getting Started i. Creating a new Google Sheet. ii. Understanding the interface: menus, toolbars, and functions. iii. Basic spreadsheet operations: entering data, formatting cells, and using basic formulas. **2. Data Importing and Cleaning** a. Importing Data i. Importing data from various sources (CSV files, Google Forms, other Google Sheets). ii. Using the IMPORTDATA, IMPORTRANGE, and IMPORTXML functions. b. Data Cleaning Techniques	15

	i. Identifying and handling missing or duplicate data. ii. Using functions like TRIM, CLEAN, and UNIQUE to clean data. iii. Sorting and filtering data for better analysis. **3. Data Manipulation and Analysis** a. Using Functions for Analysis i. Basic functions: SUM, AVERAGE, COUNT, COUNTA, MAX, MIN. ii. Conditional functions: IF, SUMIF, COUNTIF, AVERAGEIF. iii. Lookup functions: VLOOKUP, HLOOKUP, and INDEX-MATCH. b. Creating Pivot Tables i. Understanding the purpose of pivot tables in data analysis. ii. Creating and customizing pivot tables to summarize data. iii. Analyzing data trends and patterns using pivot tables. **4. Data Visualization** a. Creating Charts and Graphs i. Types of charts available in Google Sheets (bar, line, pie, scatter). ii. Choosing the right chart for your data. iii. Customizing charts: titles, labels, colors, and legends. b. Dashboard Creation i. Combining multiple charts and tables into a single dashboard. ii. Using data validation and slicers for interactive dashboards. iii. Best practices for presenting data visually. **5. Advanced Data Analysis Techniques** a. Using Add-ons for Enhanced Analysis i. Exploring Google Sheets add-ons for data analysis (e.g., Supermetrics, Solver). ii. Integrating Google Sheets with Google Data Studio for advanced reporting. b. Scenario Analysis and Forecasting i. Using the GOAL SEEK function for scenario analysis. ii. Basic forecasting techniques using historical data. **6. Collaborative Data Analysis and Project Presentation** a. Collaboration Features i. Sharing Google Sheets with others for collaborative analysis. ii. Using comments and suggestions for feedback. iii. Version history and restoring previous versions.	
III	**Power BI Fundamentals**	**15**

	1. **Introduction to Power BI Desktop** a. Installation of Power BI Desktop b. Getting Familiar with Power BI Interface c. Overview of the Rhyme Interface 2. **Data Preparation & Transformation in Power Query** a. Importing Data using Power Query b. Fixing Column Names using Power Query c. Transforming the Data 3. **Data Visualization & Reporting** a. Creating Reports in Power BI b. Power BI Charts (Reports) c. Stacked Bar Chart, Stacked Column Chart d. Clustered Bar Chart, Clustered Column Chart e. Adding Report Titles & Formatting Options f. Creating Power BI Reports with AutoFilters g. Hierarchies and Drill Down Reports h. Hierarchies and Drill Down Options 4. **KPI Indicators & Dashboard Creation** a. Power BI KPI Indicators i. Importance and Benefits ii. Implementation in Reports b. Creating Interactive Dashboards in Power BI 5. **Advanced Reporting & Data Integration** a. Report Design with Legacy & DAT File b. Report Design with Database Tables c. "Get Data" Option & Report Verification in Cloud d. Aggregate with Bottom-Up Navigation Rules e. Automated Records Selection with Tabular Data f. Parameter for Column Data & Table/Query Filters	

Self-Learning Topics

Unit	Topics
I	2. **Email Marketing** a. Understanding different types of emails and email marketing tools Building and managing mailing lists for effective email campaigns 3. **Content Marketing and SEO** b. Introduction to content marketing and its importance in SMM Creating and optimizing content for social media platforms
II	1. **Introduction to Google Sheets** a. Overview of Google Sheets i. Features and benefits of using Google Sheets for data analysis. ii. Differences between Google Sheets and other spreadsheet software (e.g., Microsoft Excel). b. Getting Started i. Creating a new Google Sheet. ii. Understanding the interface: menus, toolbars, and functions. iii. Basic spreadsheet operations: entering data, formatting cells, and using basic formulas.

Online Resources

Unit	Link
I	Basics of Digital Marketing by Dr. Lalit Engle, Devi Ahilya Vishwavidyalaya, Indore https://onlinecourses.swayam2.ac.in/cec19_mg23/preview
II	Google Sheets Tutorial https://www.w3schools.com/googlesheets/

Practicals

Sr. No.	Practical Topic
1.	Create and upload a sample promotional video on YouTube and analyze its performance using YouTube analytics
2.	Design and send out a sample email campaign using an email marketing platform and analyze the campaign metrics
3.	Create sample social media posts and develop a content calendar for a content marketing campaign, with a focus on SEO optimization
4.	Design a mobile-friendly ad campaign for a fictional product or service and assess its performance metrics
5.	Data importing, cleaning and manipulation in Google Sheets
6.	Data Visualization using Google Sheets
7.	Data Analysis Techniques using Google Sheets
8.	Collaborative Data Analysis and Project Presentation using Google Sheets
9.	Data Preparation & Transformation in Power Query in PowerBI
10.	Data Visulaization (Charts and Tables) in PowerBI
11.	Charts formatting, Slicers, Filters, Drill-down etc. in PowerBI
12.	KPI Indicators & Dashboard making in PowerBI

The Scheme of Teaching and Examination:

The performance of the learners shall be evaluated in two components: Internal Assessment with 40% marks by way of continuous evaluation and by Semester End Examination with 60% marks by conducting the theory examination.

Examination Pattern for Third Year Degree as per NEP 2020 Academic Year 2025-2026

Formative Assessment

The evaluation of the Practical Course shall be conducted **out of 50 marks**, consisting of **10 marks for the internal component** and **40 marks for the Practical Examination**. The **50 marks** for the Practical Course Evaluation will be **converted to 25 marks**.

Internal Evaluation (10 marks):

1. Practical Journal – 5 Marks
2. Viva – 5 Marks

Practical Examination Paper Pattern:

Q. No.	Question Type	Marks
Q1	Any 2 out of 3 based on Unit 1 (Each question carries 10 Marks)	20
Q2	Any 2 out of 3 based on Unit 2 (Each question carries 10 Marks)	20

Summative Assessment

Sr. No.	All questions are Compulsory.	Marks
Q. 1	Attempt either a & b or p & q based on unit 1.	20
Q. 2	Attempt either a & b or p & q based on unit 2.	20
Q. 3	Attempt either a & b or p & q based on unit 3.	20