Hindi Vidya Prachar Samiti's

Ramniranjan Jhunjhunwala College

Of Arts, Science & Commerce

(Autonomous College)

Affiliated to
UNIVERSITY OF MUMBAI

Syllabus Framework as per LOCF

Program: B.Sc. STATISTICS

Program Code: RJSUSTAT

(CBCS 2020-2021)

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THE PREAMBLE

Why Statistics

In real life a lot of information is available. One tries to use it for the betterment of the future. It can be done by presenting data systematically, analyzing it and concluding in an appropriate manner. Statistics is a field of science that allows us to learn from the past data. It allows us to make the appropriate decisions and also to make near accurate predictions. Statistics involves a special way of thinking that can be used for data presentation, analysis and its interpretation. Statistics are not just numbers and facts. It provides tools for making decisions when conditions of uncertainty prevail. Hence Statistical tools and techniques are used in almost all fields which are indispensable for people working in fields like agriculture, business, management, economics, finance, insurance, education, biotechnology and medical science, etc. For the last two decades, large amounts of data have been handled with the help of computers and more sophisticated statistical techniques can be used in an effective manner to draw valid conclusions. Knowledge of different aspects of Statistics has become crucial in the present scenario. There is a continuous demand for statisticians in fields of education, industry, software and research. The syllabi of the three-year B.Sc. degree course in Statistics are framed in such a way that the students at the end of the course can be thorough in statistical techniques for pursuing higher studies and simultaneously can apply statistical tools judiciously to a variety of data sets to arrive at some valid conclusions.

Why Statistics AT R J College?

The Department of Statistics of R J College was established in 1983. It has received DBT star college scheme in 2019-20 which really helps to improve in academics and infrastructure for achieving excellence in teaching and unique exposure of students to practical application. The Department of Statistics is well equipped with technical infrastructure such as computers, printers, scientific and programmable calculators. It also has a student-friendly library of more than 100 books. As an applied component in the third year, Statistics students learn 'Computer Programming and System Analysis' which gives assistance to them towards applications of statistics they need in the corporate world. Mini projects, hands-on training sessions, guest lectures, lecture-based learning, industry visits etc. also motivate students to explore more in terms of applications of the subject. Under autonomy, the department has made curriculum more robust by incorporating skill-based learning and value-added courses that impart practical knowledge of the subject to the students.

Our Curriculum, Your Strength

The syllabus for Statistics for the total six semesters is meticulously designed so as to make students understand not only theory but also applications of Statistics in various fields. It starts from data presentation in the form of graphs, charts and diagrams, measures of various central tendencies and dispersion. From learning of handling data, students move to testing of various hypotheses and analysis of data. It includes complete knowledge of methods of estimation, various probability distributions with their properties and applications and topics from Operations Research. Also, they are exposed to applied aspects of the subject in various fields such as Banking and Insurance, Biostatistics, Actuarial Science, Data Science and Management. Our illustrious alumni are given a platform to remain in constant touch with our every new batch of students in providing them guidance in their studies and assisting in the internship and placement.

PROGRAM OUTCOMES OF GENERAL UNDERGRADUATE DEGREE PROGRAMS

Students of all undergraduate degree Programme at the time of graduation will be able to have following benefits:

Critical Thinking

Comprehend the matter they come across and be capable to take a sound viewpoint about things which will highlight their intellectual acumen as well as enable them to look at the world through multiple lenses.

Effective communication

Listen, speak, read and write. They should communicate properly by conveying their thoughts. They will use technology for communication. Will be able to network with people with all available channels. They will be developing communication skills in English; Hindi and a local language would be an added advantage.

Social Interaction

Respect each other and should be able to resolve conflicts and help in reaching amicable solution. They should be able to work in diverse teams. They should be able to distinguish when and what is socially acceptable.

Responsible citizen

Contribute to Nation development through social service. Being empathetic and sympathetic to fellow beings.

Honesty and Integrity, Ethics

Recognize different values and systems and respect them. In decision making moral values should be given prime importance.

Environmental and Sustainability

Environmental issues would be considered and problem solving with sustainable development would be chosen.

Life Long learning

Enjoy learning in every situation.

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Programme Specific Outcome B.Sc. Program with Statistics

Statistics play a significant role in our life. From data collection to making conclusions based on analysis is an integral part in every field. Experiments can be performed correctly and good data can be collected. But how this data is treated is just as important, and analyzing good data in right way can lead to groundbreaking findings and insights.

The courses have been designed to benefit all Statistics students to study various types of data analysis techniques including its practical applications. Keeping in mind the need for employability and entrepreneurship topics have been included in the curriculum.

PSO1:	Understand the basic concept of data collection and presentation in terms of graphs, diagrams and measures of central tendency. Measuring variation and comparison. Understand concepts of relationships between variables in terms of correlation, regression. Concepts of time series and Index numbers. Understand the concepts of probability and various distributions. Testing various hypotheses.
PSO2:	Understand in detail the concepts of probability distributions, theory of sampling, designs of experiments and operations research.
PSO3:	Applications of statistics in biological sciences, Actuarial science, operations research. Understand and apply Parametric and non-parametric testing of hypotheses. Understand concepts of method of estimation, linear models, Regression analysis using R software.

Syllabus Framework as per LOCF

Statistics UG Core Course Programme Outcome

PROGRAMME OUTCOME	First Year Sem-I		First Year Sem-II		Second Year Sem-III			Second Year Sem-IV			Third Year Sem-V				Third Year Sem-VI			
	RJSUSTAT101	RJSUSTAT102	RJSUSTAT201	RJSUSTAT202	RJSUSTAT301	RJSUSTAT302	RJSUSTAT303	RJSUSTAT401	RJSUSTAT402	RJSUSTAT403	RJSUSTAT501	RJSUSTAT502	RJSUSTAT503	RJSUSTAT504	RJSUSTAT601	RJSUSTAT602	RJSUSTAT603	RJSUSTAT604
Core Competency	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Critical Thinking	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Analytical Reasoning	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Research Skills	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Problem Solving	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Team Work	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Teaching Learning Process

The teaching learning process in the learning outcomes-based curriculum framework in the subject of Statistics is designed to develop the cognitive skills of every learner. The course offers the requisite skills for a professions and jobs in Statistics. All courses have Practicals as an integral part which promotes the learner to acquire the requisite skills for employment by experiential learning.

An interesting combination of teaching learning processes is adopted in which the teacher and learners are actively involved.

Some of the salient teaching learning processes are -

- Class lectures
- Presentations
- Group Discussion, workshops
- Peer teaching and learning
- Flipped classroom, project-based learning, quiz, seminars, exhibitions, posters.
- Practical's experimental design planning, analysis, interpretation, application of knowledge gained, mini projects
- Technology enabled self-learning

The effective teaching strategies would address the requirements of leaner to learn at their own pace. The teaching pedagogy adopted to ensure inculcate higher order skills in the learner. The entire program is also designed to foster human values, environmental consciousness for an equable society. The teaching learning processes adopted would aim at participatory pedagogy.