

Sant Gadge Baba Amravati University, Amravati
Three Years – Six Semester Bachelor’s Degree Programme

Syllabus

B.A. First Year – Semester II

Subject / Course Name : Statistics

| Level | Semester | Course Code | Course Name | Credits | Teaching Hours | Exam Duration | Max. Marks |
|-------|----------|-------------|---|---------|----------------|---------------|------------|
| 5 | 1 | 665204 | Graphical representation and Dispersion | 2 | 30 | 2 Hrs | 30 |

Course Objective :

1. Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
2. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
3. Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.
4. Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
5. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
6. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
7. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.

Course Outcomes :

After completing this course students will be able to

1. Students developed with basic knowledge about Statistics and its scope in various fields.
2. Become familiar with handling of data.
3. Can express the vast and diverse data into compact and more specific manner
4. Enable to estimate the trends in vital events like births and deaths
5. Understand the working of federal and private Statistical office local to their residence.

Notes :

- a. The strength of batch of practical for UG classes in statistics shall be 16 with an addition of 10% with the permission of Honorable Vice Chancellor.
- b. For theory 1 credit shall mean 1 hour teaching per week per semester (Total 30 Hrs / semester). The duration of 1 teaching period will be 60 minutes.
- c. For practical 1 credit shall mean 2 Hrs teaching per week per semester (Total 30 Hrs / semester).
- d. For examination and evaluation for theory course, 40% marks shall be assigned to Internal Examination and 60% marks shall be assigned to End semester External University Examination.

Theory Syllabus

| Serial No. | Contents | Workload Alloted | Weightage of Marks Alloted |
|-------------------|---|-------------------------|-----------------------------------|
| Unit I | Presentation of data 1.1 Graphical representation: Rules, Types and Importance. Histogram, frequency polygon, frequency curves. 1.2 Diagrammatic representation: Line diagram, Simple, multiple and subdivided bar diagram, 1.3 Pie Diagram, Stem and Leaf chart. 1.4 Rules, advantages, disadvantages of diagrammatic representation | 7 Hrs | 7 Marks |
| Unit II | Dispersion 2.1 Meaning, concept and need of dispersion. 2.2 Comparison between central tendency and dispersion. 2.3 Ideal measure of dispersion. 2.4 Range and quartile deviation, its coefficient. | 7 Hrs | 7 Marks |
| Unit III | Advanced measures of dispersion 3.1 Mean deviation, standard deviation, its coefficient. 3.2 Root mean square deviation, its relation with standard deviation. 3.3 Effect of change of origin and scale on standard deviation, moments. 3.4 Coefficient of variation and its use. | 8 Hrs | 8 Marks |
| Unit IV | Skewness and Kurtosis 4.1 Skewness, meaning and types, positive and negative skewness with diagram. 4.2 Measures of skewness, absolute and relative measures, coefficient of skewness- Karl Pearson's, Bowley's and based on moments. 4.3 Kurtosis: Meaning and types with diagram. 4.4 Measures of Kurtosis. | 8 Hrs | 8 Marks |

References :**Course Material/Learning Resources**

Text books:

- 1) मुलभूत सांख्यिकी प्रा. राम देशमुख विद्याप्रकाशन
- 2) संख्यात्मक तंत्रे प्रा. राम देशमुख विद्याप्रकाशन
- 3) सांख्यिकीमुलभूततंत्रे : प्रा. पुरुषोत्तम नवघरे

Reference Books:

- 1) Bhat B.R. Shrivakataraman T and Rao Madhava K.S. (1996) : Statistics: A Beginners's Text Vol.1, New Age International (P) Ltd.
- 2) Goon A.M., Guptam M.K., Dasgupta B: Fundamental of Statistics, Vol 1, 2, World Press Calcutta.
- 3) Croxton F.E. , Cowden D.J.and Kelin S: Applied Generatl Statistics, Prentice Hall India
- 4) Gupta S.C. , Kapoor V.K. : Fundamental of Mathematical Statistics; S. Chand & Company

Practical Examination Semester II

| Level | Semester | Course Code | Course Name | Credits | Teaching Hours | Exam Duration | Max. Marks |
|-------------|----------|-------------|------------------------------------|---------|----------------|---------------|------------|
| 5 B y | II | 665205 | Statistics 2 Laboratory Work | 2 | 2 per batch | 3Hrs | 50 |

Course Outcomes :**By the end of the Lab/Practical Course, generally students should be able to:**

1. Represent collected data with the help of graphs and diagram..
2. Calculate various measures of dispersion.
3. Present the data in frequency table.

*** List of Practical/Laboratory Experiments/Activities etc.**

| | |
|---|--|
| 1 | Presentation of data by frequency table |
| 2 | Diagrammatic presentation of data |
| 3 | Calculation of mean deviation, standard deviation and its coefficient. |
| 4 | Calculation of range and quartile deviation. |
| 5 | Calculation of coefficient of variation. |
| 6 | Calculation of coefficient of skewness and kurtosis |

