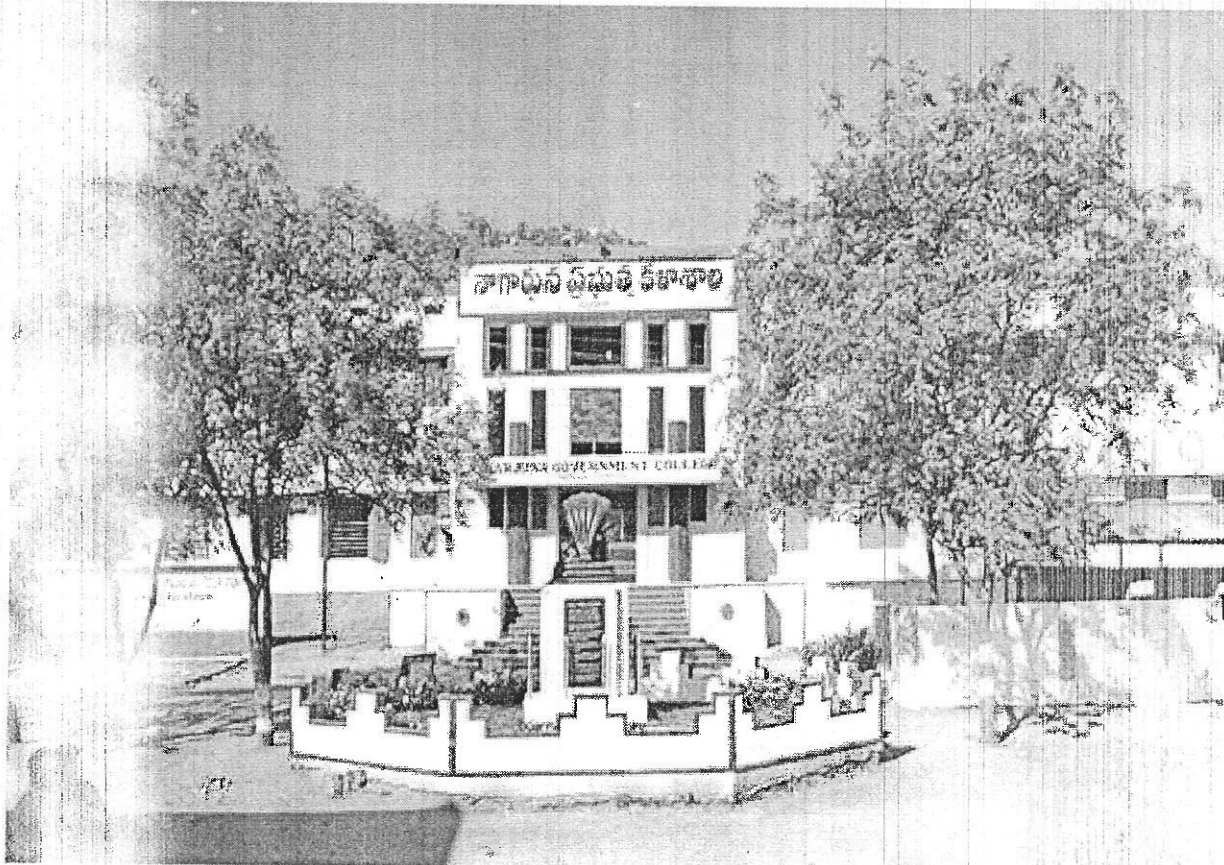


**NAGARJUNA GOVERNMENT COLLEGE, NALGONDA**  
(Autonomous) Reaccredited by NAAC with 'A' Grade  
(Affiliated to Mahatma Gandhi University)

([www.ngcnalgonda.org](http://www.ngcnalgonda.org))

## **BOARD OF STUDIES 2018-2019**



**DEPARTMENT OF STATISTICS**


**NAGARJUNA GOVERNMENT COLLEGE,  
NALGONDA**

**NAGARJUNA GOVERNMENT COLLEGE: NALGONDA**  
**(AUTONOMOUS)**  
**DEPARTMENT OF STATISTICS**  
**Constitution of Board of Studies 2018-19**

S.NO	CATEGORY	NAME & DESIGNATION
1	Chairman Board of studies	Dr. S. Upender In-Charge Department of Mathematics N. G. College, Nalgonda
2	University Nominee	Dr. K. Vani, Asst. Prof. of Statistics Dept. of Statistics, UCS, Osmania university
3	Subject Expert from out side the college	Smt S. Nirmala Asst. Prof. of Statistics GDC Vidyanagar
4	Subject Expert from out side the college	Dr. D.Lalitha devi Asst. Prof. of statistics Kasthooribha Gandhi college, Maredpally, secundrabad
5	Members: All the Faculty members of the Dept.	1.Sri V.Rajendra Prasad Department of Guest Faculty in Statistics Nalgonda Prof. of Statistics UCS, Osmania university Asst. Prof. of Statistics Gandhi college, secundrabad

Submitted by

  
In-Charge Chairman BOS

  
Proposals approved by  
Principal/Chairman Academic Council

**NAGARJUNA GOVERNMENT COLLEGE: NALGONDA**  
**(AUTONOMOUS)**

**(Re-Accredited by NAAC with A Grade)**

To \_\_\_\_\_ From \_\_\_\_\_  
Principal  
Nagarjuna Government College  
Nalgonda

**Sir/Madam**

**Sub:-** Grant of Autonomous status – Constitution of the Board of Studies in  
Statistics – request for approval – Reg.

**Ref:-** 1. No.F.22-1/2007(AC)Date: 03-04-2007.  
2.OU Lr.NoMR.69/H/2007/Acad,Date:12-06-2007.  
3.GORt.No. 467 HE.(CE-1) Dept. Date: 29-06-2007.  
4.MGU Lr.63/C/MGU/2018-19.Date: 14-08-2017.

With reference to the subject cited, I am pleased to communicate that since our college has Academic Autonomy a Board of Studies (BOS) in Statistics is formed with the following members for the Academic year 2018-19.

S.NO	Name	Designation
1	Chairman Board of studies	Dr. S. Upender In-Charge Department of Mathematics N. G. College, Nalgonda
2	University Nominee	Dr.K.Vani, Asst. Prof. of Statistics Dept. of Statistics,UCS, Osmania University
3	Subject Expert from out side the college	Smt S.Nirmala Asst. Prof. in Statistics GDC,Vidyanagar
4	Subject Expert from out side the college	Dr. D.Lalitha Devi Asst. Prof. of Statistics Kasthooribha Gandhi college, Maredpally, Secundrabad
5	Members: All the Faculty members of the Dept.	1.Sri V.Rajendra Prasad Guest Faculty in Statistics

The term of the office of the members of the Board of studies in Statistics shall be for a period of two (2) years with effect from the date of issue of this letter. TA and DA will be paid to the outstation members as per the Government rules whenever they attend the meetings of the Board of Studies.

With regards.

Copy to all members.  
Copy to concerned principal

Principal

**NAGARJUNA GOVERNMENT COLLEGE, NALGONDA**  
(Autonomous, Accredited by NAAC with "A" Grade)

**DEPARTMENT OF STATISTICS**

**BOARD OF STUDIES MEETING**

The members of Board of Studies in Statistics Department, N. G. College, Nalgonda met under the chairmanship of Dr S. Upender on 11-10-2018 at Department of Statistics, UCS, OU, discussed the following agenda and passed the resolutions.

**AGENDA**

1. To consider and approve the Choice Based Credit System (CBCS) and Cumulative Grade Point Average (CGPA) system for B. Sc I Year students for the academic year 2018-19.
2. To consider and approve the syllabus for B.Sc. I year (I, II Semesters) for the academic year 2018-19.
3. To consider and approve the modules (Units) and setting of Question papers as 70:30 for Theory External and Internal assignments for B.Sc. I Year (I, II Semesters) for the academic year 2018-19.
4. To consider and approve the Syllabus of practical examinations at the end of semesters for B.Sc. I year students.
5. To consider and approve the model question papers for B.Sc. I year for the academic year 2018-19.
6. To consider and approve the list examiners for paper setting and evaluation for the academic year 2018-19

Any other related academic matters.

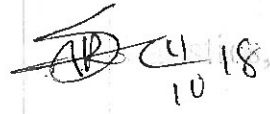

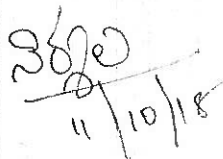
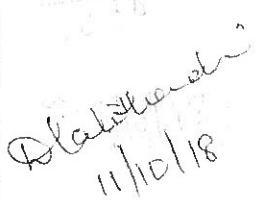

## RESOLUTIONS

1. The Choice Based Credit System (CBCS) and Cumulative Grade Point Average (CGPA) System can be implemented for the B.Sc. I Year (I, II Semesters) students for the academic year 2018-19.
2. Unitization of syllabus into 4 units for each paper (module) and approved the syllabus for B. Sc (Statistics) I (I, II semesters) for the academic year 2018-19.
3. The evaluation of the students for each semester of I, II Consists 100 marks in the ratio of 70:30 External End Theory exam – 70 marks and internal exam consist 30 marks. (Internal Assessment 20 marks, Assignment 5 marks and Seminar 5 marks) Two internal exams will be conducted for each semester and best of two will be considered.
4. Approved the syllabus for I, II, papers and approved the syllabus for Practical Examinations for each semesters for the I year. The syllabus approved and followed the practical question bank (as for University question bank)
5. Approved the syllabus and model question papers for each semester for the academic year 2018-19.

PANEL OF EXAMINERS (2018-19):

1. S.Nirmala, Asst. Prof. of Statistics, GDC, Vidyanagar, 9000509959
2. Dr.Lalitha Devi, Asst .Prof. of Statistics, Kasthooribha Gandhi College, maredpally, 9290614936
3. Sri Vedavathi Asst. Prof. in Statistics, Padmavathi Mahilakalashala, Saidabad, 9490411357
4. Sri.A.Sheker Reddy Lecturer in Statistics, Kakathiya degree college, Nalgonda

SIGNATURES OF THE MEMBERS.

1. Dr S. Upendy  10/10/18 Padmavathi
2. Dr. K. Vani  11/10/18 Kakathiya degree
3. S. Nirmala  
Asst. Prof in Statistics  
UGDC, Vidyanagar,  
Hyderabad.  11/10/18
4. Dr. D. Lalitha Devi  
Dept of Statistics  
Kasturba Gandhi Degree  
& PC college for women  
Secunderabad.  11/10/18
5. V. Rajendra prasad 



# NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

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## SYLLABUS FOR STATISTICS (NEW CBCS)

B.Sc. I Year - I Semester – MODULE – I (w.e.f. 2017-18)

### **Unit –I**

**Descriptive Statistics:** Concept of primary and secondary data. Methods of collection and editing of primary data. Designing a questionnaire and a schedule. Sources and editing of secondary data. Classification and tabulation of data. Measures of central tendency (mean, median, mode, geometric mean and harmonic mean) with simple applications. Absolute and relative measures of dispersion (range, quartile deviation, mean deviation and standard deviation) with simple applications. Importance of moments, central and non-central moments, and their interrelationships, Sheppard's corrections for moments for grouped data. Measures of skewness based on quartiles and moments and kurtosis based on moments with real life examples.

### **Unit -II**

**Probability:** Basic concepts in probability—deterministic and random experiments, trial, outcome, sample space, event, and operations of events, mutually exclusive and exhaustive events, and equally likely and favourable outcomes with examples. Mathematical, statistical and axiomatic definitions of probability with merits and demerits. Properties of probability based on axiomatic definition. Conditional probability and independence of events. Addition and multiplication theorems for  $n$  events. Boole's inequality and Bayes' theorem. Problems on probability using counting methods and theorems.


### **Unit -III**


**Random Variables:** Definition of random variable, discrete and continuous random variables, functions of random variables, probability mass function and probability density function with illustrations. Distribution function and its properties. Transformation of one-dimensional random variable (simple 1-1 functions only). Notion of bivariate random variable, bivariate distribution and statement of its properties. Joint, marginal and conditional distributions. Independence of random variables.

### **Unit -IV**

**Mathematical Expectation:** Mathematical expectation of a function of a random variable. Raw and central moments and covariance using mathematical expectation with examples.

Addition and multiplication theorems of expectation. Definition of moment generating function (m.g.f), cumulant generating function (c.g.f), probability generating function (p.g.f) and characteristic function (c.f) and statements of their properties with applications. Chebyshev's, and Cauchy-Schwartz's inequalities and their applications.



 11/10/18

207e  
11/10/2018

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11/10/18



**List of reference books:**

1. Charles M. Grinstead and Laurie Snell, J: Introduction to Probability, American Mathematical Society
2. Willam Feller: Introduction to Probability theory and its applications. Volume -I, Wiley
3. V.K. Kapoor and S.C. Gupta : Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi
4. GoonAM, GuptaMK, Das Gupta B : Fundamentals of Statistics , Vol-I, the World Press Pvt.Ltd., Kolakota.
5. Hoel P.G: Introduction to mathematical statistics, Asia Publishing house.
6. M.JaganMohan Rao and Papa Rao: A Text book of Statistics Paper-I.
7. Sanjay Arora and Bansilal: New Mathematical Statistics : Satya Prakashan , New Delhi
8. Hogg. Tanis. Rao: Probability and Statistical Inference. 7th edition. Pearson
9. Sambhavyata Avadhi Siddantalu — Telugu Academy
10. Sahasambandham-Vibhajana Siddantamulu – Telugu Academy
11. K.V.S. Sarma: Statistics Made Simple: do it yourself on PC. PHI
12. Gerald Keller: Applied Statistics with Microsoft excel. Duxbury, Thomson Learning.
13. Levine, Stephen, Krehbiel, Berenson: Statistics for Managers using Microsoft Excel 4th edition. Pearson Publication.
14. Abraham Kendall and Baker: Discrete Mathematics for Computer Science.

~~BC~~ Vani 11/10/18

25/20 11/10/2018

Raj

Plotted - 11/10/18

# NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

(Autonomous, Accredited by NAAC with "A" Grade)

SYLLABUS FOR STATISTICS (NEW CBCS)

B.Sc. I Year - II Semester - MODULE II (w.e.f. 2017-18)

## UNIT-I

Discrete distributions: Uniform, Bernoulli, Binomial, Poisson, Negative binomial, Geometric and Hyper-geometric (mean and variance only) distributions their applications and uses.

## UNIT-II

Properties of these distributions such as m.g.f, c.g.f., p.g.f., c.f., and moments up to fourth order and their real life applications. Reproductive property wherever exists. Binomial approximation to Hyper-geometric, Poisson approximation to Binomial and Negative binomial distributions.

## UNIT-III

Continuous distributions: Rectangular and Normal distributions. Normal distribution as a limiting case of Binomial and Poisson distributions. Exponential, Gamma, Beta of two kinds (mean and variance only) and Cauchy (definition and c.f. only) distributions.

## UNIT-IV

Properties of these distributions such as m.g.f., c.g.f., c.f., and moments up to fourth order, their real life applications and reproductive property wherever exists. Statement and applications of weak law of large numbers, Strong law of large numbers and central limit theorem for identically and independently distributed (i.i.d) random variables with finite variance.

### List of reference books:

1. Willam Feller: Introduction to Probability theory and its applications. Volume -I, Wiley
2. V.K.Kapoor and S.C.Gupta: Fundamentals of Mathematical Statistics, Sultan Chand&Sons, New Delhi
3. GoonAM, Gupta MK, Das Gupta B : Fundamentals of Statistics , Vol-I, the World Press Pvt.Ltd., Kolakota.
4. Hoel P.G: Introduction to mathematical statistics, Asia Publishing house.
5. M.JaganMohan Rao and Papa Rao: A Text book of Statistics Paper-I.6.Sanjay Arora and Bansilal: New Mathematical Statistics : Satya Prakashan , New Delhi
7. Hogg.Tanis.Rao: Probability and Statistical Inference. 7th edition. Pearson
8. SambhavyataAvadhiSiddantalu—TeluguAcademy
9. Sahasambandham-VibhajanaSiddantamulu – TeluguAcademy

*Handwritten signatures and dates:*  
11/10/18  
11/10/2018  
11/10/18  
Raj

**Faculty of Science**  
**B. Sc I/II Semester Examination**  
**STATISTICS MODEL PAPER (CBCS)**

**Time: 2 ½ Hrs**

**Max.Marks: 70**

**SECTION - A (5 X 2 = 10)**

Answer the following questions :( At least one question from each section)

- 1.
- 2.
- 3.
- 4.
- 5.

**SECTION - B (4 X 5 =20)**

Answer any **FOUR** of the following questions :( At least one question from each section)

- 6.
- 7.
- 8.
- 9.
- 10.
- 11.

**SECTION - C (4 X 10 = 40)**

Answer the following questions

12 (a) Unit - I

(OR)

(b) Unit - I

13 (a) Unit - II

(OR)

(b) Unit - II

14 (a) Unit - III

(OR)

(b) Unit - III

15 (a) Unit - IV

(OR)

(b) Unit - IV

*[Signature]*

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11/10/18

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11/10/18

*Shalini*  
11/10/18

*Raj*