**PACHORA TALUKA CO- OPERATIVES EDUCATION SOCIETY'S**

# SHRI SETH MURLIDHARJI MANSINGKA ARTS, SCIENCE & COMMERCE COLLEGE, PACHORA, DIST. JALGAON.

( Affiliated to the NMU , Jalgaon)

# DEPARTMENT OF
# MATHEMATICS & STATISTICS

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# DEPARTMENT OF MATHEMATICS  & STATISTICS

| | | | |
|---|---|---|---|
| **Date of Establishment** | : | Mathematics | : | June 1971 |

**Date of Establishment**   :   Mathematics   :   June 1971

Statistics   :   June 1991

**Staff**   :   1 .Prof.  R. P. Mahale (Assistant Professor)

2. Miss Prof . V.S.Mahajan( CHB)

**Programmes**   :   Maths - F.Y.B.Sc & S.Y.B.Sc  (General)

Stats  - F.Y.B.Sc  (General)

**Workload of the Department [Academic Year 2018-19 ]**

| Subject | Theory | Practical | Total |
|---|---|---|---|
| Mathematics | 17 | 8 | 25 |
| Statistics | 6 | 8 | 14 |
| Total | 23 | 12 | 39 |

## Students Strength

### Year wise students Strength

| Class | Subject | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|
| F.Y.B.Sc | Maths | 77 | 53 | 72 | 47 | 30 | 58 | 60 |
| F.Y.B.Sc | Stats | 45 | 32 | 39 | 19 | 15 | 15 | 25 |
| S.Y.B.Sc | Maths | 21 | 51 | 35 | 50 | 42 | 22 | 39 |
| F.Y.B.Com | Q.T. | 72 | - | - | - | - | - | - |

### Graphical Representation of Year wise students admitted
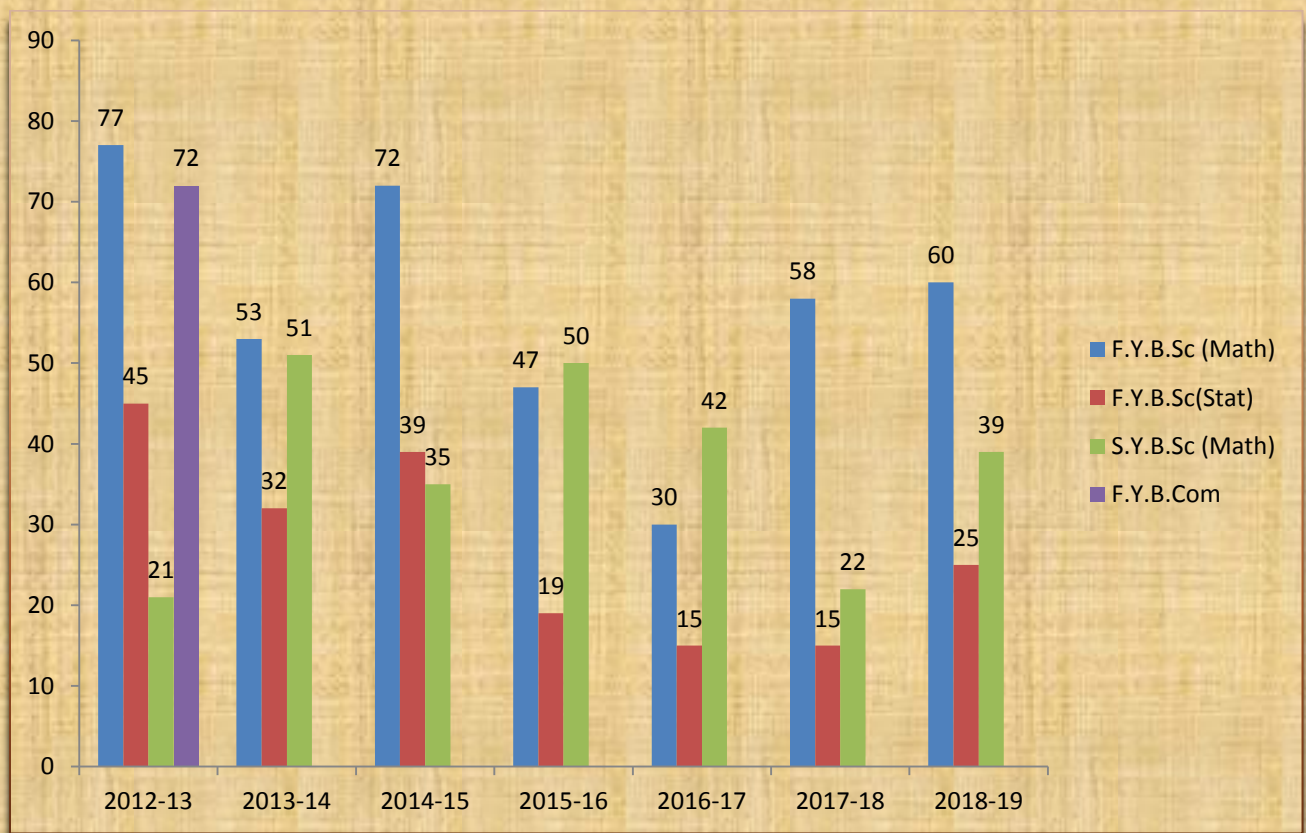
## Student –Teacher Ratio (programme wise):--

| Academic Year | Programmes | Students- Teachers Ratio |
|---|---|---|
| 2012-13 | F.Y.B.Sc [Math] | 26:1 |
| | F.Y.B.Sc [Stat] | 15:1 |
| | S.Y.B.Sc [ Math] | 11:1 |
| | F.Y.B.Com | 24:1 |
| 2013-14 | F.Y.B.Sc [Math] | 27:1 |
| | F.Y.B.Sc [Stat] | 16:1 |
| | S.Y.B.Sc [ Math] | 26:1 |
| 2014-15 | F.Y.B.Sc [Math] | 36:1 |
| | F.Y.B.Sc [Stat] | 20:1 |
| | S.Y.B.Sc [ Math] | 17:1 |
| 2015-16 | F.Y.B.Sc [Math] | 24:1 |
| | F.Y.B.Sc [Stat] | 8:1 |
| | S.Y.B.Sc [ Math] | 25:1 |
| 2016-17 | F.Y.B.Sc [Math] | 15:1 |
| | F.Y.B.Sc [Stat] | 8:1 |
| | S.Y.B.Sc [ Math] | 21:1 |
| 2017-18 | F.Y.B.Sc [Math] | 29:1 |
| | F.Y.B.Sc [Stat] | 8:1 |
| | S.Y.B.Sc [ Math] | 11:1 |
| 2018-19 | F.Y.B.Sc [Math] | 30:1 |
| | F.Y.B.Sc [Stat] | 12:1 |
| | S.Y.B.Sc [ Math] | 20:1 |

# WORK LOAD

| Year | F.Y.B.Sc Maths | | | F.Y.B.Sc Stats | | | S.Y.B.Sc Maths | | | F.Y.B. Com | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Th. | P. | T. | Th. | P. | T. | Th. | P. | T. | Th | Th | P. | T. |
| 2012-13 | 9 | - | 9 | 6 | 12 | 18 | 8 | 8 | 16 | 2 | 35 | 20 | **45** |
| 2013-14 | 9 | - | 9 | 6 | 8 | 14 | 8 | 8 | 16 | - | 23 | 16 | **39** |
| 2014-15 | 9 | - | 9 | 6 | 8 | 14 | 8 | 8 | 16 | - | 23 | 16 | **39** |
| 2015-16 | 9 | - | 9 | 6 | 4 | 10 | 8 | 16 | 24 | - | 23 | 20 | **43** |
| 2016-17 | 9 | - | 9 | 6 | 8 | 14 | 8 | 8 | 16 | - | 23 | 16 | **39** |
| 2017-18 | 9 | - | 9 | 6 | 4 | 10 | 8 | 8 | 16 | - | 23 | 12 | **35** |
| 2018-19 | 9 | - | 9 | 6 | 8 | 14 | 8 | 8 | 16 | - | 23 | 16 | **39** |

**Note :** Th: Theory      P: Practical      T:Total

**Curriculum :**

**F.Y.B.Sc Mathematics    [ 40+10 Pattern ]**

**w. e. f. June2012 up to April 2015.**

| | |
|---|---|
| **Sem I** | MTH- 111 Theory of Matrices |
| | MTH- 112 Calculus |
| | MTH- 113 (A) Co –ordinate Geometry   or<br>MTH- 113 (B) Graph Theory |
| **Sem II** | MTH- 121 Differential Equations |
| | MTH- 122 Algebra |
| | MTH- 123 (A) Laplace Transforms    or<br>MTH- 123 (B) Computational Mathematics |

**F.Y.B.Sc Mathematics    [ 60+40 Pattern ]**

**w. e. f. June2015 up to April 2018.**

| | |
|---|---|
| **Sem I** | MTH- 111 Matrices |
| | MTH-112 Calculus of one variable |
| | MTH-113 (A) Geometry<br>MTH-113(A) Discrete Mathematics |
| **Sem II** | MTH-121 Ordinary Differential Equations |
| | MTH-122 Theory of Numbers & Equations |
| | MTH-123(A) Laplace Transforms    or<br>MTH-123(B) Numerical Methods |

**F.Y.B.Sc  Statistics     [ 40+10 Pattern ]**

**w. e. f.  June2012  up to April 2015.**

| | |
|---|---|
| **Sem I** | ST-111 Descriptive Statistics I |
| | ST-112 Probability &Probability Distributions I |
| | ST-103 Practical Course I |
| **Sem II** | ST-121 Descriptive Statistics II |
| | ST-122 Probability &Probability Distributions II |
| | ST-103 Practical Course II |

**F.Y.B.Sc  Statistics     [ 60+40 Pattern ]**

**w. e. f.  June2015  up to April 2018.**

| | |
|---|---|
| **Sem I** | ST-111 Descriptive Statistics I |
| | ST-112 Probability &Probability Distributions I |
| | ST-103 Practical Course I |
| **Sem II** | ST-121 Descriptive Statistics II |
| | ST-122 Probability &Probability Distributions II |
| | ST-103 Practical Course II |

## S.Y.B.Sc  Mathematics    [ 40+10 Pattern ]

## Academic Year. 2012-2013

| | |
|---|---|
| **Sem I** | MTH- 211 Calculus of Several Variables |
| | MTH-212 (A) Abstract Algebra       or<br>MTH-212 (B)  Computational Mathematics |
| | MTH-203 Practical Course I |
| **Sem II** | MTH-221 Complex Variables |
| | MTH-222 (A)Laplace Transforms     or<br>MTH-222 (B)  Numerical Methods |
| | MTH-203 Practical Course II |

## S.Y.B.Sc  Mathematics     [ 40+10 Pattern ]

## w. e. f.  June 2013  up to April 2016.

| | |
|---|---|
| **Sem I** | MTH- 231 Advances Calculus |
| | MTH-232 (A) Topics in Algebra     or<br>MTH-232 (B) Computational Algebra |
| | MTH-203 Practical course based on MTH 231 & MTH 232 |
| **Sem II** | MTH-241 Complex Analysis |
| | MTH-242 (A) Differential Equations     or<br>MTH-242 (B) Differential Equations & Numerical Methods |
| | MTH-203 Practical course based on MTH 241 & MTH 242 |

**S.Y.B.Sc  Mathematics      [ 40+10 Pattern ]**

**w. e. f.  June2016  up to April 2019.**

| | |
|---|---|
| **Sem I** | MTH- 231 Calculus of several Variables |
| | MTH-232(A) Algebra   or<br>MTH-232 (B) Theory of Group |
| | MTH-233 Practical Course based on MTH 231 & MTH 232 |
| **Sem II** | MTH-241 Complex Variables |
| | MTH-242 Differential Equation    or<br>MTH-242 Differential  & Difference Equations |
| | MTH-243 Practical Course based on MTH 241 & MTH 242 |

**Features**

1. At first year level, the curriculum is based on the basic concept of the said courses
2. The curriculum of S.Y.B.Sc is based on the idea of two variables and more variables functions of real & complex
3. At S.Y.B.Sc, Mathematics the practical course contains the mathematical problems & applications of the  Paper I & Paper II
4. At  F.Y.B.Sc , Statistics the practical course contains the mathematical problems & applications of the  Paper I & Paper II

## Departmental Activities

- Teaching Plan for the academic year in the beginning of the year
- Interdisciplinary teaching
- Record Maintenance
- Participation in different competitive programmes arranged by different colleges at the university level or state level
- Internal tests
- Quiz Competitions
- To conduct Bridge course for F.Y.B.Sc students

## Books in the Central Library

| Year | Reference | Text | Total |
|---|---|---|---|
| 2011-12 | 23 | 160 | 183 |
| 2012-13 | 20 | 255 | 275 |
| 2013-14 | - | 190 | 190 |
| 2014-15 | 7 | - | 7 |
| 2015-16 | - | 160 | 160 |
| 2016-17 | 5 | 90 | 95 |
| 2017-18 | - | - | - |
| 1970-2018 | 408 | 2152 | 2560 |

## Journal:

Proceedings in Mathematical Science

## Record Maintenance

| Sr. No. | Particulars |
|---------|-------------|
| 1 | Syllabus File |
| 2 | F.Y.B.Sc Mathematics Question Papers (Sem Pattern) |
| 3 | F.Y.B.Sc Statistics Question Papers (Sem Pattern) |
| 4 | S.Y.B.Sc Mathematics Question Papers (Sem Pattern) |
| 5 | N.M.U. Letters & Circulars File |
| 6 | N.M.U. Practical Exam File |
| 7 | Time Table & Work load File |
| 8 | Practical exam Reports file |
| 9 | Personal File |
| 10 | Teaching Plan file |
| 11 | Attendance Report file |
| 12 | Internal Assessment File |

# Methods of Teaching, Assessment, and Result Analysis

## 1. Methods of Teachings

Following methods are used along with regular lectures to strengthen teaching learning process.

1) Lecture Method
2) Practical
3) Practice Session to overcome the difficulties of the students
4) Discussion
5) Tutorials & Home – Assignments
6) Internal Test

## 2. Result Analysis

| Year | Class | Appeared | Total Passed | Total Fail | % of Passing |
|------|-------|----------|--------------|------------|--------------|
| 2012-2013 | F.Y.B.Sc ( Maths ) | 77 | 38 | 39 | 49% |
| | F.Y.B.Sc ( Stats ) | 45 | 26 | 19 | 57% |
| | S.Y.B.Sc (Maths) | 21 | 16 | 05 | 76% |
| 2013-2014 | F.Y.B.Sc ( Maths ) | 53 | 29 | 24 | 54% |
| | F.Y.B.Sc ( Stats ) | 32 | 27 | 05 | 84% |
| | S.Y.B.Sc (Maths) | 51 | 26 | 25 | 50% |
| 2014-2015 | F.Y.B.Sc ( Maths ) | 72 | 20 | 52 | 27% |
| | F.Y.B.Sc ( Stats ) | 39 | 13 | 26 | 33% |
| | S.Y.B.Sc (Maths) | 35 | 24 | 11 | 68% |
| 2015-2016 | F.Y.B.Sc ( Maths ) | 47 | 20 | 27 | 42% |
| | F.Y.B.Sc ( Stats ) | 19 | 08 | 07 | 53% |
| | S.Y.B.Sc (Maths) | 50 | 29 | 21 | 58% |
| 2016-2017 | F.Y.B.Sc ( Maths ) | 25 | 15 | 10 | 60% |
| | F.Y.B.Sc ( Stats ) | 13 | 09 | 04 | 69% |
| | S.Y.B.Sc (Maths) | 42 | 15 | 27 | 35% |
| 2017-2018 | F.Y.B.Sc ( Maths ) | 58 | 40 | 18 | 68% |
| | F.Y.B.Sc ( Stats ) | 15 | 09 | 06 | 60% |
| | S.Y.B.Sc (Maths) | 22 | 16 | 06 | 72% |

# Graphical Representation of Result
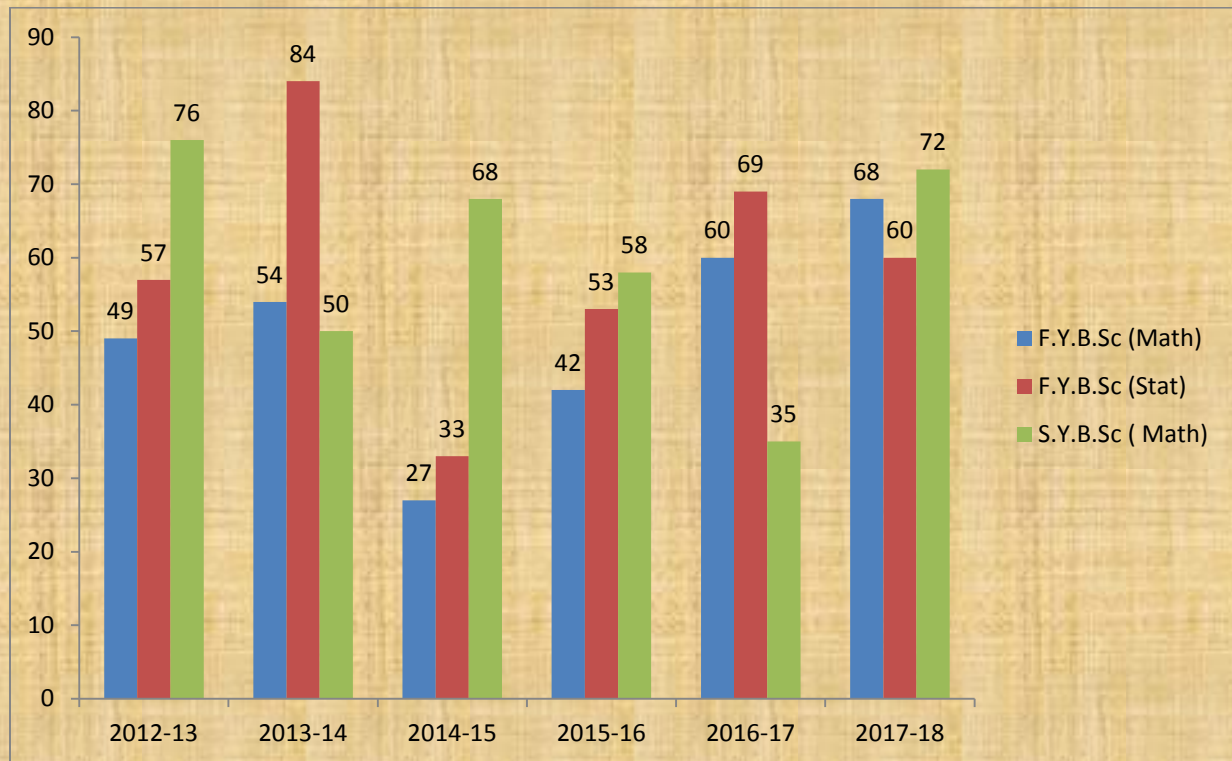
**Faculties in the Department:**

| Academic Year | Teaching Staff |
|---|---|
| 2012-13 | Prof. P.Y.Pawar |
| | Prof. Miss P.S.Sangavi [CHB] |
| | Prof. Miss  P.S.Patil [CHB] |
| 2013-14 | Prof. P.Y.Pawar (Retired on Oct 13) |
| | Prof. Miss P.S.Sangavi [CHB] |
| 2014-15 | Prof. P.Y.Pawar |
| | Prof. Miss P.S.Sangavi [CHB] |
| 2015-16 | Prof .V.T.Bagul [ CHB] |
| | Prof. R.M. Agrawal [ CHB] |
| 2016-17 | Prof. R.P. Mahale (Since July 2016) |
| | Prof. Miss Monali Salunkhe  [CHB] |
| 2017-18 | Prof .R.P.Mahale |
| | Prof. Miss A.S.Patwari [CHB] |
| 2018-19 | Prof .R.P.Mahale |
| | Prof. Miss V.S.Mahajan [CHB] |

| Sr. No. | Name of the Teacher | Designation | Qualification | Experience | Gender |
|---|---|---|---|---|---|
| 1 | Prof. Ravindra P. Mahale | Assistant Professor | M.Sc ( Maths) SET | 02 years | M |
| 2 | Prof. Miss V.S.Mahajan | Assistant Professor | M.Sc ( Maths) | 01 years | F |

**Extra Curricular Activities of Teachers :**

**Prof .R.P.Mahale**

1. Attended & actively participated in State level one day workshop on ROLE OF IQAC IN REVISED NAAC ACCREDITATION at A.R.B. Garud Arts Science & Commerce college Shendurni Tal : Jamner Dist : Jalgaon on 6$^{th}$ Feb. 2019.

2. Attended one day national Conference on New Horizons in NAAC Reaccreditation (NHNR-2019) at Z.B. Patil College , Dhule on 2$^{nd}$ Feb. 2019.

3. Participated as team manager in Science Quiz Competition organized by Science Association of B.P. Arts S.M.A. Science & KKC Commerce College Chalisgaon, Dist : Jalgaon on 16$^{th}$ & 17$^{th}$ Jan 2019.

4. Participated as team manager in Late. Sandip Chavhan State level inter college G.K. Quiz Competition organized by N.Y.N.C. Arts Science Commerce College Chalisgaon, Dist : Jalgaon on 28$^{th}$ & 29$^{th}$ Dec 2018.

5. Attended & actively participated in one day workshop on syllabus framing for F. Y. B. Sc., to be implemented from June-2018, Organized by Dept. of Mathematics, R.C.Patel College, Shirpur On 24$^{th}$ April 2018.

6. Team Manager in Science Quiz Competition organized by Science Association of B.P. Arts S.M.A. Science & KKC Commerce College Chalisgaon, Dist : Jalgaon on 20$^{th}$ & 21$^{st}$ Jan 2018.

7. Attended & actively participated in one day workshop on syllabus framing for T. Y. B. Sc., to be implemented from June-2018, Organized by Dept. of Math ASC College, Jamner 3$^{rd}$ March 2017.
8. Team Manager in Science Quiz Competition  organized by Science Association of B.P. Arts S.M.A. Science & KKC Commerce College Chalisgaon, Dist : Jalgaon  on 27$^{th}$ &28$^{th}$  Jan 2017.

## Future Plans:

1. To organized syllabus framing workshop of  F.Y.B.Sc  Mathematics.
2. To start Mathematics as a special subject at T.Y.B.Sc level.