



ARSD College, University of Delhi

Model Course Handout/Lesson Plan

| Course Name : B.Sc.(Honours) Mathematics | | | | | | |
|---|-------------|--|-------------|--------------|---------------|------------|
| Semester | Course Code | Course Title | Lecture (L) | Tutorial (T) | Practical (P) | Credit (C) |
| IV | 32353401 | Computer Algebra System and Related Software (Practical) | 0 | 0 | 4 | 2 |
| Teacher/Instructor(s) | | Raj Kumar Bhagat, Jyoti Kaushik | | | | |
| Session | | 2020-21 | | | | |

Course Objective: This course aims at familiarizing students with the usage of Computer Algebra Systems (Mathematica/MATLAB/Maxima/Maple) and the statistical software R. The basic emphasis is on plotting and working with matrices using CAS. Data entry and summary commands will be studied in R. Graphical representation of data shall also be explored.

Teaching Plan:

| S.No. | Topic to be covered | Teaching Hours |
|--------------|--|----------------|
| 1 | From Suggested book [1] Chapter 12 (Exercises 1 to 4) | 6 |
| 2 | From Suggested book [1] Chapter 12 (Exercises 8 to 12) | 6 |
| 3 | From Suggested book [1] Chapter 14 (Exercises 1 to 3) | 6 |
| 4 | From Suggested book [2] Chapter 6 (Exercises 6.2 and 6.3) | 4 |
| 5 | From Suggested book [2] Chapter 7 [Exercises 7.1(1) and 7.2] | 8 |
| 6 | From Suggested book [2] Chapter 7 [Exercises 7.3(2) and 7.4(1)] | 4 |
| 7 | From Suggested book [2] Chapter 7 [Exercises 7.6] | 4 |
| 8 | From Suggested book [3] Chapter 2 and 3 | 6 |
| 9 | From Suggested book [3] Chapter 4 and 5 | 6 |
| 10 | From Suggested book [3] Chapter 7 | 6 |
| Total | | 56 |

| Suggested Books | | |
|------------------------|---|---|
| S. No. | Title/Author | Publisher/Edition/Year |
| 1 | A Student's Guide to the Study, Practice, and Tools of Modern Mathematics by Bindner, Donald & Erickson, Martin. | CRC Press/ 2011 |
| 2 | The Student's Introduction to Mathematica®: A Handbook for Precalculus, Calculus, and Linear Algebra by Torrence, Bruce F., & Torrence, Eve A. | Cambridge University Press./ Second Edition / 2009 |
| 3 | Beginning R: The Statistical Programming Language by M Gardener | Wiley/ Second Edition / 2012 |

Evaluation Scheme:

| No. | Component | Duration | Marks |
|------------|--------------------------|-----------------|--------------|
| 1. | Internal Assessment | | 25 |
| | • Quiz/Viva | | |
| | • Observation & Record | | |
| | • Attendance | | |
| | • Model Exam | | |
| 2. | End Semester Examination | 3 hr | 25 |