**Curriculum Plan (ODD SEM 2024): B.Sc. (H) Mathematics I Year (Semester I)**

**Paper SEC: MATHEMATICAL MODELING WITH EXCEL**

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| **Dr. Tajender Kumar**Assistant ProfessorDepartment of MathematicsKalindi College (University of Delhi)Delhi- 110008Mobile: +91 7417837644**E- mail**: tajenderkumar@kalindi.du.ac.in  |  | **Marks Distribution**  | **Theory** |   |
| **Practical** |  |
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| Attendance 6 Marks |
| **Classes Assigned** | **Practical** | 4 Practical per week |
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| **References** |  | 1. Albright, Brian, & Fox, William P. (2020). Mathematical Modeling with Excel (2nd ed.)
 |
|  | **Week** | **Topics** |  |
|  | **Beginning/1st week with 3 days** **(**29-31 AUG, 02-07 SEP) | Discrete dynamical system concepts and examples; |  |
|  | **2nd week** **(**09-14 SEP) | Discrete dynamical system concepts and examples; |  |
|  | **3rd week** **(**16-21 SEP) | Long-term behavior and equilibria, Discrete log equation. [1]: Chapter 4 (Sections 4.1 to 4.3). |  |
|  | **4th week** **(**23-28 SEP) | Long-term behavior and equilibria, Discrete log equation. [1]: Chapter 4 (Sections 4.1 to 4.3). |  |
|  | **5th week** **(**30 SEP-05 OCT) | Linear predator-prey model, |  |
|  | **6th week****(**07-12 OCT) |  Linear predator-prey model, |  |
|  | **7th week** **(**14- 19 OCT) | SIR model of epidemics, and SIS model. |  |
|  | **8th week** **(**21-26 OCT) | SIR model of epidemics, and SIS model.[1]: Chapter 4 (Sections 4.4, and 4.6). |  |
|  | **9th week** **(**04-09 NOV) | Monte Carlo simulation: Flipping a coin, Area under a curve, |  |
|  | **10th week** (11-16 NOV) | Monte Carlo simulation: Flipping a coin, Area under a curve, |  |
|  | **11th week** **(**18-23 NOV) | Car dealership contest, and the birthday problem. |  |
|  | **12th week** **(**25-30 NOV) | Car dealership contest, and the birthday problem. [1]: Chapter 6 (Section 6.2), and Section 6.3 (Example 6.3.2 and Exercise 6.3.4 only). |  |
|  | **13th week** **(**02-07 DEC) | Revision |  |
|  | **14th week** **(**09-14 DEC) | Revision |  |
|  | **15th week** (16-21 DEC) | Revision |  |
|  | **16th week only with 1 Days** (23 DEC) | Revision |  |
| Dispersal of classes, preparation leave and practical examination begin- 24 December, 2024. |