**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 Professor  Department of Mathematics  Kalindi College (University of Delhi)  Delhi- 110008  Mobile: +91 7417837644  **E- mail**: [tajenderkumar@kalindi.du.ac.in](mailto: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. | | | | | | |