**Curriculum Plan: B. Sc. (Hons) Mathematics (Semester VII)- Fundamentals of Topology (2025-26). ODD SEM**

|  |  |  |  |
| --- | --- | --- | --- |
| **DR. ABHISHEK KR. SINGH**Assistant ProfessorDepartment of MathematicsKalindi CollegeUniversity of DelhiDelhi- 110008Mobile: +91-8375834510**Email**: abhishek@kalindi.du.ac.in | C:\Users\Abhishek\Pictures\2014-05-28 002\photo.jpg | **Marks Distribution**  | **Theory** - |
| **Internal Assessment-** |
|
|
| **Classes Assigned** | **Lectures: 3 per week** |
|  | **References** | **Shirali, Satish & Vasudeva, H. L. (2009). Metric Spaces. Springer. Indian Reprint 2019.****Munkers James R. (2000). Topology (2ND ed). Prentice Hall Of India Pvt. Ltd.** |
|  | **Week** | **Topics** |
|  | **1st week** | PROPERTIES OF METRIC SPACES. SPACES OF SEQUENCES OF NUMBERS. |
| **2nd week** | CONVERGENCE AND COMPACTNESS, COMPLETION OF A METRIC SPACES. |
| **3rd week** | LACAL BASE AND BASE. FIRST AND SECOND AXIOM OF COUNTABILITY. |
| **4th week** | SEPARABLE AND LINDELOF SPACES. |
| **5th week** | NOWHERE DENSE SUBSETS. CATEGORY I AND II SETS.  |
| **6th week** | BAIRE CATEGORY THEOREM. |
| **7th week** | EXTENSION THEOREMS. |
| **8th week** | TIETZE’S THEOREM |
| **9th week** | LOCAL CONNECTEDNESS. ARCWISE CONNECTEDNESS. |
|  |
|  | **10th week**. | TOTALLY BOUNDED SETS. |
| **11th week** | TOPOLOGY. BASIS AND SUBBASIS FOR TOPOLOGY. |
|  | **12th week** | PRODUCT AND SUBSPACE TOPOLOGY. |
| **13th week** | CLOSED SETS. HOUSEDORFF SPACES. |
| **14th week** | CONTINUOUS FUNCTIONS. HOMEOMORPHISM. PRODUCT TOPOLOGY. |
| **15th week** | CONNECTEDNESS AND COMPACTNESS. |
|  |