**Curriculum Plan: B. Sc. (Hons) Mathematics (Semester VI)- DSE-4(i): NUMBER THEORY.**

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| **DR. ABHISHEK KR SINGH**  Assistant Professor  Department of Mathematics  Kalindi College  University of Delhi  Delhi- 110008  Mobile: +91-8375834510  **E- mail**: abhishek@kalindi.du.ac.in | | C:\Users\Abhishek\Pictures\2014-05-28 002\photo.jpg | **Marks Distribution** | **Theory** -75 |
| **Internal Assessment-25** |
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| **Classes Assigned** | **Lectures: 3 per week.** |
|  | **References.** | **David M. Burton, Elementary Number Theory (7th Edition), Tata McGraw-Hill Edition, Indian Reprint, 2007.**  **Neville Robinns, Beginning Number Theory (2nd Edition), Narosa Publishing House Pvt. Limited, Delhi, 2007** | | |
|  | **Week** | **Topics** | | |
|  | **1st week**  JAN 2-7 | Linear Diophantine equation. | | |
| **2nd week**  JAN 9-14 | Prime counting function. Statement of prime number theorem. | | |
| **3rd week**  JAN 16-21 | Goldbach conjecture. | | |
| **4th week**  JAN 23-28 | Complete set of residues. | | |
| **5th week**  JAN 30- FEB 4 | |  | | --- | |  |   Linear congruence. | | |
| **6th week**  FEB 6-11 | Chinese remainder theorem. | | |
| **7th week**  FEB 13-18 | Fermat’s little theorem. | | |
| **8th week**  FEB 20-25 | Wilson’s theorem. | | |
| **9th week**  FEB 27- MARCH 4 | The legendre symbol and its properties. | | |
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|  | **10th week**  MARCH 13-18 | Quadratic reciprocity. | | |
| **11th week**  MARCH 20-25 | Quadratic congruences with composite moduli. | | |
|  | **12th week**  MARCH 27- APRIL 1 | Public key encryption. | | |
| **13th week**  APRIL 3-8 | RSA encryption and decryption. | | |
| **14th week**  APRIL 10-15 | The equation x2+y2=z2. | | |
| **15th week**  APRIL 15-22 | Fermat’s last theorem. | | |
| **APRIL 24-29- REVISION** | | | | |