G. S. SANYAL SCHOOL OF TELECOMMUNICATIONS

IIT KHARAGPUR

- **Spread Spectrum Communications and Jamming [SSCJ]: (3-0-0, 3 credits), Prerequisite – Digital Communications [EC31002] or equivalent**

Types of spread spectrum systems – direct sequence, frequency hopping, time hopping, chirp and hybrid methods (4);
Sequences for spread spectrum communication – features, properties and generation methods (4);
Initial code acquisition – techniques and performance analysis (3);
Code tracking – techniques and performance analysis (3);
Performance of spread spectrum systems (4);
Spread spectrum systems in jamming environments (8);
Low probability of intercept methods (3);
CDMA digital cellular systems – capacity analysis (4);
Spread spectrum and electronic counter measure (7).

Reading resources:

1. Spread spectrum Systems by R. C. Dixon
2. Introduction to Spread Spectrum Communications by R. L. Peterson, R. E. Ziemer and D. E. Borth, Pearson Education, 1995
3. Spread Spectrum Communications Handbook by M. K. Simon, J. K. Omura, R. A. Scholtz and B. K. Levitt
4. Principles of Spread Spectrum Communication Systems by D. Torrieri, Springer, 2005
5. Modern Communications Jamming Principles and Techniques by R. A. Poisel, 2nd Ed., Artech House, 2011
6. CDMA Systems capacity Engineering by K. Kim and I. Koo, Artech House, 2005
7. Spread Spectrum Systems for GNSS and Wireless Communications by J. K. Holmes
8. Adaptive WCDMA Theory and Practice by S. G. Glisic
9. Signal design for Good Correlation by S. W. Golomb and G. Gong, Cambridge Univ. Press, 2005