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**Department: PHYSICS**

**3<sup>rd</sup> YEAR: SEMESTER – VI (UG/SHPHS/604/DSE-4) DSE T8**

**COMMUNICATION ELECTRONICS**

**Credit-4; Full Marks: 25**

**Subject Teacher: Mahitosh De**

**SYLLABUS UNITIZATION**

Month	Week	Topics to be taught
March	1	Electronic Communication; Introduction to communication-means and modes. Need for modulation.
March	2	Block diagram of an electronic communication system and explanation.
March	3	Brief idea of frequency allocation for radio communication system in India (TRAI).
April	1	Electromagnetic communication spectrum, band designations and usage.
April	2	Channels and base band signals
April	3	Concept of noise, signal to noise (S/N) ratio.
April	4	<i>Class Test.</i>
May	1	Satellite Communication- Introduction, need. Geosynchronous satellite orbits, geostationary satellite. Advantages of geostationary satellites. Satellites visibility.
May	2	Transponders(C-Band), Path loss, ground station. Simplified block diagram of earth station. Uplink and downlink.
May	3	Mobile Telephone System- Basic concept of mobile communication, frequency bands used in mobile communication. Concept of cell sampling and cell splitting
May	4	SIM number, IMEI number, need for data encryption, architecture (block diagram) of mobile communication network.
June	1	Idea of GSM, CDMA, TDMA and FDMA technologies. Simplified block diagram of mobile phone handset, 2G,3G and 4G concepts (qualitative only). GPS navigation system (qualitative idea only).
June	2	<i>Class test.</i>
June	3	Revision and problem solving exercise.
June	4	Revision and problem solving exercise.

References;

1. Electronic communication system, G. Kennedy,1999, Tata McGraw Hill