BSE2203 Computer Networks & Data Communication (4CU)

Course Objectives; Upon successful completion of this course students should be able to: (i) Master the terminology and concepts of the OSI reference model and the TCP/IP reference model; (ii) Master the concepts of protocols, network interfaces, and design/performance issues in local area networks and wide area networks; (iii) Demonstrate knowledge of wireless networking concepts; (iv) Appreciate contemporary issues in networking technologies; and (v) Demonstrate knowledge of network tools.

Course content: Introduction to Networks: definition, advantages, types, configurations; The OSI/ISO reference model; Transmission media: magnetic media, twisted pair, coaxial, fiber-optics; Data encoding: straight, Manchester, differential Manchester, satellite ;Digital versus Analog transmission; Modems, modulation and their standards, codes and pulse code modulation; Integrated Services Digital Networks (ISDN); Network Access Protocols; Passive versus dynamic allocation; LAN standards: 802.3 (Ethernet), 802.4 (token bus), 802.5 (token ring); Computer Network security, Active and Passive Attacks; Network layer and Network layer protocols; Transport layer and Transport layer protocols. Furthermore, the course considers problems on each layer of a multilayered communication model, and describes some typical solutions to such problems.

References

•JamesF.KuroseandKeithW.Ross.ComputerNetworking-ATopDownApproachFeaturing the Internet, 3rdedition, Addison-Wesley, ISBN0-321-22735-2.

•Computer Networks: A Systems Approach. L. Peters on and B. Davie

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