# Computer Networks and Internet Protocols

**SWAYAM Prabha Course Code: R23**

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| **PROFESSOR'S NAME** | Dr. Soumya Kanti Ghosh and Dr. Sandip Chakraborty |
| **DEPARTMENT** | Computer Science and Engineering |
| **INSTITUTE** | IIT Kanpur |
| **COURSE OUTLINE** | The domain of Internet has grown in a rapid pace from traditional circuit switched and packet switched small-scale networks to modern high-speed mobile and wireless Internet. A large number of methods, architectures, and designs came up at every protocol level to cop up with the demands for developing a secure and highly dependable information technology infrastructure. The broad objective of the course is to understand - (i) the architecture and principles of today computer networks, (ii) the protocols and their functionalities, (iii) the requirements for the future Internet and its impact on the computer network architecture. In this course, we will broadly cover the basic TCP/IP protocol stack and touch on the next generation computer networks. We will take a top-down approach to cover different protocols at the TCP/IP protocol stack.<br><br>**Course Outline**<br>1. Introduction to Computer Networks History, Circuit Switching and Packet Switching<br>2. TCPIP Protocol Stack - Basic Overview<br>3. Application Layer Services (HTTP, FTP, Email, DNS)<br>4. Transport Layer Primitives, Connection Establishment and Closure<br>5. Flow Control and Congestion Control at the Transport Layer<br>6. Transmission Control Protocol, Basic Features, TCP Congestion Control<br>7. Network Layer Primitives, IP Addressing<br>8. IP Routing, Intra Domain Routing Protocols, Inter Domain Routing Protocols (BGP)<br>9. IP Services, SNMP, ARP<br>10. Data Link Layer Service Primitives, Forwarding, Flow Control, Error Control<br>11. Media Access Control - Channel Access Protocols, Framing<br>12. End to End Principles of computer networks. |