**DEPARTMENT OF ELECTRICAL ENGINEERING**

**Course Descriptive File**

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| 1 | Course Title | Broadband Communication |
| 2 | Course Code |  TE-420 |
| 3 | Credit Hours | 3 |
| 4 | Pre-requisites | Analog & Digital Communication Systems |
| 6 | Semester | II |
| 7 | Resource Person | Mr.Sajjad Rabbani |
| 8 | Contact Hours (Theory) | 48 |
| 9 | Class | MS EE |
| 10 | Office Hours  | 8-4pm |
| 11 | Email | sajjadra94@gmail.com |
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| 12 | Course Description / Outline as per Scheme of Studies ( SoS) |
| Introduction & detail of advanced areas of High Speed (Broadband) Communication systems and future trends. The importance of Broadband Communication Systems, Components of Broadband Network Architecture, Introduction to broadband access technologies, Data Networks, Packet Switching and Circuit Switching, Broadband Technologies: B-ISDN overview, ISDN interfaces detail ( BRI & PRI ),ISDN switching, ISDN channel specifications Broadband ISDN: Abilities and benefits of B-ISDN, B-ISDN Network elements and structures, reference points, protocols, Functions of different Layers in B-ISDN model Digital Subscriber Line: Digital Subscriber Line (DSL) introduction,Detailed study of the different types of xDSLs, the DSLAM detail , DSL broadband technologies (HDSL, SDSL, ADSL, VDSL), Line Codes (QAM/CAP and DMT) in DSL, X.25, Frame Relay, Asynchronous Transfer Mode (ATM): Protocol architecture, logical connections, Control Signaling. ATM cells, Cell format, service categories, adaptation layer protocol. SDH Introduction. |
| 13 | Course Objectives as per Scheme of Studies (SoS) |
| * To provide an overview of the fundamental concepts and technologies involved in broadband communication.
* This course continues to develop broadband network communication theory

concepts, broadband access technologies, transmission standards, broadband network architecture, techniques, and design approaches. |
| 14 | Books  |
| * Introduction to Broadband communication systems

(Matthew N. O. Sadiku)* Telecommunication Switching and Networks

(P.Gnanasivam ) 2nd edition* Introduction to Data Communications and Networking

(Wayne Tomasi )* Telecommunications Switching, Traffic and networking

(J.E Flood ) |