

MTD312 Applications of Multimedia Networks

Level: 3

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JAN

Synopsis:

MTD312e introduces students to the fundamentals of the network carrying requirements for typical standard multimedia applications. It reviews mechanisms of coding methods for audio and video technological applications taught in the courses MTD205e Audio Technology and MTD207e Video Technology. The next section of the course explains the required standard network protocols to carry multimedia content and examines the interrelationship between multimedia applications and the performance aspects of a network carrying the high quality applications data. Finally, through the usage of case studies, insights into existing network carrying solutions for high quality multimedia data in the commercial market place are modeled.

Topics:

- Introduction to different types of multimedia networks
- Network organisation standards
- Market penetration / usage of multimedia networks
- Quality of Service (QoS)
- Revision of audio and video coding methods / transmission
- Network functions supporting high quality multimedia data carriage
- Synchronization and adaptation performance
- Session Initiation Protocol (SIP)
- Additional Standard Multimedia Protocols
- Home Networks (UPnP, DLNA, HGI)
- Internet Protocol Television (IPTV)
- Case studies deploying Global Webcast, Digital Signage and Telepresence systems

Textbooks:

Peterson, L L; Davie, B S: Computer Networks, A Systems Approach 5th Edition 2012 Morgan Kaufmann.

ISBN-13: 9780123850591

Peterson, L L; Davie, B S: Computer Networks, A Systems Approach 5th Edition 2012 Morgan Kaufmann.

ISBN-13: 9780123850591-AA

Learning Outcome:

- Differentiate the types of multimedia networks in accordance to data carriage requirements.
- Debate the usage of appropriate network functions to support high quality multimedia data carriage.
- Appraise the importance of network synchronous and adaptation performance in a multimedia network.
- Analyze quality of service factors.
- Apply the data streaming concept that applied to the multimedia content.
- Analyze digital audio and video distribution.
- Recommend a suitable audio or video coding technique for optimal transmission through a multimedia network.
- Test the performance of Home Network Protocols and IPTV using laboratory models.
- Critique solutions to network performance.

Assessment Strategies:

Continuous Assessment Component	Weightage (%)
TUTOR-MARKED ASSIGNMENT	12
PRE-CLASS QUIZ	2
LAB REPORT	12
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
Sub-Total	30

Examinable Component	Weightage (%)
Written Exam	70
Sub-Total	70

Weightage Total **100**