relays, Microelectronic relays. (Text 1) **L1, L2**

**Course Outcomes:** At the end of the course students should be able to:

- Describe the characteristics of different power devices and identify the various applications associated with it.
- Illustrate the working of power circuit as DC-DC converter.
- Illustrate the operation of inverter circuit and static switches.
- Determine the output response of a thyristor circuit with various triggering options.
- Determine the response of controlled rectifier with resistive and inductive loads.

**Evaluation of Internal Assessment Marks:**

It is suggested that at least 4 experiments of Power Electronics to be conducted by the students. This activity can be considered for the evaluation of 05 marks out of 20 Internal Assessment (IA) Marks, reserved for the other activities.

**Text Books:**

1. Mohammad H Rashid, Power Electronics, Circuits, Devices and Applications, 3rd/4th Edition, Pearson Education Inc, 2014, ISBN: 978-93-325-1844-5.
2. M.D Singh and K B Khanchandani, Power Electronics, 2nd Edition, Tata Mc-Graw Hill, 2009, ISBN: 0070583897

**Reference Books:**

1. L. Umanand, Power Electronics, Essentials and Applications, John Wiley India Pvt. Ltd, 2009.
2. Dr. P. S. Bimbhra, "Power Electronics", Khanna Publishers, Delhi, 2012.
3. P.C. Sen, "Modern Power Electronics", S Chand & Co New Delhi, 2005.
4. Earl Gose, Richard Johnsonbaugh, Steve Jost, Pattern Recognition and Image Analysis, ePub eBook.

# MULTIMEDIA COMMUNICATION
## B.E., VII Semester, Electronics & Communication Engineering/ Telecommunication Engineering
[As per Choice Based credit System (CBCS) Scheme

| Subject Code | 15EC741 | IA Marks | 20 |
|---|---|---|---|
| Number of Lecture Hours/Week | 03 | Exam Marks | 80 |
| Total Number of Lecture Hours | 40 (08 Hours / Module) | Exam Hours | 03 |
| CREDITS – 03 | | | |

**Course objectives:** This course will enable students to:

- Gain fundamental knowledge in understanding the basics of different multimedia networks and applications.
- Understand digitization principle techniques required to analyze different media types.
- Analyze compression techniques required to compress text and image and gain knowledge of DMS.
- Analyze compression techniques required to compress audio and video.
- Gain fundamental knowledge about multimedia communication across different networks.

| Module-1 | RBT Level |
|---|---|
| **Multimedia Communications:** Introduction, Multimedia information representation, multimedia networks, multimedia applications, Application and networking terminology. (Chap 1 of Text 1) | L1, L2 |

| Module-2 | |
|---|---|
| **Information Representation:** Introduction, Digitization principles, Text, Images, Audio and Video (Chap 2 of Text 1) | L1, L2 |

| Module-3 | |
|---|---|
| **Text and image compression:** Introduction, Compression principles, text compression, image Compression. (Chap 3 of Text 1) <br><br> **Distributed multimedia systems:** Introduction, main Features of a DMS, Resource management of DMS, Networking, Multimedia operating systems (Chap. 4 - Sections 4.1 to 4.5 of Text 2). | L1, L2, L3 |

| Module-4 | |
|---|---|
| **Audio and video compression:** Introduction, Audio compression, video compression, video compression principles, video compression. (Chap. 4 of Text 1). | L1, L2, L3 |

| Module-5 | |
|---|---|
| **Multimedia Communication Across Networks:** Packet audio/video in the network environment, Video transport across generic networks, Multimedia Transport across ATM Networks (Chap. 6 - Sections 6.1, 6.2, 6.3 of Text 2). | L1, L2 |

**Course Outcomes:** After studying this course, students will be able to:
- Understand basics of different multimedia networks and applications.
- Understand different compression techniques to compress audio and video.
- Describe multimedia Communication across Networks.
- Analyse different media types to represent them in digital form.
- Compress different types of text and images using different compression techniques and analyse DMS.

**Question paper pattern:**
- The question paper will have ten questions.
- Each full question consists of 16 marks.
- There will be 2 full questions (with a maximum of Three sub questions) from each module.
- Each full question will have sub questions covering all the topics under a module.
- The students will have to answer 5 full questions, selecting one full question from each module.

**Text Books:**
1. Fred Halsall, "Multimedia Communications", Pearson education, 2001 ISBN - 9788131709948.

2. K. R. Rao, Zoran S. Bojkovic, Dragorad A. Milovanovic, "Multimedia Communication Systems", Pearson education, 2004. ISBN -9788120321458

**Reference Book:**
Raifsteinmetz, Klara Nahrstedt, "Multimedia: Computing, Communications and Applications", Pearson education, 2002. ISBN -9788177584417

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