

## COLLEGE OF ENGINEERING

LAVALE, PUNE-412115

# **Department of Electronics and Telecommunication**

B.E. (Electronics/Electronics & Telecommunication Engineering)
2015 Course

Course Names Subject Code: Computer Networks (404182)

## **Course Outcomes (COs):-**

- 1. Understand fundamental underlying principles of computer networking
- 2. Describe and analyze the hardware, software, components of a network and the interrelations.
- 3. Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies;
- 4. Have a basic knowledge of the use of cryptography and network security;
- 5. Have a basic knowledge of installing and configuring networking applications.
- 6. Specify and identify deficiencies in existing protocols, and then go onto select new and better protocols.

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
CO-1			Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-2			Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-3			Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-4			Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-5			Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-6		$\sqrt{}$	Χ	Χ	$\sqrt{}$	Χ	Χ	Χ



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# **Department of Electronics and Telecommunication**

B.E. (Electronics/Electronics & Telecommunication Engineering)
2015 Course

Course Names Subject Code: Microwave Engineering (404183)

### **Course Outcomes (COs):-**

- 1. Formulate the wave equation in wave guide for analysis.
- 2. Identify the use of microwave components and devices in microwave applications.
- 3. Understand the working principles of all the microwave tubes
- 4. Understand the working principles of all the solid state devices
- 5. Choose a suitable microwave tube and solid state device for a particular application
- 6. Carry out the microwave network analysis
- 7. Choose a suitable microwave measurement instruments and carry out the required measurements.

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
CO-1			Χ	Χ	$\sqrt{}$	Χ	Χ	Х
CO-2			Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-3			Χ	Χ	$\sqrt{}$	Χ		Χ
CO-4			Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-5			Χ	Χ	$\sqrt{}$	Χ	Χ	Х
CO-6		$\sqrt{}$	Χ	Χ	$\sqrt{}$	$\sqrt{}$	Χ	Х
CO-7		Χ	Χ	Χ	$\sqrt{}$	$\sqrt{}$	Χ	Χ



# **COLLEGE OF ENGINEERING**

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# **Department of Electronics and Telecommunication**

B.E. (Electronics & Telecommunication Engineering)
2015 Course

Course Names Subject Code: Embedded Systems & RTOS(404184)

## **Course Outcomes (COs):-**

- 1. Get insight of design metrics of Embedded systems to design real time applications to match recent trends in technology.
- 2. Understand Real time systems concepts.
- 3. Understand Linux operating system and device drivers.
- 4. Get to know the hardware software co design issues and testing methodology for Embedded system.

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
CO-1	$\sqrt{}$	$\sqrt{}$	Χ	Χ	$\sqrt{}$	Χ	Χ	Х
CO-2	$\sqrt{}$	$\sqrt{}$	Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-3	$\sqrt{}$	$\sqrt{}$	Χ	Χ	Χ	Χ	Χ	Χ
CO-4	$\sqrt{}$	$\sqrt{}$	Χ	Х	$\sqrt{}$	Х	Х	Х



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# **Department of Electronics and Telecommunication**

B.E. (Electronics & Telecommunication Engineering)
2015 Course

Course Names Subject Code: Electronic Product Design(404185)

# **Course Outcomes (COs):-**

- 1. Understand various stages of hardware, software and PCB design.
- 2.Importance of product test & test specifications.
- 3. Special design considerations and importance of documentation.

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
CO-1	$\sqrt{}$	$\sqrt{}$	Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-2	$\sqrt{}$	$\sqrt{}$	Χ	Χ	$\sqrt{}$	Χ	Χ	Χ
CO-3	$\sqrt{}$	V	Χ	Χ	Χ	Χ	Х	Χ



# COLLEGE OF ENGINEERING

LAVALE, PUNE-412115

# **Department of Electronics and Telecommunication**

B.E. (Electronics & Telecommunication Engineering)
2015 Course

**Course Names Subject Code: Mobile Communication**(404189)

## **Course Outcomes (COs):-**

- 1. Explain and apply the concepts telecommunication switching, traffic and networks Analyze the telecommunication traffic.
- 2. Analyze radio channel and cellular capacity.
- 3. Explain and apply concepts of GSM and CDMA system.

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
CO-1	$\checkmark$	$\sqrt{}$	Χ	$\sqrt{}$	$\sqrt{}$	Χ	Χ	Χ
CO-2	V	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	Χ	Χ	Χ
CO-3		V	Χ	Х	Χ	Χ	Χ	Х



## COLLEGE OF ENGINEERING

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# **Department of Electronics and Telecommunication**

B.E. (Electronics & Telecommunication Engineering)
2015 Course

**Course Names Subject Code: Mobile Communication (404189)** 

# **Course Outcomes (COs):-**

- 1. Explain and apply the concepts telecommunication switching, traffic and networks & Analyze the telecommunication traffic.
- 2. Analyze radio channel and cellular capacity.
- 3. Explain and apply concepts of GSM and CDMA system.

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
CO-1	$\sqrt{}$	$\checkmark$	Χ	$\sqrt{}$	✓	Χ	Χ	Х
CO-2	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	Χ	$\sqrt{}$	$\sqrt{}$
CO-3	$\sqrt{}$	$\sqrt{}$	Χ	Χ	Χ	Χ	Χ	Χ



# COLLEGE OF ENGINEERING

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# **Department of Electronics and Telecommunication**

B.E. (Electronics & Telecommunication Engineering)
2015 Course

# Course Names Subject Code: Broadband Communication Systems (404190)

## **Course Outcomes (COs):-**

- 1. Carry out Link power budget and Rise Time Budget by proper selection of components and check its viability.
- 2. Carry out Satellite Link design for Up Link and Down Link.

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
CO-1		$\sqrt{}$	Χ	$\sqrt{}$	$\sqrt{}$	Χ	Χ	Χ
CO-2	V	V		V	V	Χ	V	



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# **Department of Electronics and Telecommunication**

B.E. (Electronics & Telecommunication Engineering)
2015 Course

# Course Names Subject Code: Audio Video Engineering(404191)

## **Course Outcomes (COs):-**

- 1. To study the analysis and synthesis of TV Pictures, Composite Video Signal, Receiver, Picture Tubes and Television Camera Tubes.
- 2. To study the various Colour Television systems with a greater emphasis on television standards.
- 3. To study the advanced topics in Digital Television and High Definition Television.
- 4. To study audio recording systems such CD/DVD recording, Audio Standards, and Acoustics principles.

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
CO-1		$\sqrt{}$	Χ	$\sqrt{}$	$\sqrt{}$	Χ	Χ	Χ
CO-2	Χ	$\sqrt{}$						
CO-3		Χ	$\sqrt{}$	Χ	Χ	Χ	Χ	Χ
CO-4	$\sqrt{}$	$\sqrt{}$	Χ	$\sqrt{}$	$\sqrt{}$	Χ	Χ	Χ



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B.E. (Electronics/Electronics & Telecommunication Engineering)
2015 Course

Course Names Subject Code: Wireless Networks (404192)

# **Course Outcomes (COs):-**

- 1. Keep himself updated on latest wireless technologies and trends in the communication a field
- 2. Understand the transmission of voice and data through various network.

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
CO-1		$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	Χ	$\sqrt{}$	$\sqrt{}$
CO-2	$\sqrt{}$	$\sqrt{}$	Χ	Χ	Х	Χ	Χ	Х