

## PARTICIPANTS

Faculty from AICTE Institutions / Universities working in related fields are eligible. Participants should bring a letter of nomination from Head of the Institution stating that they are being deputed for the course. The selection is based on first cum first serve basis.

## HOW TO APPLY:

Interested participants can register by using the following link:

Registration fee: Rs. 300/-

Registration Link:

<https://forms.gle/fK6w2a7GozoyhViSA>

Last Date for Registration: **03.09.2022**

Resource Persons:

Experts from industry and prestigious academic institutions.

## For More Information

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**Dr. P. Narayana**, Founder Chairman

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# A Five Day FDP on KEY ENABLING TECHNIQUES USING 5G COMMUNICATIONS

(September 05<sup>th</sup> to 09<sup>th</sup>, 2022)



# 5G



Organized by

**Department of  
Electronics & Communication  
Engineering**



**NARAYANA**  
ENGINEERING COLLEGE::NELLORE  
(AUTONOMOUS)

NARAYANA AVENUE, MUTHUKUR ROAD,  
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## ABOUT THE INSTITUTE:

Narayana Engineering College is one of the premier engineering colleges in Andhra Pradesh sponsored by Narayana group of educational institutions. The college was established in 1998 with a vision to impart quality technical education and is affiliated to JNTU, Ananthapuramu, and completed 24 years of existence in technical education. Narayana Engineering College was conferred "Autonomous" status by UGC with effect from Academic Year 2020-21 for a period of ten years. The college is Permanently Affiliated to JNTUA, Ananthapuramu and is Accredited by NAAC with A+ GRADE and awarded "A" grade by Govt. of AP.

Narayana Engineering College is located in India's southern State, Andhra Pradesh. This college is located near to the National Highway (NH-5) Nellore. The nearest airport is Chennai, 3 hours drive away. The college offers B.Tech. Programmes in 5 faculties of Engineering namely, Electronics & communication, Computer Science, Electrical & Electronics, Mechanical and Civil Engineering. The college also offers Post Graduate programmes MCA, MBA. and M.Tech. in VLSI, EPS, & CSE, Our motto is to give the students an excellence in his or her career, our goal is to shape their future in all aspects.

## ABOUT THE DEPARTMENT:

The aim of the department is to produce Electronics & Telecommunication Engineers, who combine academic excellence with practical

The department of Electronics and Communication Engineering came into existence at Narayana engineering college in 1998 by the approval of the All India Council for Technical Education (AICTE).

The department has progressed rapidly and is now regarded as one of the premiere departments, with excellent infrastructure and a highly qualified and dedicated faculty.

At present, the department is offering B.Tech (ECE) and M.Tech (VLSI) with total intake of 180 and 18 Students respectively. The majority of our students have been well placed in many companies through campus interviews and many of our students are pursuing their higher education at various premier institutions like IIT's, NIT's and also in abroad.

The department involved in teaching and research in diverse aspects of Communications, VLSI design, Embedded Systems, Signal Processing, Image Processing and Neural Networks. Apart from teaching, the faculty members have been vigorously pursuing research and regularly publishing research papers in various National and International Journals of reputed as well as in prestigious conferences.

## ABOUT FDP:

The main objective of this course is to clarify various key technologies that are used in the upcoming 5G standard. While 4G brought in a deluge of infotainment services, 5G aims to provide extremely low delay services, great service in crowd, enhanced mobile broadband

(virtual reality being made real), ultra reliable and secure connectivity, ubiquitous QoS, and highly energy efficient networks. The above mentioned requirements are expected to be met by several advancement in technologies such as new waveforms (termed as 5G NR, the new radio), mm wave technology, massive multiple antenna technologies, non orthogonal multiple access, device to device communications, and ubiquitous quality of service among others. In this course we aim to provide insight into the fundamentals of the above mentioned methods, which are essential components of 5G.

An unique feature of this course will be demonstrating the interdisciplinary nature of 5G communications, which requires knowledge of wireless propagation channel and wireless front-end. Keeping this in mind, the experts for this course are invited from various specializations like wireless communication, antenna engineering, microwave engineering etc.

## CONTENTS TO BE COVERED:

- Overview of 5G communication technology
- Modulation and coding in 5G
- Waveform in 5G
- MIMO and Massive MIMO in 5G
- Propagation Characteristics of 5G channel modes
- 5G in medical domain
- 5G for IoT
- Cognitive radio in 5G