

**AICTE Sponsored
Short Term Training Program (STTP)**

**on
Hands On Project-Based Approach For 5G Design And
Development Using MATLAB**

Nov 2020-Jan 2021

Registration Form

Name: _____

Designation: _____

Organization: _____

Correspondence Address: _____

_____ PIN code _____

Phone # _____

E-mail: _____

Whatsapp MobileNo _____

Category: *Academic/Industry/others*

Signature of the Participant:

Date: _____

Place: _____

Participants need to fill this registration form and upload the scanned copy in PDF format in the below registration link.

Registration Link

<https://forms.gle/Aa6oA66WnLRu16iS6>

Last Date for Registration: on or before 30th Oct., 2020

ELIGIBILITY & REGISTRATION: No registration fee

The Faculty members, research scholars, PG students of AICTE approved Engineering colleges, Polytechnics working in the field of wireless communications are eligible to apply. Admissions will be offered subject to the availability on a first-come, first-served basis & area of specialization with a maximum attendance of 100

MODE OF CONDUCTION: Online Mode - 3 times as per the dates announced, on the same theme but with different audience.

Online meeting link will be sent through Whatsapp and registered email. Since Hands on sessions will be conducted in MATLAB, all the participants are informed to get install MATLAB tool in their systems

CERTIFICATION:

E-Certificates will be issued to those participants who attend all the sessions of the programme and clear the online exam as per the norms stipulated by the AICTE.

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**AICTE
Sponsored
Short Term
Training
Program (STTP)**



**“Hands on Project-Based Approach for
5G Design and Development using
MATLAB”**

STTP-I (2-7 Nov., 2020)

STTP-II (14-19 Dec., 2020)

STTP-III (18-23 Jan., 2021)

Coordinator

Prof. K. Ashoka Reddy
Dept. of ECE

Co-coordinator

Sri B. Narsimha,
*Assistant Professor,
Dept. of ECE*

Contact No: +91-8801402867

Organized by

**Department of Electronics & Communication Engineering
Kakatiya Institute of Technology & Science, Warangal**
*(An Autonomous Institute under Kakatiya University)
(Accredited by NAAC with 'A' Grade)*

**Opp: Yerragattu Gutta, Hasanparthy (M),
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ABOUT THE INSTITUTE

Kakatiya Institute of Technology and Science, Warangal popularly known as **KITSW**, was established in 1980 by **Ekasila Education Society (EES), Warangal**, a philanthropic society, with a primary objective of providing quality technical education. KITSW is recognized by the AICTE and also under section 2(F) and 12(B) of UGC act 1956. The UGC has granted autonomous status in 2014 under Kakatiya University (KU), Warangal. It is accredited by the NAAC with A grade (CGPA: 3.21) and all the UG engineering programmes are accredited by the NBA, New Delhi.

Located in 68 acres of lush green sprawling campus, it is one of the premier institutes of Telangana. Over the years, it has attracted academicians of proven competence onto its faculty, augmented the infrastructural facilities, modernized laboratories, placed its products in reputed organizations all over the world and thus received recognition in industry and academia. At present, it is offering UG in nine branches of engineering, PG in six engineering specializations and MBA. The KU recognized CE, ME, E&I and CSE departments as research centers for PhD programmes. The faculty at KITSW is now integrating research, innovation and incubation culture into course teaching to prepare students to gain tech skills for industry 4.0.

Warangal city is well connected to other cities by rail and road. The institute is located on Warangal - Karimnagar highway.

ABOUT ECE DEPARTMENT

The Department of Electronics and Communication Engineering was established in 2000 with an intake of 45 and subsequently increased to 180. In 2008, the department was accredited for the first time by National Board of Accreditation (NBA), New Delhi under Tier II for a period of 3 years. Since then, the department has been getting timely reaccredited and at present its accreditation status is active till June 2021. M. Tech Course in Digital Communications was started in the year 2004 in association with E & I Engineering department with an intake of 18 students which was later enhanced to 25 and presently it is under the department of ECE. During the academic year 2019-20, the dept has started B.Tech in Electronic Communication and Instrumentation (ECI) engineering with an intake of 60.

The department has 33 dedicated and qualified faculty members with 3 Professors, 5 Associate Professors, 25 Assistant Professors. Eleven faculty members have Ph.D. and 20 faculty members are pursuing Ph.D.

Three centers of excellence are established in the department: (i) Transfinite iLab, (ii) TIIC in association with TITA, and (iii) BLACKBUCK CoE.

The department has very well equipped and modernized laboratories to cater to the needs of UG and PG courses.

- Analog Communication Laboratory
- Analog & Digital Simulation Laboratory
- Digital Communication Laboratory
- Microprocessor & Microcontroller Laboratory
- Microwave & Optical Fiber Communication Lab
- Pulse & Digital Circuits Laboratory
- Signal Processing Laboratory
- Integrated Circuits Laboratory
- Digital Electronics Laboratory.

PREVIOUSLY RECEIVED FUNDS BY THE DEPT

Prof. K. Ashoka Reddy received Rs. 6.5 lakh in 2017 from the AICTE toward a 2 Week FDP on "Hands on approach of OFDM system designing in MATLAB: Dr. M. Chandrasekhar, Asst. Prof., got Rs. 45.00 lakh research grant in 2018 from the SERB of DST on "Design and Development of printed micro strip Antennas for LTE & GPS Applications". Sri A. Srinivas, Asst. Prof., received a seminar grant of Rs. 7.0 lakh on "Deep Learning," in 2019 from DST. For academic year 2020-21, the AICTE has sanctioned one STTP with Rs. 3.4 lakh, one FDP with Rs. 5.6 lakh to Prof. K. Ashoka Reddy and one MODROBS sanctioned to Prof. B. Rama Devi, Head Dept. of ECE.

ABOUT THE STTP

Over the years, the mobile communication has been transformed from a pure telephony system to a network that can transport rich multimedia contents, which has greatly improved people's ability to communicate. 5G is focused not only on increasing data rate rather it provides a new path for thinking. 5G would need a mobile communication network that can accommodate enormously large number of connected devices, machine to machine communication, ambient intelligence and Internet of Things. It will require enormous upgrades and new set of technologies. The parameters on which 5G system will be developed include system capacity, data throughput performance, reliability, security, latency, energy consumption, technology convergence and cost.

The objectives of this STTP are to

- Impart knowledge on the Basic 5G communication system and its simulation
- discuss the challenges in 5G which includes spectral efficiency, complexity, channel estimation and Peak to Average Power Ratio(PAPR) reduction
- design and analyze the basic 5G communication system in MATLAB

In India, the UG and PG programmes of Electronics and communication engineering offer various advanced courses in the field of communication. 5G is very potential area of study where students can be guided to take up projects both at UG and PG level. Hence hands-on training to the Electronics faculty of engineering colleges will make them competent to guide students on good projects/dissertations.

BENEFITS TO THE FACULTY

- Faculty will get trained in the area of 5G Communication
- Faculty will start guiding meaningful projects to UG and PG students
- Faculty will be introduced to 5G research

STTP COURSE CONTENTS

- Hands on usage of Signal processing and communication system toolboxes of MATLAB
- Implementation of Basic OFDM systems
- Channel modelling and BER analysis
- Modulation Techniques
- Design and analysis of 5G waveforms like FBMC, F-OFDM, UPMC, GFDM, etc.
- 5G Based Projects
- Hands on Lab sessions

Resource Persons

Eminent faculty from IITs, NITs, IIITs, reputed Universities /colleges and industry experts

Address for Communication

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