

## Why Artificial Intelligence?

Artificial Intelligence (AI) builds smart machines that imitate the human behavior. This course aims to discuss neuromorphic computing based on promising spin electronics technologies for AI applications. Recently, neuromorphic computing has demonstrated huge potential for information processing at low power that leads to highly energy efficient systems. This course will help participant gain knowledge about design of AI systems from device to system level. Implementation of such systems with emerging devices will also be dealt.

### Topics Covered

- ✓ Introduction to Artificially Intelligent Systems
- ✓ Neural Network and Neuromorphic Systems
- ✓ Energy Efficient Computing in Nanoscale CMOS
- ✓ High-speed Semiconductor Devices
- ✓ Spintronic Devices for Neuromorphic computing
- ✓ Beyond traditional ionic memristors
- ✓ Sparse Reservoir Computing
- ✓ Learning in Brain Circuits

### Benefits of the Course

- ✓ Participants will understand state-of-the-art AI systems, neural network and hardware implementation of neuromorphic systems.
- ✓ The participants will learn in-memory computation and usage of emerging devices for computation.
- ✓ The participants will learn computational models aiming to advance our understanding of the brain learning mechanisms.

### CHIEF PATRONS

**Shri. Marri Laxman Reddy**  
Chairman, MLRITM

**Shri. Marri Rajashekar Reddy**  
Founder Secretary, MLRITM

### PATRON

**Dr. K. Venkateswara Reddy**  
Principal, MLRITM

### CONVENERS

**Dr. Srinivas Bachu**  
HOD-ECE, MLRITM

**Mr. Bhushan Kundeti**  
Controller of Examinations

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### CO-ORDINATORS

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AICTE Sponsored

Short Term Training Programme

on

**“ARTIFICIAL INTELLIGENCE:  
DEVICES TO CIRCUITS”**

**Date: 01-02-2021 to 06-02-2021**

**Venue: Department of ECE,  
MLRITM (Autonomous Campus)**



**Organized by**

**Department of**

**Electronics and Communication Engineering**

**MARRI LAXMAN REDDY  
INSTITUTE OF TECHNOLOGY & MANAGEMENT**

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

NAAC Accredited Institution with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

[www.mlritm.ac.in](http://www.mlritm.ac.in)

## About the College

Marri Laxman Reddy Institute of Technology and Management (UGC Autonomous), Hyderabad was established in 2009, by a devoted group of intellectuals, eminent professionals and industrialists, having a long and outstanding experience in educational field with a mission of spreading quality education among students.

This college is accredited by NAAC with 'A' Grade. All the 5 programmes of the college i.e., CSE, EE, ECE, MECH, CIVIL were accredited by NBA. MLRITM got permanent affiliation from JNTUH and SIRO for receiving central excise import duty concessions towards the purchase of laboratory equipment from foreign countries.

## About the Department

The Department of Electronics and Communication Engineering was established in the year 2009 with the intake of 60 students and rapidly growing. The intake number has been increased to 216 by 2012. In 2012, the department started M.Tech program with specialization in Embedded Systems with an intake of 24. The department has got various international and national certifications which enhances the rank of the department.

The department has got accreditation from NAAC with 'A' grade in 2015 and NBA in 2016. The department has very well trained faculties with Professors, Associate and Assistant Professors. The faculties are qualified and proficient with a wide range of experience in academics and industry. The faculty members of our department have published a large number of research papers in referred journals like IEEE Transactions, Springer, Wiley, Elsevier and etc.

## About The Programme

This STTP is designed to focus on the smart perspectives of Artificial Intelligence and Its application in devices and circuits. This STTP will provide an overview of key concepts and technologies required for the implementation of neuromorphic computing. We will present the usage of emerging devices for neuromorphic computing systems. Participants will be able to understand various applications of neuromorphic computing for AI. This program will provide an understanding on the principles governing the learning and memory of the neuronal connections.

## Objective of the Course

- ✓ To provide an overview of key concepts and technologies required for implementation of neuromorphic computing.
- ✓ To present the usage of emerging devices for neuromorphic computing systems
- ✓ To understand various applications of neuromorphic computing for AI
- ✓ To understand the principles governing the learning and memory of the neuronal connections.

## Outcomes

This training leads to possibility of new project proposals in the area of artificial intelligence from faculty participants. These research interactive talks among the participants will ignite the necessary inputs for infusing new start-up ideas. Faculty participants will be equipped to share the advancements to students and shall polarize towards innovative projects at UG and PG level. Possible exploration of the application of artificial intelligence in the field of devices and circuits is the major outcome during the sessions.

## Resource Persons

Eminent faculty from Research institute and organizations, IIT's, NIT's, IIIT's, BITS and industry experts will provide theoretical and practical insights about Artificial Intelligence: Devices to Circuits.

## Eligibility

This programme is open to the faculty members of engineering colleges, research scholars and PG students. Also, industry personnel and who have involved with concerned/allied discipline can also attend.

## Registration

**No registration fee.**  
**Registration is limited to 40 participants.**  
**First come first serve basis.**

## Certificate

Attendance will be monitored and **certificate** will be issued based on the minimum of 85% attendance and an average score of 50% in the test, as per **AICTE** guidelines.

## Important Dates

**Last Date for Registration: 20-01-2021**  
**Confirmation of Registration: 25-01-2021**  
**Event Dates: 01-02-2021 to 06-02-2021**

**Registration link:**  
<https://forms.gle/jJJij93KEh6FTtXZZ>