Registration Form

Advanced Applications in Signal Processing and Artificial Intelligence
06.07.2021 to 10.07.2021

1. Name: ……
2. Gender: ……...
3. Designation: ……
4. Department: ……
5. Address: ……..

……...

a. Tel (off): …… Mob: ……...

b. E-mail: _____

6. Educational Qualification: ……..
7. Area of Research: ……
8. Accommodation required: Yes ☐ No ☐
9. Do you want to join as

1) QIP participant ☐ 2) Sponsored ☐

10. Payment details:

Transaction ID/ DD No.: …….....

Date…….. Amount …….

(Please refer the Table over leaf)

11. Signature of the Applicant with date: ….……...

Endorsement of the Head of the Institution/Department

Sri/Smt/Dr _____of _____Department of _____

Organization/ Institute is permitted to attend the STC in **Advanced Applications in Signal Processing and Artificial Intelligence** at IIT Bhubaneswar**.**

Date: _____

Signature of Head of the Institute/Dept. with seal

Course Registration Fee information:

The participation in the course is free for the first thirty registrations for the **faculty** of AICTE approved institutes. However, the applicants from AICTE approved institutions need to deposit a refundable security amount of Rs. 1000/-, and fill in the details of deposit in registration form to secure their seat.

For all other participants the registration charges are given below in table

Participant category	Registration charges
Research scholars/Students	Rs. 500/- + 18% GST (**Total Rs. 590/-**)
AICTE approved Institutes (QIP participant faculty)	**Free up to 30 participants** (on First Come First Serve basis) **Beyond 30 seats:** Rs. 4000/- +18% GST **(Total Rs. 4720/-)**
Sponsored: Non AICTE approved Institutes / Univ./ Research Organisation / Industry	Rs. 5000/- + 18% GST per person **(Total Rs. 5900/-)**

Last date of registration: 3rd July 2021
Bank details for payment:

A/c Name : CEP, IIT Bhubaneswar
Bank A/c No. : 24282010001960
IFSC Code : CNRB0017282
Bank Name : Canara Bank, IIT Bhubaneswar

Mode of instruction: Online, the link will be sent to the participants registered for the course.

The filled out registration and endorsement forms are to be sent to **aaspai.aicte@gmail.com**

Contact persons

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One-week Online Short Term Course on

Advanced Applications in Signal Processing and Artificial Intelligence

July 06-10, 2021

Under QIP scheme of AICTE

Coordinators

Dr. Niladri B. Puhan

Dr. Soumya P. Dash

Organised by

School of Electrical Sciences
Indian Institute of Technology Bhubaneswar
Jatni, Khordha, Odisha-752050

About IIT Bhubaneswar

IIT Bhubaneswar was established in the year 2008 and started functioning in a temporary campus situated at Bhubaneswar city with a vision to be a highly respected Institute in the world for our distinctive knowledge**.** It shifted to its serene permanent campus in Jatni, Khordha in the year 2016. IIT Bhubaneswar is taking long strides to be among the institutions which offer the world class education. With an objective to create technologists and scientists of highest calibre, the institute targets to provide its students with holistic education and opportunities to get empowered with right academic preparations with analytical and creative skills. It boasts of a large number of faculty members working on niche technologies and producing high quality research in the field of engineering and technology. As a result, IIT Bhubaneswar has been ranked 9th overall within the country by Times Engineering Institute Rankings 2019.

About School of Electrical Sciences

School of Electrical Sciences at IIT Bhubaneswar offers a vibrant and research intensive environment and with a focus on quality teaching and research in cutting edge technology at the core, the School offers B.Tech. M.Tech. and PhD programs in broad areas of CSE, ECE and EE disciplines. The School currently focuses on five major research areas: Communications and Signal Processing, Power and Renewable Energy System, Power Electronics and Drives, Microelectronics and Semiconductor Devices, and Computing Techniques and Systems. The objective of the School is to shape graduates into hardcore professionals who would become effective leaders and noteworthy technological innovators.

Course Objectives

The proposed course modules under the TEQIP programme of AICTE are aimed towards enrichment of faculties, scientists and research scholars working within the cross-spectral applications of signal processing and artificial intelligence.

Course Overview

The technological innovations in last few decades have made massive impact on day-to-day lives across the globe in terms of communication, health care, computing etc. While the benefits of the existing technology are quite evident to even a common man, many algorithms, systems and fine-tuned hardware designs invisibly residing within are built upon the important, yet challenging engineering fields such as signal processing and artificial intelligence. Signal processing is intrinsically involved with the technologies that became prevalent during the internet era such as digital communication, multimedia, entertainment etc. For example, it is difficult to imagine the working of multimedia compression standards like JPEG without the power of wavelets and other signal processing-based transforms. Thus, signal processing has been at the centre stage of learning for electrical, electronics and communication engineers and it is also continuously evolving. On the other hand, the theme of artificial intelligence has been around the corner since last several decades with many theoretical advancements. Despite the initial euphoria over creating intelligent machines that can mimic human behaviour and possibly surpass human capability, only recently practical, commercial scale AI systems have started to show their efficacy and presence. AI is a massive field with many branches that are overlapping and trying to continuously evolve. Machine learning, with emphasis on deep learning, is very much in the limelight in recent years due to their stupendous success in critical applications like autonomous driving, computer vision, medical imaging etc. While both signal processing and AI are quite mature, any modern application still requires their usefulness to achieve the desired goal. In this context, the course modules are aimed at enriching with wide spectrum of applications such as biomedical processing, biometrics, computer vision, medical imaging, radar signal processing, communication-based signal estimation and soft computing which are inspired by both signal processing and artificial intelligence. Sometimes, their interactions are worthy of investigation, interesting and mutually beneficial to create the state-of-the-art technological solution. Knowledge and experience in both the fields will enable the participant to actively explore several advanced applications in terms of academic and industrial research in future.

Broad topics to be covered

- Cardiovascular Signal Processing with Machine Learning
- Medical Signal Analysis and Classification
- Magnetic Resonance Imaging
- Biometrics with Deep Learning
- Path Planning using Soft Computing
- Radar Signal Processing
- Compressed Sensing
- Food Computing with Deep Learning
- And Recent Trends and Applications in Signal Processing

Course and Faculty

The course would cover the broad spectrum of contemporary and futuristic signal processing and artificial intelligence covering various applications in the proposed filed of interest. The lectures would be taken by the faculty members of IIT Bhubaneswar and the invited speakers from other IITs.