About IIT Kharagpur

Kharagpur - a dusty town tucked away in the eastern corner of India, famous until 1950 as home to the longest railway platform in the world - became the nursery where the seed of the IIT system was planted in 1951. IIT Kharagpur started its journey in the old Hijli Detention Camp in Eastern India, where some of the country's great freedom fighters toiled and sacrificed their lives for India's independence. Spurred by the success of IIT Kharagpur, four younger IITs sprouted around the country in the two following decades, and from these five came thousands of IITians, the brand ambassadors of modern India. It was the success of this one institution at Kharagpur that wrote India's technological odyssey.

The Institute takes pride in its relentless effort to provide the best platform for both education as well as research in the areas of science and technology, infrastructure designs, entrepreneurship, law, management, and medical science and technology. IITKGP is not just the place to study technology, it is the place where students are taught to dream about the future of technology and beam across disciplines, making differences enough to change the world.

Program Features/ Structure

Classroom lectures ~**60%**

Numerical/ Problem solving, Case study and Activity ~**20%**

Hands-on/ Practical ~**20%**

Program Fee

Nil for TEQIP-III sponsored participants

For others – INR 20,000/- (Twenty thousand) **+ GST** @18% per participant

Accommodation

Accommodation will be provided to the TEQIP-III sponsored participants at the campus Guesthouse. For other participants, the same will be offered on chargeable basis as per rules.

How to Apply

Use the link: **https://erp.iitkgp.ac.in/CEP/courses.htm** to apply ONLINE.

Signup → Login → Profile Fillup → Choose a Program → Apply Now

Payment if applicable is to be done **ONLINE** after getting short listed for the program.

Contact us

Dr. Peeyush Soni
Principal Co-ordinator

Agricultural & Food Engineering Dept.
Indian Institute of Technology Kharagpur
Email: soni@iitkgp.ac.in

Program Schedule and Venue

1 week, 4 – 10 Nov. 2019 (9 am – 5 pm)

IIT Kharagpur – Agricultural & Food Engineering Department

Who will benefit (Eligibility)

You are an agricultural engineer/ scientist/ researcher, early career practitioner, agricultural entrepreneur, early-to-mid career faculty member having interest in SAM

Last day of Registration

15

October 2019

Indian Institute of Technology Kharagpur

NPIU

TEQIP-KIT

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME KNOWLEDGE INCUBATION FOR TEQIP

NPIU - A Unit of MHRD, Govt of India for Implementation of World Bank Assisted Projects in Technical Education

SUSTAINABLE AGRICULTURAL MECHANIZATION

1 Week
4 – 10 November 2019

Introduction / Overview

The new paradigm of "*sustainable production intensification*" as described by FAO, recognizes the need for productive and remunerative agriculture that conserves and enhances the natural resource base and which positively contributes to the delivery of environmental services. In recent decades, a notable shift from traditional labor-intensive production and post-harvest operations to mechanized labor-saving technologies has taken place in the country. Today's agriculture is characterized by high-inputs agriculture – but not necessarily as a profitable agriculture in a long run. Given the lack of consensus and understanding on "*appropriate mechanization*", the agriculture sector suffers from the inherited "*inefficiencies*" leading to unsatisfactory scores on the global scale of sustainability.

An all-inclusive mechanization considers different needs of gender, scale of operation and level of skills. This course intends to introduce the concept of "Sustainable Agricultural Mechanization" by highlighting the underlying inefficiencies and thereby suggesting possible solutions ranging from basic management of mechanization fleet to state-of-art advanced tools.

Program Objectives

The objective of this course is to provide participants with an interdisciplinary knowledge on the sustainable mechanization process and its management, which eventually contributes towards increasing the efficiency of agricultural production system. The course would help the academicians as well as practicing engineers, entrepreneurs and professionals to learn concepts and methods in '*sustainability thinking*'; and enhance their skills in managing the mechanized agriculture in a sustainable manner. It would also provide them a holistic view of sustainability in agricultural value chain. More importantly, the course would help equipping the participants with contemporary and advanced topics in smart agriculture.

Program Content

Introduction to Sustainable Agricultural Management

Modern Agriculture and Environment

Assessment of Sustainability / Systems Approach in Agriculture

Energy Inputs and Farm Productivity

Management of Mechanized Agriculture

Machinery and Machine-Labor Systems

Energy Modeling in Agricultural Production

Optimization Techniques in Agricultural Processes

Design for Productivity, Safety and Comfort

Agricultural Applications of Renewable Energy Sources

Solar PV, Wind Energy in Agriculture

Biomass and Biogas; Biodiesel

Controlled-Environment Agriculture

Yield Forecasting and Site-Specific Input Management

Sensor-based Monitoring of Soil and Plant Properties

Modeling Agricultural Processes with Artificial Neural Network
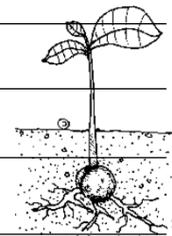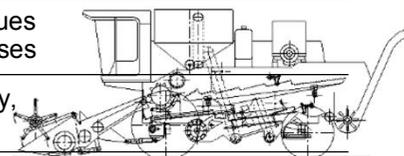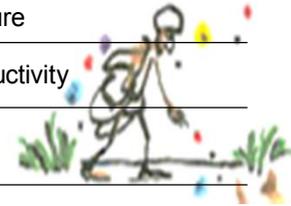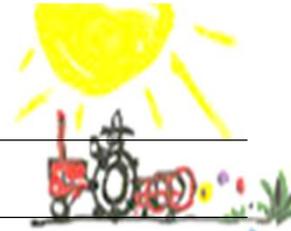
About the Faculty

Coordinator

Peeyush Soni [*Associate Professor*] Precision Agriculture and Automation; Agricultural Mechanization for Smallholders; Soil Tillage & Traction Research

Co-Coordinator

E.V. Thomas [*Professor*] Farm Machinery and Power; Tea Processing Machinery; Rice Transplanter; Rural and Cottage Industries Machinery

Key Experts for the course

Hifjur Raheman [*Professor*] Combination Implements; Vegetable Transplanter; Alternate Fuels from Biomass; Bioelectricity Production; Tillage and Traction Studies

Dilip Kumar Swain [*Professor*] Sustainable Production Agriculture; Climate Change Adaptation & Mitigation; Crop Modeling & Simulation; Organic Farming & Crop Quality

Rajendra Machavaram [*Assistant Professor*] Machine Design & Optimization; Structural Health Monitoring; Artificial Intelligence; Numerical Optimization in Non-linear Problems

Somsubhra Chakraborty [*Assistant Professor*] Hyperspectral Proximal Soil Sensors; Portable XRF applications in Soil; Digital Soil Mapping; Non-invasive Sensors