

Centre for Continuing Education



IIT Kanpur

Newsletter
October-December 2019

 www.iitk.ac.in/cce

Message from Head CCE



Prof. Rajesh M. Hegde

Dept. of Electrical Engineering
<http://home.iitk.ac.in/~rhegde/>

I am extremely delighted to present the second newsletter of the Centre for Continuing Education (CCE), for the period October 2019 – December 2019. During this period the CCE has successfully conducted various short-term courses, workshops, conferences, and online certification programs.

The Institute Continuing Education Program Policy which was long due has now been approved and is available on the website of the CCE. Thanks are due to the PAC and the ICEPC for their outstanding efforts and help in formulating this policy. The SURGE (Under the Students-Undergraduate Research Graduate Excellence) program will run under the aegis of the CCE from 2020. The SURGE program is aimed at conducting short-term research based projects that enhance the research potential of the Under Graduate Students beyond their classroom studies and development. The Vigyan Jyoti program of Department of Science and Technology (DST) aimed at encouraging girl students to make a career in STEM will be organized by the CCE in the year 2020. Prof. Harish Verma, who is an adjunct faculty with CCE, has been honored with the prestigious Padma Shri in January, 2020. CCE was fortunate enough to have him organize a MOOC from August-October 2019 on Quantum Physics with more than 20,000 participants. The CCE is also in the process of developing a dedicated online ICT support system called IITK Online. IITK Online when operational is expected to be a one stop digital ecosystem for all online courses offered by IITK.

I am also elated to share that we will now be publishing the CCE newsletter every quarter. We are excited about these new developments and striving to expand the activities of CCE to offer more contemporary outreach programs.



CCE ACTIVITIES

- ⬡ **Symposia, Seminars, and Conferences**
- ⬡ **Short Term Courses and Workshops**
- ⬡ **AICTE sponsored QIP Programs**
- ⬡ **Foreign Language Program**
<http://www.iitk.ac.in/cce/FLP>
- ⬡ **Online Certification Programs and MooCs**
- ⬡ **Institutional collaboration Programs**
- ⬡ **GIAN**
<http://www.giangp.ac.in/>
- ⬡ **TEQIP**
<http://www.teqipiitk.in/>
- ⬡ **E & ICT Academy**
<https://ict.iitk.ac.in/>
- ⬡ **SBERTC**
<http://www.iitk.ac.in/sbertc/>
- ⬡ **PMMMNM/TT/ AgriMOOC**
<https://tlc.iitk.ac.in/>
- ⬡ **NPTEL**
<http://www.iitk.ac.in/mtc/>
- ⬡ **Swayam Prabha**
https://swayamprabha.gov.in/index.php/channel_profile/profile/16
- ⬡ **Vigyan Jyoti**
<https://dst.gov.in/news/vigyan-jyoti-encourages-science-uptake-among-rural-girls>
- ⬡ **SURGE**
<http://surge.iitk.ac.in/>

The following outreach programs have been conducted successfully under the umbrella of the Centre for Continuing Education in the period between October-December 2019. These include AICTE sponsored QIP Programs (04), Short Term Programs (13), Conferences (03) Faculty Training programs (04)

- 04** AICTE Sponsored QIP Programs
- 13** Short Term Programs
- 04** Faculty Training Programs under Institutional collaboration with AKTU
- 03** Conferences



04

AICTE Sponsored QIP Programs

Completed

during October - December 2019



01

Electromagnetic Interference and Compatibility (EMI/EMC) Techniques

9-13 October 2019

Coordinator



Prof. M. Jaleel Akhtar
Dept. of EE, IIT Kanpur
<http://home.iitk.ac.in/~mjakhtar/>

One of the major challenges for RF Engineers in today's world is to minimize the electromagnetic interference (EMI) within circuits and systems due to increasing usage of high speed and high frequency devices. The electromagnetic compatibility (EMC) is mainly a technique to deal with such types of situations, where the main emphasis is to propose an optimum design in order to minimize the electromagnetic coupling and interference. The main objective of this one week course was to provide the participants an insight into various techniques and procedures required for the design of electronic systems, which are in compliance with the EMC guidelines. The course provided a brief outline of EMC guidelines prevalent in various geographical regions, and imposed by a number of agencies including the Bureau of Indian Standards (BIS). The concept of effective shielding using modern procedures involving the use of FSS (frequency selective surfaces) structures and light weight nanocomposites was explained. The participants were exposed to the state of the art modeling and simulation software currently being used for EMI/EMC applications. Finally, we tried to provide a demonstration of experimental setups used for EMI/EMC applications.

- ● **Course Website:** http://www.iitk.ac.in/mimt_lab/EMIworkshop/

02

Electroceramics for Energy Applications

4-8 November 2019

Coordinators



Dr. Tanmoy Maiti
Dept. of MSE, IIT Kanpur
<http://home.iitk.ac.in/~tmaiti/>



Dr. Shobhit Omar
Dept. of MSE, IIT Kanpur
<http://home.iitk.ac.in/~somar/>

The objective of this course was provide an advanced understanding of electroceramics for the application of energy conversion and storage. Further, the course intended to render an understanding of physics and chemistry behind the designing of electroceramic materials. The importance of

these electroceramics were discussed with respect to various sustainable energy technologies like fuel cells, thermoelectrics, piezoelectrics, pyroelectrics. Furthermore, the utilization of electroceramics in energy storage applications, such as, Li/Na-ion batteries, high-energy density capacitors were reviewed. State-of-the-art problems and challenges were explained to provide a better appreciation of electroceramic materials and devices.

- ● **Course Website:** <http://www.iitk.ac.in/cce/courses/2019/electroceramics-for-energy-applications/>

03 Electrochemical Energy Generation and Storage Materials

14-18 November 2019

Coordinators



Dr. Sri Sivakumar
Dept. of Chemical Engg,
IIT Kanpur
<https://www.iitk.ac.in/che/ss.htm>



Dr. Raj Ganesh S. Pala
Dept. of Chemical Engg.,
IIT Kanpur
<http://home.iitk.ac.in/~rpala/>

Main Highlights of Course

- Fundamental aspect of electrochemistry
- Fundamentals of electrochemical energy storage devices: Battery and supercapacitor
- Photoelectrochemical hydrogen generation
- CO₂ capture
- Hands-on session for electrochemical experiment

- ● **Course Website:** <http://iitk.ac.in/cce/courses/2019/electrochemical-energy-generation/>

04 Artificial Intelligence and Fuzzy Systems: Theories, Concepts and its Application

9-13 December 2019

Coordinator



Dr. Nishchal K. Verma
Dept. of EE, IIT Kanpur
<http://www.iitk.ac.in/idea/>

This course provided an essential background as well as recent developments in the field of Artificial Intelligence and Fuzzy Systems. Illustration of several challenges related to these fields were discussed in this course along with their applications into various real-life problems like computer vision, condition-based monitoring, bioinformatics, transportation, industrial automation, flight parameter estimation, security, healthcare, etc. The main thing about traditional and computing methods is that as complex as they may seem, they're still machine-like. They need a lot of domain expertise as human intervention is only capable of what they're designed for; nothing more, nothing less, whereas for such applications, fuzzy logic shows a lot more promise. Artificial intelligence aims to create intelligent machines having certain traits such as reasoning, decision making, analytics, learning, planning, problem-solving, etc. Artificial Intelligence and Fuzzy Systems can deal with real-world applications more efficiently by embedding the learning models and facilitating uncertainties.

● ● **Course Website:** <http://www.iitk.ac.in/idea/QIP2019/>



13

Short Term Programs

Completed

during **October - December 2019**



01

Techkriti Open School Championship (TOSC) Student Driven Program

13 October 2019

Coordinator



Prof. Siddhartha Panda
Dept. of Chemical Engineering,
IIT Kanpur
<https://www.iitk.ac.in/che/spanda.htm>

02

Women in Sciences and Engineering

19-20 October 2019

Coordinator



Prof. Bushra Ateeq
Dept. of BSBE
IIT Kanpur
<http://iitk.ac.in/new/bushra-ateeq>

03

Handelling Large Scale Data & Data Analysis using R

21-25 October 2019

Coordinator



Prof. Shalabh
Dept. of Mathematics & Statistics
IIT Kanpur
<http://home.iitk.ac.in/~shalab/>

04

AgMoocs - MOOCs for Agriculture

Oct 25 to Dec 25, 2019

Coordinator



Prof. T.V. Prabhakar
Dept. of Computer Science Engineering
IIT Kanpur
<https://www.cse.iitk.ac.in/users/tvp/>

05

Ancient Indian Science and Technology

2 November 2019

Coordinator



Prof. D.P. Mishra
Dept. of Aerospace Engineering
IIT Kanpur
<http://www.iitk.ac.in/aero/dpm/>

06

PYTHON and MATLAB Project Course on Design and Performance Analysis of 5G Wireless Systems

13-19 November 2019

Coordinator



Prof. Aditya K. Jagannatham
Dept. of Electrical Engineering
IIT Kanpur
<http://home.iitk.ac.in/~adityaj/>

07

Earthquake Engineering Open House

14-23 November, 2019

Coordinator



Prof. Durgesh C. Rai
Dept. of Civil Engineering
IIT Kanpur
<http://iitk.ac.in/new/durgesh-c-rai>

08

Brain Inspired Robotics

25-27 November 2019

Coordinator



Prof. Bishakh Bhattacharya
Dept. of Mechanical Engineering
IIT Kanpur
<http://home.iitk.ac.in/~bishakh/>

09

2nd Global Regulatory Perspective Programme for Chairperson/ Member of ERC, Sydney, Australia

27-29 November 2019

Coordinator



Prof. Anoop Singh
Dept. of Industrial & Management Engineering
IIT Kanpur
<http://www.iitk.ac.in/ime/anoops/>

10

AIS on Operator Theory

16-28 December 2019

Coordinator



Prof. Satyajit Guin
Dept. of Mathematics & Statistics
IIT Kanpur
<https://iitk.ac.in/new/satyajit-guin>

11

ACM India Winter School on High Performance Computing

5-11 December 2019

Coordinator



Prof. Preeti Malakar
Dept. of Computer Science Engineering
IIT Kanpur
<https://www.cse.iitk.ac.in/users/pmalakar/>

12

Amyloids: In Disease to Promising Material

6-7 December 2019

Coordinator



Prof. Ashwani Kumar Thakur
Dept. of Biological Sciences & Bioengineering (BSBE)
IIT Kanpur
<https://www.iitk.ac.in/bsbe/ashwani-kumar-thakur>

13

MOOC it with MOOKIT

15 Dec - 15 Jan 2019

Coordinator



Prof. T.V. Prabhakar
Dept. of Computer Science and Engineering
IIT Kanpur
<https://www.cse.iitk.ac.in/users/tvp/>

03

Conferences

Completed

during **October - December 2019**

01**BIOTERM 2019**

28 Nov - 1 Dec, 2019

Coordinator

Prof. Ashok Kumar
Dept. of Biological Sciences & Bioengineering (BSBE)
IIT Kanpur
<https://www.iitk.ac.in/new/dr-ashok-kumar>

02**Conference on Nonlinear Systems and Dynamics**

12-15 December 2019

Coordinator

Prof. Sagar Chakraborty
Dept. of Physics
IIT Kanpur
<https://www.iitk.ac.in/new/sagar-chakraborty>

03**Society of Operations Management (SOM 2019)**

19-21 December 2019

Coordinator

Prof. Raghu Nandan Sengupta
Dept. of Industrial & Management Engineering
IIT Kanpur
<https://www.iitk.ac.in/new/raghu-nandan-sengupta>

04

Faculty Training Program under Institutional Collaboration with **AKTU**

Completed
during October-December 2019



Coordinator

Prof. Jayant K. Singh
Dept of Chemical Engg.
IIT Kanpur
<http://home.iitk.ac.in/~jayantks/>

01

FTP on Condition Assessment and Retrofitting

21-25 October 2019

Instructors



Prof. Sudhir Mishra
Dept. of Civil Engineering
IIT Kanpur
<http://iitk.ac.in/new/sudhir-mishra>



Prof. Samit Ray Chaudhuri
Dept. of Civil Engineering
IIT Kanpur
<http://home.iitk.ac.in/~samitrc/>



Prof. Suparno Mukhopadhyay
Dept. of Civil Engineering
IIT Kanpur
<https://www.iitk.ac.in/new/suparno-mukhopadhyay>



Prof. Arghya Das
Dept. of Civil Engineering
IIT Kanpur
<https://www.iitk.ac.in/new/arghya-das>



Prof. Sudib Kumar Mishra
Dept. of Civil Engineering
IIT Kanpur
<http://iitk.ac.in/new/sudib-kumar-mishra>

02

FTP on Data Analytics with Python

9-13 November 2019

Instructor



Mr. Avneesh Jain
CodeKraft

03

FTP on Internet of Things (IoT) - I

16-20 November 2019

Instructors



Prof. Laxmidhar Behera
Dept. of Electrical Engineering
IIT Kanpur
<http://home.iitk.ac.in/~lbehera/>



Prof. Vipul Arora
Dept. of Electrical Engineering
IIT Kanpur
<http://home.iitk.ac.in/~vipular/>

04

FTP on Internet of Things (IoT) - II

23-27 December 2019

Instructors



Prof. Laxmidhar Behera
Dept. of Electrical Engineering
IIT Kanpur
<http://home.iitk.ac.in/~lbehera/>



Prof. Vipul Arora
Dept. of Electrical Engineering
IIT Kanpur
<http://home.iitk.ac.in/~vipular/>

Faculty in Focus

Prof. Shalabh is a faculty of Statistics in the Department of Mathematics & Statistics, IIT Kanpur. His areas of interest include Econometrics, Linear Regression Models, Measurement Error Models, Missing Data Models, Forecasting Techniques and many more. He has been conferred with several awards and fellowships from various national and international organizations. Awards like “National Award for Young Statisticians – Professor C.R. Rao Award” from the Ministry of Planning and Programme Implementation, Government of India, “Vigyan Ratna Samman” from the Council of Science & Technology, Uttar Pradesh and “Humboldt Fellowship” from Alexander von Humboldt Foundation, Germany are a few of his achievements, resulting from continual contributions in the field of science and statistics. His books are popular among the readers in statistics fraternity. He has conducted an array of workshops which have helped many academicians in understanding the statistical tools in practice and has helped in shortening the gap between the theoretical and applied statistics, facilitating many researchers in the implementation of statistics in real data analysis. His association with NPTEL and MOOC courses has helped many students from different streams in understanding the statistical concepts. He has also created web-based courses on Linear regression analysis, Analysis of variance, Design of experiments, Econometric theory and Sampling theory. With the growing demand for the use of Statistical software in data sciences, he has successfully taught the courses on the programming language of R software and descriptive statistics with R software through the video lectures on MOOC and SWAYAM platform.



Prof. Shalabh

**Department of
Mathematics & Statistics**

<http://home.iitk.ac.in/~shalab/>

CCE Staff



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