

Message from Head CCE



Prof. Rajesh M. Hegde

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

It gives me great pleasure in bringing out the first news letter of the Centre for Continuing Education. IIT Kanpur offers a variety of outreach programs (short-term courses, workshops, online certificate programs, and internship programs) to students, academic, technical staff, and to working professionals both from within and outside the Institute. The Centre for

Continuing Education has been mandated to handle all such academic outreach educational activities of IIT Kanpur from this year.

I am happy to report that several AICTE sponsored QIP programs, Short Term Workshops under various categories, MooCs, NPTEL programs, and Conferences were successfully conducted in the period between April to September 2019, under the aegis of the CCE. The Foreign Language Program (FLP) which was running under the Dean Student Affairs (DOSA) has also moved to the CCE from this year. Several courses in areas like Data Sciences, and AI, among others have also been conducted under the Institutional collaboration mode with Dr. A.P.J. Abdul Kalam Technical University (AKTU) Uttar Pradesh. Prof Harish Verma who is a pioneer in science education in India has joined as an Adjunct Faculty with the CCE and is making significant efforts in popularizing science education in rural areas of Uttar Pradesh through MooCs. The Center for Continuing Education (CCE) is making efforts to develop and integrate several e-platform services available at IIT Kanpur into a single full fledged online service called "IITK Online" for all online course offerings from IIT Kanpur. This service will act as a single window facilitator in the future for all online course offerings at IIT Kanpur.

The team at CCE is excited with the new developments in the area of continuing education and is working hard to introduce, formalize, organize, conduct, and facilitate various new outreach programs. We look forward to the support and encouragement of all Faculty and Academic staff in our efforts to make the outreach program offerings at IIT Kanpur successful and self sustaining, while ensuring the quality of these programs. We welcome your valuable feedback as always on any matter related to the CCE. I also hope to communicate with you again in the next newsletter in a couple of months.



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\bigcirc s	ymposia, Seminars, and Conferences
\bigcirc s	hort Term Courses and Workshops
\bigcirc A	ICTE sponsored QIP Programs
	oreign Language Program tp://www.iitk.ac.in/cce/FLP
\bigcirc 0	nline Certification Programs and MooCs
\bigcirc Ir	nstitutional collaboration Programs
	IAN tp://www.giangp.ac.in/
_	EQIP tp://www.teqipiitk.in/
	& ICT Academy tps://ict.iitk.ac.in/
	BERTC tp://www.iitk.ac.in/sbertc/
	MMMNMTT/ AgriMOOC tps://tlc.iitk.ac.in/
	IPTEL tp://www.iitk.ac.in/mtc/
	wayam Prabha tps://swayamprabha.gov.in/index.php/channel_profile/profile/16
	rigyan Jyoti https://www.iitk.ac.in/dord/
	URGE tp://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 April - September 2019. These include AICTE sponsored QIP Programs (10), Short Term Programs (26), Faculty Training programs (09), and Conferences (03)

AICTE Sponsored QIP Programs
 Short Term Programs
 Faculty Training Programs under Institutional Conferences
 Conferences



10 AICTE Sponsored QIP Programs Completed during April - September 2019



Robotics and Autonomous Systems 01-05 April 2019

Coordinators



Prof. Ashish Dutta Dept. of ME



Dr. Anjali Vishwas Kulkarni Dept. of ME

The next decade will be shaped by the five digital forces of: Robotics and AI, cloud computing, big data analytics, mobile and pervasive computing and social media. Robotics and autonomous systems is an interdisciplinary engineering field which connects the classical branches of mechanical, electrical engineering and computer science/ information technology. Its applications range from machine tools, autonomous cars, drones, biomedical engineering, industrial automation, medical robotics and exoskeletons, Machine learning and AI, etc. The main objectives of this course is to first give the participants an introduction to the basic kinematics and dynamics of Robotic systems and then focus on a few advanced topics related to autonomous robotic systems applications. A practical session of Matlab based integration of hardware and software is also included for real world applications. Each day will have a focussed theme on a particular area.

02

Technological Advancement of Polymer Nanocomposites 3-7 April 2019

Coordinator



Prof. Kamal K Kar Dept. of ME

Composites, the major frontier area of science and technology to replace conventional materials has reached greater heights of scientific and technological developments. In the last two decades, a great deal of fundamental and developmental research has been made to bring composite materials in various applications such as automobile, space, ocean, medical, agriculture, automotive, building construction, railways, etc. The advent of composite materials has introduced a new dimension in application of energetic, smart and reactive materials. The objective of this course is to bring together scientists, engineers, technologists and industrialists from different disciplines to a common platform, to discuss the recent advances in the processing and application of composite materials. This course is designed to bring greater awareness of these developments among the academic personnel and industries. To fulfil this objective the course combines presentation of the basic properties and manufacturing routes along with their application in various industries for different types of composites. As part of the course practical sessions are conducted where the participant will build his own product.

Design of Engines for Emission, Compliance 17-21 April, 2019

Coordinator



Prof. Avinash Kumar Agarwal Dept. of ME

Current automobile technology has matured significantly over the past few years. Engine technologies have come across a significant change to improve the efficiency and cost. However, the world is also confronted with the twin crises of fossil fuel depletion and environmental degradation. Indiscriminate extraction and lavish consumption of fossil fuels have led to reduction in underground-based carbon resources. This calls for advanced designs of the engines and deployment of relevant engine technologies, which promise a harmonious correlation with sustainable development, energy conservation, management, efficiency and environmental preservation. With increasing environmental awareness worldwide, stringent regulations for fuel consumption, and exhaust emissions, including those for PM (Particulate Matter) and NOx are further evolving. Under these circumstances, diesel engines would continue to be attractive because of their relatively lower fuel consumption and higher power output compared to their gasoline counterparts however both have to emerge as clean primary power sources. This course focuses on designing of various engine components and technologies, diagnostics and modeling tools. The emphasis is on providing the participant an up-to-date knowledge of the advances in design of engine components and sub-systems for emission compliance.

04

Fundamentals of Materials Manufacturing Processes and their Applications 06-10 May 2019

Coordinators



Prof. Anish Upadhyaya Dept. of MSE



Dr. Asit Prakash Bajpai Dept. of MSE

The economic strength of a country is correlated by the growth of its manufacturing industries. Therefore, Manufacturing has become part of the fabric of our country with highlighting on "Make in India" by the government. It is important that technical brain from all disciplines have basic idea about processes involved in making a product. This course aims to teach the basic knowledge about the fundamental manufacturing techniques employed to transfer a raw material into final useful product.

Smart Grid Technology 09-13 May 2019

Coordinators



Prof. Ankush Sharma Dept. of EE



Prof. Saikat Chakrabarti Dept. of EE

An important goal of Smart Grid Technology (SGT) is to leverage modern Information and Communication Technology (ICT) infrastructure to help monitor and control of the power systems more effectively. With the increase in penetration of SGT in power systems, there has been a growing demand of real time visualization, monitoring, and control of the power system. Further, the present day electricity sector is witnessing increased share of renewables, storage, EV charging stations, microgrids, intelligent sensors and controllers, automation, and smart metering at different levels in the network. This leads to transmission & distribution networks requiring cyber-secure Advanced Energy Management System (AEMS) and Advanced Distribution Management System (ADMS) tools. The large penetration of renewables, being intermittent in nature, will pose system stability and power quality concerns, which will require proper compensation and controls. The main objective of this course is to familiarize the participants from academic institutions, utilities, industries, and R&D organizations about different concepts and developments in the Smart Grid Technology.

06

Statistical Analysis for Engineers and Researchers May 31- June 4, 2019

Coordinator



Prof. ShalabhDept. of Mathematics & Statistics

The statistical tools play an important role in the engineering, management, humanities and all allied sciences. Recent advancement in application oriented sciences are compelling the researchers and users for learning and understanding the statistical tools for modelling and analysis of the data arising from their experiments. Realizing the need of the time, the present workshop is aiming to give lectures and training on the Statistical topics and Linear Regression Modelling. The participants will be exposed to the statistical basics, background and fundamentals behind the tools.

Fundamental and Practical Aspects of Corrosion 22-26 June 2019

Coordinators



Prof. Kallol Mondal Dept. of MSE



Prof. Sudhanshu Shekhar Singh Dept. of MSE

The objective of the course is to impart knowledge to the participants on the fundamental and practical aspects of corrosion. The course will begin with emphasis on the importance of studying Corrosion of materials. Fundamentals of corrosion will be addressed from the angle of thermodynamics and kinetics of electrochemical phenomena. Different forms of corrosion related to materials and mixed potential theory will be discussed. Finally, electrochemical ways of protection of metals and alloys will be explained. Moreover, it will also address the practical aspects of corrosion and how to analyze the corrosion test data and subsequent choice of protection method. The course comprising of lectures and lab session shall give the participants of learning, teaching, doing research and development of the IIT Kanpur way and hopefully aid them in establishing similar procedure at their home institutes.

80

Energy: Sources, Utilization and World Perspective July 29 - August 3, 2019

Coordinators



Prof. P K Panigrahi Dept. of ME



Prof. Arun K Saha Dept. of ME



Prof. K. Muralidhar Dept. of ME

The course aims at exposing the participants to the present day perspective of energy from technical as well as social perspectives. It begins with a review of various forms of energy sources in use and their future prospects. Special attention is paid towards unconventional hydrocarbons that may sustain societies for the next century. The second part of the course is designed to provide the participants with the knowledge of consequences of energy usage on the environment, such as climate change. The third section covers historical and political implications of energy usage on peace, stability, and war.

Electromagnetic Metamaterials: Microwave-Infrared-Optical Applications 19 to 23 August 2019

Coordinators



Prof. K V Srivastava Dept. of EE



Prof. S Anantha Ramakrishna Dept. of PHY

An intensive course on Fundamentals and Applications of Metamaterials, from microwave to optical frequency range, will be conducted between 19 and 23 August 2019, sponsored by the Continuing Education Program of IIT Kanpur. The program will be specifically useful for persons who are concerned with Microwave, Infrared and Optical properties of Metamaterials in Research and Industry as well as training/teaching of students/ personnel. Through this program, IIT Kanpur's internationally recognized expertise in this area is being used to create pool of appropriately trained technical personnel in India. The course is designed to cater to the needs of teachers from Science & Engineering Institutions, scientists from R&D labs and practicing engineers from industry. It aims to equip the participants with an essential knowledge of the area so as to enable them start working with metamaterials in their research & applications.

10

TEM and HRTEM Analysis of Materials 2-6 September, 2019



Prof. Gouthama Dept. of MSE



Dr. Bhagyaraj Jayabalan Dept. of MSE

Imaging at atomic resolution and elemental analysis at nanoscale has become essential characterization in advanced materials processing, development, and design. The range of experimental techniques available have been increasing and the researchers need to develop a high degree of expertise, both in the conduct of the analysis using these tools and interpretation of the acquired data/results. The lack of exposure and expertise in these techniques is becoming more and more a limitation in carrying out the high quality of research using these advanced research tools/techniques. This course aims to address this shortcoming.

26

Short Term Programs Completed during April - September 2019





Hepatic and Bone Tissue Development for Drug Metabolism and Tissue Engineering

01-12 April 2019

Coordinator

Prof. Ashok Kumar https://www.iitk.ac.in/new/dr-ashok-kumar



02

Blockchain for Managers: Introduction and Applications

May 05 to June 10, 2019

Coordinator

Prof. T V Prabhakar https://www.cse.iitk.ac.in/users/tvp/



03

Kendriya Vidyalaya Sangathan Workshop 15-24 May 2019

Coordinators

Prof. H. C. Verma https://hcverma.in/



Prof. Saurabh Mani Tripathi http://home.iitk.ac.in/~smt/





Design Thinking and New Product Development 20 May to 23 June, 2019

Coordinator

Prof. J. Ramkumar http://www.iitk.ac.in/new/dr-j-ramkumar



05

Literature Review Workshop for PG Students of CE

June 27 to July 06, 2019

Coordinators

Prof. Chinmoy Kolay https://iitk.ac.in/new/ chinmoy-kolay



Prof. Durgesh C Rai http://iitk.ac.in/new/ durgesh-c-rai



06

ACA Summer School May 27- June 7, 2019

Coordinator

Dr. Rajat Mittal https://www.cse.iitk.ac.in/users/rmittal/





A Hands- On Introduction to Modern Wireless System: Theory and Simulation

27-31 May, 2019

Coordinators

Prof. Adrish Banerjee http://home.iitk.ac.in/~adrish/



Prof. Abhishek Gupta http://home.iitk.ac.in/ ~gkrabhi/



08

Introduction AI, IoT & Robotics June 03 - July 01, 2019

Coordinator

Prof. Laxmidhar Behera http://home.iitk.ac.in/~lbehera/



09

Earthquake Resistant Practices @IITK for UG Students of Architecture

14-22 July 2019

Coordinators

Prof. Durgesh C. Rai http://home.iitk.ac.in/ ~dcrai/



Prof. Chinmoy Kolay https://www.iitk.ac.in/ new/chinmoy-kolay





Flexible Electronics 04-06 July 2019

Coordinator

Prof. Monica Katiyar http://iitk.ac.in/new/monica-katiyar



11

Entrepreneurship (SBERTC)

04 July 2019 to 03 July 2024

Coordinator

Prof. B.V. Phani http://home.iitk.ac.in/~bvphani/



12

3D Simplified Mathematics with Excel 05-07 July 2019

Coordinator

Prof. K S Venkatesh http://home.iitk.ac.in/~venkats/





5G Wireless Technology: Massive, mm Wave MIMO, NOMA, Full Duplex and OFDM/FBMC 08-13 July 2019

Coordinator

Prof. Aditya K. Jagannatham http://home.iitk.ac.in/~adityaj/



14

Advanced Coal Utilization: Current Status and Future Prospects

08-20 July 2019

Coordinator

Dr. Santanu De http://home.iitk.ac.in/~sde/



15

Design, Construction, Evaluation & Maintainence of Flexible Pavements and Future Technologies

21-25 July 2019

Coordinator

Prof. Animesh Das http://home.iitk.ac.in/~adas/





Conduct of Road Safety Travelling Workshop for UPPWD officers in collboration with IITD & IIT BHU (Coordinator: IIT Delhi)

21-22 July 2019

Coordinator

Prof. Sudhir Mishra http://iitk.ac.in/new/sudhir-mishra



17

Emerging Trends in the Indian Power Sector: Market Design and Digitalisation

25-27 July 2019

Coordinator

Dr. Anoop Singh http://www.iitk.ac.in/ime/anoops/



18

Steelmaking, Refractories and Plant Practices

01-03 August 2019

Coordinator

Prof. Dipak Mazumdar http://home.iitk.ac.in/~dipak/



19

Quantum Mechanics in MOOC mode

August 15 to December 01, 2019

Coordinators

Prof. H. C. Verma https://www.hcverma.in



Prof. T. V. Prabhakar https://www.cse.iitk .ac.in/users/tvp/



20

Handeling Large Scale Data & Data Analysis using R

26-30 August 2019

Coordinator

Prof. Shalabh http://home.iitk.ac.in/~shalab/



21

E-Summit Workshops 2019

August 30 to Septermber 01, 2019

Coordinator

Prof. Amitabha Bandyopadhyay http://iitk.ac.in/new/amitabha-bandyopadhyay





Concrete Engineering for BGR Energy Limited and NUPPL Engineers

21 August 2019

Coordinator

Prof. Sudhir Mishra http://iitk.ac.in/new/sudhir-mishra



23

Inclusion of Indian Traditional Knowledge in Technical Education Systems

7 September 2019

Coordinator

Prof. D.P. Mishra http://www.iitk.ac.in/aero/dpm/



24

Two Week Intensive Course on Exterior Ballistics

16-29 September 2019

Coordinator

Prof. Nachiketa Tiwari http://www.iitk.ac.in/new/nachiketa-tiwari





Nanomechanics and Biotribology (NMB-2019) 15-16 September 2019

Coordinators

Prof. Kantesh Balani http://home.iitk.ac.in/~kbalani/



Prof. Gouthama
http://home.iitk.ac.in/~gouthama/



26

RF, Microwaves and Antennas: Theory and Applications 16-20 September 2019

Coordinators

Prof. Rajesh M Hegde http://home.iitk.ac.in/~rhegde/



Prof. K V Srivastava http://home.iitk.ac.in/~kvs/



09

Faculty Training Programs under Institutional Collaboration with AKTU

Completed during April - September 2019



Coordinator: Prof. Jayant K Singh



Introduction to Programming: A Pedagogical Approach 17-22 June 2019

Instructors



Prof. Amey Karkare Dept. of CSE IIT Kanpur



Prof. Rajat Mittal Dept. of CSE IIT Kanpur



Introduction to Basic Electrical Engineering: A Pedagogical Approach 2-6 July 2019



Prof. Ankush Sharma Dept. of EE IIT Kanpur



Prof. Saikat Chakrabarti Dept. of EE IIT Kanpur



Prof. Sandeep Anand Dept. of EE IIT Kanpur



Introduction to the Technical/Engineering Drawing: A Pedagogical Approach

9-13 July 2019

Instructors



Prof. P.M. Mohite Dept. of AE IIT Kanpur



Prof. J. Ramkumar Dept. of ME IIT Kanpur



Prof. Sathesh Mariappan Dept. of AE IIT Kanpur



Introduction to Programming: A Pedagogical Approach 13-18 Aug 2019



Prof. Amey Karkare Dept. of CSE IIT Kanpur



Prof. Rajat Mittal Dept. of CSE IIT Kanpur



FTP on Manufacturing Process

21-25 August 2019

Instructors



Dr. Amandeep Dept. of IME IIT Kanpur



Prof. J. Ramkumar Dept. of ME IIT Kanpur



Short Term Course on Data Analytics with Python 7-11 September 2019

Instructor



Mr. Avneesh Jain Codekraft



Short Term Course on Artificial Intelligence 14-18 September 2019



Nisheeth Srivastava Dept. of CSE IIT Kanpur



Prof. Piysh Rai Dept. of CSE IIT Kanpur



Prof. Sunil Easaw Simon Dept. of CSE IIT Kanpur



Prof. Arnab Bhattacharya Dept. of CSE IIT Kanpur



Prof. Vinay P. Namboodiri Dept. of CSE IIT Kanpur



Product Realization using 3D Printing 28 Sept - 2 Oct, 2019



Prof. Niraj Sinha Dept of ME IIT Kanpur



Prof. S Kamle Dept. of AE IIT Kanpur



Prof. Pankaj Wahi Dept. of ME IIT Kanpur



An Introductory Course on High-Performance Computing in Engineering

28 Sept - 2 Oct, 2019



Prof. Jayant K Singh Dept of Chemical Engg. IIT Kanpur



Prof. Amey Karkare Dept. of CSE IIT Kanpur



Prof. Preeti Malakar Dept. of CSE IIT Kanpur



Prof. Swarnendu Biswas Dept. of CSE IIT Kanpur



Prof. Vinay P. Namboodiri Dept. of CSE IIT Kanpur



Prof. Mahendra K. Verma Dept. of Physics IIT Kanpur



Mr. Ashok Chaudhary Fujitsu



Mr. Ashish P. Kuvelkar C-DAC Pune

O3 Conferences Completed during April - September 2019



Fourth International Conference on Nanotechnology for Better Living Theme: Technological Advancements of Fly Polymer Composites

06-07 April, 2019



Prof. Kamal K. Kar

http://home.iitk.ac.in/~kamalkk/



Computing Communications and Networking Technologies (ICCCNT 2019)

6-8 July, 2019



Prof. Sandeep Shukla

https://www.cse.iitk.ac.in/users/sandeeps/



Society for Economic Research in India 2019

13-14 July, 2019



Prof. M. A. Rahman

https://www.iitk.ac.in/new/mohammadarshad-rahman

Foreign Language Program



Coordinator

Sayan Chattopadhyay Assistant Professor Department of Humanities and Social Sciences

The Foreign Language Programme (FLP) was started more than 30 years ago under the DOSA and run by the Dept.of HSS. Since then it has grown and attracts students and faculty not just from within the campus, but also from the city. Eager and motivated students learn a language either purely out of interest or for professional reasons. Many students, who wish to pursue a higher degree or a job outside India, find the knowledge of a foreign language an additional benefit. French, German, Japanese, and Chinese Languages are taught under the FLP. The FLP co-ordinator from HSS department co-ordinates this activity under the CCE. The FLP will be conducted under the aegis of the CCE from this year.

Instructors



Shubha Karnick French



Lekha Rajesh French



Gauri Sharma German



Ya-Hsin Yu

Chinese

Japanese

Deepaa Anandh

Vatsala Mishra

German



Neelam Saxena German

Adjunct Faculty

Prof. Harish Chandra Verma has retired from Department of Physics at Indian Institute of Technology, Kanpur as a Professor. Prior to joining IIT Kanpur, he served Science College Patna University (1979-1994) as Lecturer and Reader. His research interests is in Nano fabrication using focused ion beam, Magnetism in Graphite on irradiation by ion beam, Nanosize (4 nm-20 nm) magnetic materials, Fe-based alloys, Earth Science etc. He has published 139 research papers in reputed journals. He has also written several books in Physics for School and College level students. He has developed more than 600 physics experiments which can be used by teachers as DEMOs in their classrooms. He has also produced a set of 45 video lectures in Hindi at school level. Prof. Verma is Executive Committee member of Indian Association of Physics Teachers (IAPT) which works for physics education in schools and colleges.

During his stay at IIT Kanpur, Prof. Verma has taught a number of professional and core courses. Almost every year, he was adjudged outstanding instructor/tutor as announced in the senate of IIT Kanpur and was given appreciation letter from the Director. The UG/professional courses include Nuclear Physics, Classical Mechanics, Quantum Mechanics, Electrodynamics, Review courses for PhD Students etc.

Porf. Verma is Currently an adjunct faculty with CCE and working towards popularizing science education in India using Hindi as a medium of instruction



Prof. H.C. Verma www.hcverma.in

Faculty in Focus

Prof. Prabhakar is interested in building systems and is still excited about science and technology. He had worked in multiple areas like Databases, Logic Programming, User Interface Design, Internet Technologies, Software Architecture, Knowledge Modelling, and Indian Language Technologies. He had worked with CMC R&D, Satyam Computer Services and had been a consultant to a large number of IT organizations and e-governance initiatives.

Prabhakar taught, probably the first MOOC from India in 2012. Realizing that there is no appropriate software for the delivery of MOOCs he designed and developed management MOOC system mooKIT (https://www.mookit.in) mooKIT is built with some of the problems that is faced by developing countries in mind, like unstable, poor and sometimes expensive bandwidth, mooKIT has been since used in more than 70 courses with over 2,00,000 learners. It is fully built with open source components and is open source. He coordinates a portal on MOOCs for Agriculture, agMOOCs, (https://www.agmoocs.in) only one of its kind in the world. More than seventeen MOOCs in agriculture have been delivered in the last four years. Along with Commonwealth of Learning (https://www.col.org), he operates a MOOCs for Development portal MOOC4DEV at (https://www.mooc4dev.org) which is used by Universities from several countries to deliver courses related to developmental issues.



Prof. T. V. Prabhakar

Professor Department of CSE

CCE Staff



Anil Mehrotra



Vinay Kumar



Yogendra Singh



Sudesh Gupta



Kranti Singh



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Rajesh Kumar



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