An introductory course on

Cyber Physical Production Systems

Preamble:
The role of CPS is becoming increasingly important as we usher into an age that is overarchingly digital and connected. The divide between the physical and the virtual has all but dissolved and CPS is slated to play a pole position in this new dispensation. The manufacturing sector is no exception and is also experiencing a novel transformation with the advent of Industry 4.0. This transformation in the sector cuts across domains and provides unprecedented potential to tap into. This includes and is not limited to seamless connectivity between manufacturing units across geographies, technology agnostic coupling between disparate deployments, machine learning based 'smart' interventions, and effective handling and analysis of data. This is further augmented through the incorporation of simulation and modelling endeavors that enable the development of CPS deployments of user-defined modularity and scalability.
In such a scenario, it is imperative that personnel in the industry and academia are well versed with the nuances associated with CPS in general and its application in manufacturing systems in particular. We, therefore, propose a short course to provide fundamental knowledge and insights to students, faculty members and practitioners on CPS, the role of sensors and IoT and their applications in manufacturing, digital twin technology and its role in asset management and prognostics for asset health management. An introduction to simulation and modelling is also planned which will provide an overview of the relevant basic concepts. The basic concepts will be followed by demonstration of cloud-based simulation tool for decision making in manufacturing.

Supported by: This course is Conducted by Industry Academia Consortium for Smart Manufacturing (IndAC-SM, http://indacsm.iiti.ac.in/), IIT Indore, India, under Distinguished International Associate (DIA) Programme and Industry Academia Partnership Programme of Royal Academy of Engineering, London, UK.

Marketing Partner: ProMFG media (https://www.promfgmedia.com/)

Dates: August 9-11, 2021

Mode: Virtual (MS Teams)

Target audience:
- Students (UG/PG/PhD)
- Industry professionals (executive and middle management)
- Faculty members/scientists from academic institutes/universities

Program Schedule		
Time	**Speaker**	**Title**
August 9, 2021		
10:00 hrs-11:00 hrs	Dr. Bhupesh K Lad, IIT Indore Dr. Kiran Bala, IIT Indore	Overview of CPS and CPPS CPS for biological system
11:10 hrs-12:10 hrs	Prof. Abhinav Kranti, IIT Indore	Working with sensors in CPS
14:00 hrs-15:00hrs (Keynote Talk)	Prof. Amaresh Chakrabarti, IISc Bangalore	Industry 4.0 and its implications for innovation and growth
15:15 hrs-16:15 hrs	Dr. Abhihesk Srivastava, IIT Indore	Internet of Things (IoT) as an important element of CPS
August 10, 2021		
10:00 hrs-11:20 hrs	Prof. Makrand S. Kulkarni, IIT Bombay	Prognostics for health management of assets
11:30 hrs-12:50 hrs	Dr. Bhargav Vaidya, IIT Indore	Concepts of numerical simulation
14:00 hrs-15:15hrs	Prof. Ajith K Parlikad, University of Cambridge, UK	Digital twins for asset management
15:30 hrs-16:30 hrs	Mr. Vibhor Pandhare, University of Cincinnati,	Collaborative learning for manufacturing-as-a-service
August 11, 2021		
10:00 hrs-11:00 hrs	Mr. Rajinder Singh, Mahindra Institute of Quality, Mahindra and Mahindra ltd	Application of IoT: Case studies from Mahindra and Mahindra
11:00 hrs-12:30 hrs	Dr. Bhupesh K Lad, IIT Indore Mr. Jaideep, IIT Bombay	Prototype demonstration: cloud based simulation tool for manufacturing shop floor decision making

***Registration:**

- INR 1000/- for Students from India (UG/PG/PhD)
- INR 3000/- (USE 60) for other academic members (faculty members, post doctoral fellow, etc.) from India
- INR 5000/- for Industry Participants from India
- USD 100 for any participants from other than India
- Free for Members of IndAC-SM, and all past and current Distinguished International Associates (DIA) of Royal Academy of Engineering (RAE), London, UK.

*Fee includes all applicable taxes.

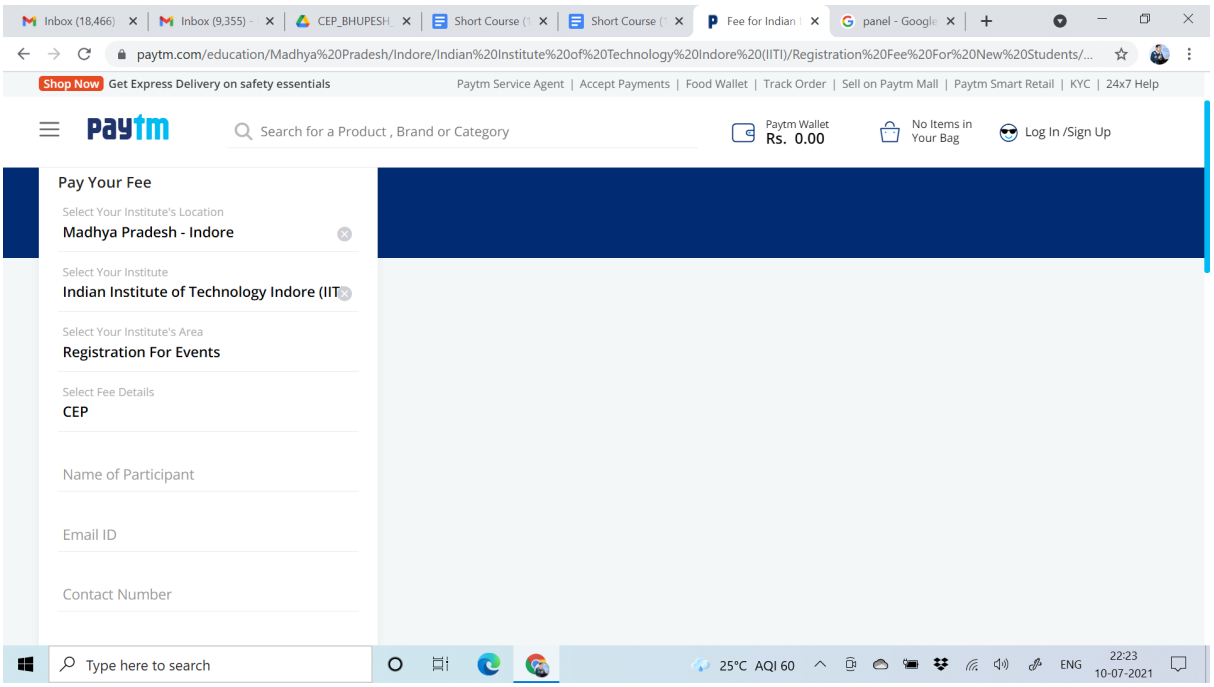
Payment procedure:

Method 1: (Only for Indian Participants)

For making payment please use following link.

https://paytm.com/education/Madhya%20Pradesh/Indore/Indian%20Institute%20of%20Technology%20Indore%20(IITI)/Registration%20Fee%20For%20New%20Students/New%20Registration?utm_source=web&utm_medium=smarturl&utm_campaign=feeweb&utm_term=fees

Fill In details on left panel as shown below:



Method 2: Participants can do electronic transactions at the following account of the institute. SWIFT code for international transactions is also given. In case of any issue in transaction please contact us at: indacsm@iiti.ac.in

DETAILS OF ACCOUNT HOLDER

1	Name of the Account Holder	Registrar IIT Indore
2	Contact Address	Indian Institute of Technology Indore Khandwa Road, Simrol-453552, Indore
3	Agency Name as per CPMS	Indian Institute of Technology Indore
4	Agency Code as per CPMS	IITIND
5	Telephone No	0731-6603586
6	Fax No	0731-2438933
7	Email	aornd@iiti.ac.in
8	TAN No	BPLI01163B
9	PAN	AAAAI7115H
10	GSTIN	23AAAAI7115H1Z2

BANK ACCOUNT DETAILS

1	Bank Name	Canara Bank
2	Branch Name	Simrol IIT Branch
3	Contact Address	Indian Institute of Technology Indore Khandwa Road, Simrol-453552, Indore
4	Telephone No	70499-19146
5	Email ID	cb6223@canarabank.com
6	Account Number	1476101027440
7	Account Type	Savings account
8	MICR Code	452015026
9	IFSC Code	CNRB0006223
10	SWIFT Code	CNRBINBBISG

Note: please keep your payment receipt or acknowledgement ready in pdf before filling registration form

Registration Form:

For registration, please fill the form at: https://forms.gle/1dP18wd5rmRHdRJKA

Last date of registration: August 5, 2021

For any query/issue please contact: indacsm@iiti.ac.in or call us at +91-7974259502 (Mr. Arun Kumar Bhagwaniya) or Mr. Krsihna Tomar at +91-9039695699

Note:

(1) All the participants will receive participation certification for the short course.

(2) The course link will be sent to registered participants during August 6-7, 2021. Please also check your junk or spam folder. In case you do not receive the link by August 7, 2021 please write to us at: indacsm@iiti.ac.in