

## One Week Short-Term Course

on

### *Advances in Artificial Intelligence and Computing for Robust Engineering Applications (Hybrid Mode)*

**July 8-12, 2024**

**Organized by:**



**Department of Computer Science and  
Engineering**

**Punjab Engineering College  
(Deemed to be University)  
Sector - 12, Chandigarh  
160012**

#### ***COORDINATOR(S)***

***Dr. Kanu Goel  
Dr. Mamta Dabra  
Dr. Satnam Kaur***

**CSE Department, PEC, Chandigarh**

#### ***ABOUT PEC***

Punjab Engineering College (PEC), originally established as Mugalpura Engineering College in 1921 in Lahore, later relocated to its present campus in 1953 and became affiliated with Panjab University. It attained Deemed University status in 2003, was renamed PEC University of Technology in 2009, and reverted to its original name, Punjab Engineering College (Deemed to be University), in 2017. Administered by the Union Territory of Chandigarh, Government of India, it shares its 146-acre campus with Chandigarh College of Architecture and follows academic and administrative processes similar to IITs in India.

PEC offers 8 undergraduate B.Tech. programmes and 13 postgraduate M.Tech. programmes across various engineering and technology disciplines. Since obtaining university status, PEC has introduced Ph.D. programs spanning engineering, science, management, humanities, and social sciences.

For more info: <https://pec.ac.in/>

#### ***ABOUT CSE DEPARTMENT***

The Department of Computer Science and Engineering at PEC plays a pivotal role in producing highly skilled software engineers. The department focuses on fostering innovation and providing a comprehensive education to excel in the growing software sector. Experienced faculty members deliver a rigorous curriculum, emphasizing hands-on training and personal development. The programs are designed for close industry interaction, reflected in the high demand for department graduates. The department strongly believes that neither the industry, nor the academics alone have the resources to adequately deal with the quest for innovative excellence in this field of computers, for global competitiveness.

#### ***ABOUT THE COURSE***

An intensive One-week Short-Term Course is being organized for students, research scholars and faculty of engineering and technological institutions. It is also open to persons hailing from the industry. The main objective of this short-term course is to provide a forum in which the participants obtain information about recent advances in Artificial Intelligence and Computing techniques. It also highlights the successful applications of these state-of-the-art techniques in various areas. It comprises sessions for the participants to introduce them to a number of modern tools, methodologies and their application/case studies from a wide variety of real-world engineering problems. Owing to the wide scope of this course, participants across the disciplines will be able to attend, appreciate and augment their knowledge to keep with the emerging advanced techniques.

Dynamic interactive sessions with prominent experts will be conducted in different domains of research. The technical program will include state-of-the-art seminars, discussion/presentation sessions, signifying the research challenges, insights and practical learning through Hands-on sessions on aforementioned research areas. The participants from academics/industry will be benefited immensely and this course will be a guiding light to learn and carry out research activities. This course aims to impart knowledge to the participants pertaining to theoretical as well as analytical treatment to existing problems. This course will equip the participants to develop a smart system incorporating the thrust areas and will make them well-versed in various application areas that may ease day-to-day and real-life activities. Further, this course will provide participants with opportunities for collaboration and networking among universities and institutions from India and abroad for promoting research and developing technologies.

## ***COURSE OBJECTIVES***

- To provide participants with a solid foundation in artificial intelligence techniques, and challenges in cloud computing, enabling them to comprehend complex concepts and methodologies.
- To familiarize participants with the latest advancements in artificial intelligence, cloud computing and blockchain technologies, including emerging trends and their applications in various industries.
- To enhance participant's ability to identify, analyze, and solve engineering application based challenges using artificial intelligence techniques.
- To offer practical, hands-on experience through workshops, case studies, and projects, allowing participants to apply theoretical knowledge to real-world problems.
- To facilitate an online environment for networking and collaboration among participants, fostering interdisciplinary discussions and idea exchange.

## ***HIGHLIGHTS***

*Expert lectures and extensive hands-on sessions cover the following topics:*

### ***Artificial Intelligence and Computing***

- ***Introduction to Artificial Intelligence and Machine Learning***
- ***Techniques and platforms for AI and ML***
- ***Advancements in Explainable AI***
- ***Convergence of AI with other technologies***

- ***Distributed computing to Blockchain***
- ***Edge to cloud continuum for distributed computing***
- ***Security aspects in AI and Computing***

### ***Applications***

- ***Blockchain solutions for different security requirements***
- ***Explainable AI for cybersecurity***
- ***Advancements in Communication Security***
- ***Vulnerability analysis***
- ***AI and IoT convergence: Practical Case Studies***
- ***Role of optimization algorithms in various domains***

## ***COURSE OUTCOMES***

- Knowledge enhancement and acquisition of deeper understanding of subject matter covered in the course.
- The evolution of more refined research ideas in the related domains from diverse participants.
- Collaboration within and beyond academia.

## ***CHIEF PATRON***

**Prof. (Dr.) Baldev Setia**  
**Director, PEC, Chandigarh**

## ***PATRON***

**Prof. (Dr.) Trilok Chand**  
**Head, Department of Computer Science and Engineering, PEC, Chandigarh**

## ***CONVENER***

**Dr. Poonam Saini**  
**Associate Professor, CSE**

## ***ORGANIZING COMMITTEE***

**All Faculty Members of CSE Department**

## ***RESOURCE PERSONS***

Eminent academicians affiliated to IITs, IIITs, NITs, other renowned institutes and Industry experts will deliver the sessions with practical demonstrations.

## ***REGISTRATION DETAILS:***

| <b>Category of participant</b>                        | <b>Registration Fee</b> |
|---|-------------------------|
| <b>Faculty, Research Scholars, and PG students</b>    | <b>Rs. 300+18%GST</b>   |
| <b>Industry Participants</b>                          | <b>Rs. 600+18%GST</b>   |
| <b>PEC Faculty, Research Scholars and PG students</b> | <b>Free</b>             |

### ***\*For outside PEC: online mode only***

Beneficiary Name - **Punjab Engineering College (Registration/Application A/C)**

Bank - **State Bank of India**

Account No. - **39083056639**

IFSC - **SBIN0002452**

MICRO - **160002008**

Address - **PEC Market, Sector 12, Chandigarh**

**For Registration Click here:**

<https://forms.gle/jEsCZEckTgGo9Hc4A>

**Last date of Registration: 30<sup>th</sup> June 2024**

## ***FOR ANY QUERY, CONTACT:***

**Dr. Kanu Goel, Dr Mamta Dabra, Dr. Satnam Kaur**  
**Department of CSE**

**Punjab Engineering College, Chandigarh, India-160012**

**Ph: +919501700467, +917840003370 , +918284836950**

**Email: {kanugoel, mamtadabra, satnamkaur}@pec.edu.in**