

Expected Learning Outcomes

Upon successful completion of the workshop, participants will be able to:

- Analyze and comprehend current and emerging shifts transforming next-generation STEM learning ecosystems.
- Leverage Generative AI platforms for meaningful classroom engagement, content generation, and personalized assessments.
- Critically evaluate the role of AI in Education by integrating ethical frameworks along with philosophical & psychological basis of learning and education
- Incorporate computational thinking concepts into daily classroom delivery and curriculum planning.
- Design cross-disciplinary, project-based STEM modules that drive critical thinking on pressing global issues
- Integrate sustainability, green technology, and inter-relatedness into academic frameworks for building connection with nature and environment.
- Construct outcome-based assessment strategies and leverage analytics to evaluate learning performance.
- Develop a tailored action plan to integrate GenAI, EdTech, and Sustainability into the teaching and learning practices within their respective home institutions and curricula.

Expected Impact

This program will empower educators with future-ready instructional competencies to leverage their teaching skills and reflect on their own pedagogy. By cultivating an adaptive, technology-enabled mindset, participants will be equipped to build inclusive, high-impact STEM learning environments aligned with NEP 2020 and NCFSE 2023.

Mode of Conduct of the Workshop:

The workshop will be conducted in an online mode using any of the online meeting platforms such as Google, WebEx or Zoom. The reading material and other resources for the sessions will be provided by the respective speakers which will be shared online via Google Drive links with all the participants.

Certificate of Course Completion:

All the participants will be awarded a certificate of course completion on the basis of their regular attendance, satisfactory performance in the online assessment and other online activities and assignments.

Date of the Online Workshop

14-18

December, 2026

The Last Date of Registration

30th

November 2026

Duration -

Morning 10 am - Evening 5 pm

Eligibility for Participation: STEM Teacher Educators and STEM Faculty from different Universities & Institutes, School Teachers at the Higher Secondary level.

Registration Fee:

₹ 3000

per Faculty

Registration Fee:

₹ 2000

Ph.D. Scholars working in STEM-related Areas.

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.

Programme Coordinator

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Online Workshop-cum-Faculty Development Program (FDP)

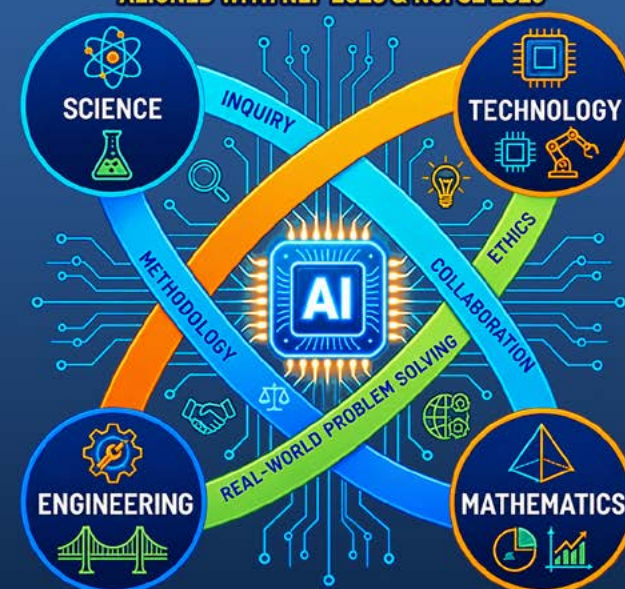
(Under Continuing Education Program, IIT Kharagpur)

**Empowering Educators for
Next-Generation STEM Education:**

**AI Integration
Sustainability
and
Innovative Pedagogy**

A 5-DAY ONLINE WORKSHOP CUM FDP

ALIGNED WITH NEP 2020 & NCFSE 2023



Background & Rationale

The rapid advancements in Generative AI, computational frameworks, and digital technologies are transforming the global education landscape. To keep pace with these evolving paradigms, educators must adapt their pedagogical strategies and embrace modern teaching methodologies to create more inclusive and engaging learning spaces.

Teachers and teacher educators serve as the cornerstone of this educational revolution by implementing the policy changes and new technologies in real classrooms at the grassroots level. This online workshop-cum-FDP provides a platform to improvise as well as advance the current pedagogy by integrating next-generation technology, promoting responsible AI usage, computational thinking, and sustainability-driven innovation for broader societal impact. The aim of this workshop is also to reimagine the curricular areas where cross-disciplinary and transdisciplinary connections can be made to provide deeper understanding and meaningful learning experiences. This is also in alignment with the NEP-2020 and NCFSE-2023.

Objectives of the Program

The workshop primarily aims at the capacity building of educators with modern skills and actionable instructional strategies. Specifically, the program aims to:

Explore Emerging Trends in STEM Education:

Familiarize participants with modern advancements and future paradigms in STEM education.

Harness the potential of Generative AI:

Develop functional expertise in applying Generative AI across instruction, curriculum design, and research.

Ethics of AI in Education:

Build ethical framework for integrating AI in Education

Embed Computational Thinking:

Train faculty to incorporate computational frameworks seamlessly into existing STEM subjects.

Promote Active Learning:

Encourage experiential, project-based, and student-centered pedagogical practices.

Drive Sustainability & Innovation:

Cultivate an understanding of sustainability-focused STEM initiatives and innovation ecosystems.

Advance Outcome-Based Design:

Strengthen capacity to formulate future-ready, outcome-based educational models and assessment systems.

Foster Cross-Disciplinary Synergies:

Facilitate collaborative, technology-enhanced teaching methodologies across diverse subjects.

Program Structure & Key Themes

Delivered in an interactive online format over 5 days, the program will combine expert keynote sessions, collaborative brainstorming sessions, interactive tool demonstrations, and problem-based hands-on activities.

The core thematic areas of the workshop include:

Theme 1: Future Horizons in STEM Education & Pedagogical Transformation

Theme 2: Generative AI Applications & AI-Assisted Pedagogy in STEM

Theme 3: Computational Thinking & Interdisciplinary Instructional Models

Theme 4: Robotics, AR/VR, Interactive Simulations, and Immersive Educational Tech for future STEM education

Theme 5: Ethics in AI- Building a framework for Education

Theme 6: Sustainability-Driven STEM Learning Models

Theme 7: Curriculum Re-engineering & Outcome-Based Education (OBE) Design

Theme 8: Innovative Assessment Strategies & Learning Analytics

Theme 9: Action Plan Formulation & Institutional Implementation

