(Form for the Submission of Proposal)

Global e-Learning Program for International Students and Faculties
(IIT-I Global e-Learning Program)
International Relations Office
Indian Institute of Technology Indore

1	Title of the Global e-Learning Program (e.g.: "Machine Learning in Energy Science")	**AI-Driven Circular Economy: Frameworks for Sustainable Innovation**
2	Proposed dates and duration of the program	June 08-13, 2026
3	Name of the Course Coordinator(s) (Name, Designation, Department, email, contact number)	**Prof. Pavan Kumar Kankar, Professor, Department of Mechanical Engineering** **Email: pkankar@iiti.ac.in; Contact: +91-731-6603427** **Prof. Sandeep Chaudhary, Professor, Department of Civil Engineering** **Email: schaudhary@iiti.ac.in; Contact: +91-731-6603256**
4	Details of the Course Instructor(s) from IIT Indore (Name, Designation, Department, email, contact number)	**Prof. Pavan Kumar Kankar, Professor, Department of Mechanical Engineering** **Email: pkankar@iiti.ac.in; Contact: +91-731-6603427** **Prof. Sandeep Chaudhary, Professor, Department of Civil Engineering** **Email: schaudhary@iiti.ac.in; Contact: +91-731-6603256**
5	Names of the Proposed invited experts outside IIT Indore (Name, Designation, Department/Institute, email, contact number)	**Dr. Ayon Chakraborty, Associate Professor, Institute of Innovation, Science and Sustainability (IISS), Federation University Australia** **Email: a.chakraborty@federation.edu.au; Contact: 03 5327 6881**
6	Details and Modules of the program (Lectures and Tutorials)	• **Lecture 1:** Introduction to Circular Economy: principles (reduce, reuse, recycle, recover, redesign, etc.) and Linear vs. Circular systems: environmental and economic perspectives • **Lecture 2:** Resource efficiency and Circular Economy adoption in small and medium enterprises • **Tutorial 1:** Group activity: Map out a linear supply chain (e.g., electronics or fashion) and identify where CE principles could be applied

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		• **Lecture 3:** Introduction to AI: core concepts (machine learning, deep learning, optimisation) and AI in sustainability: opportunities and risks • **Lecture 4:** Sustainable Construction Material • **Tutorial 2:** Simulation: Groups propose AI solutions for optimising resource recovery in a chosen industry (textiles, electronics, plastics, etc.)
7	Target groups (UG/PG/Ph.D. Students or Faculties)	UG/PG/Ph.D. Students and Faculties
8	Pre-Requisites and Minimum Education Qualification (if any)	None
6	How will this program benefit the participants? (in bullet points)	Throughout this course, participants will explore how AI can be applied to circular strategies, ranging from • smart product design, • predictive maintenance, • resource optimization, and • intelligent CE systems Real-world case studies, interactive discussions, and applied exercises will provide both inspiration and practical pathways to implement CE within their organizations.
Submitted by 26/12/2025 (Signature and Date) Course Coordinator(s)		**Approval and Remarks** (Signature and Date) Dean, International Relations, IIT Indore