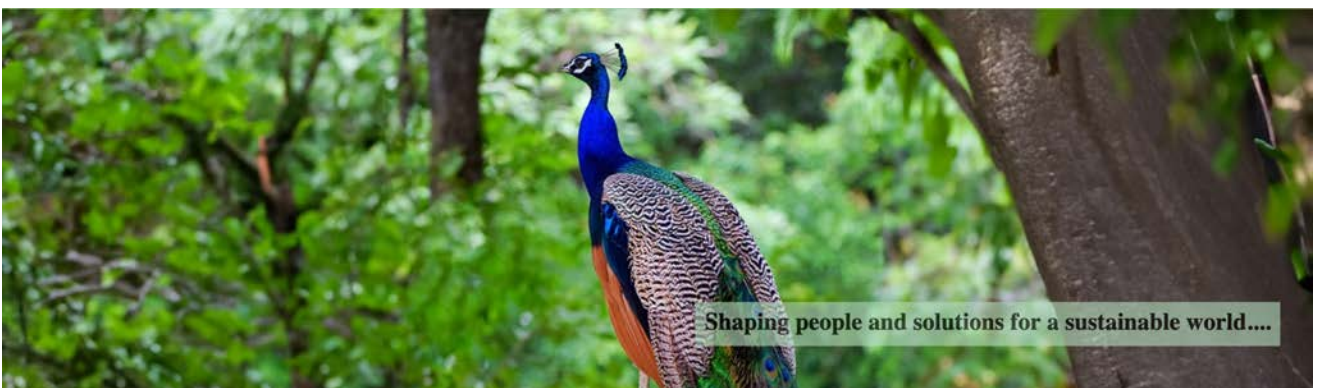
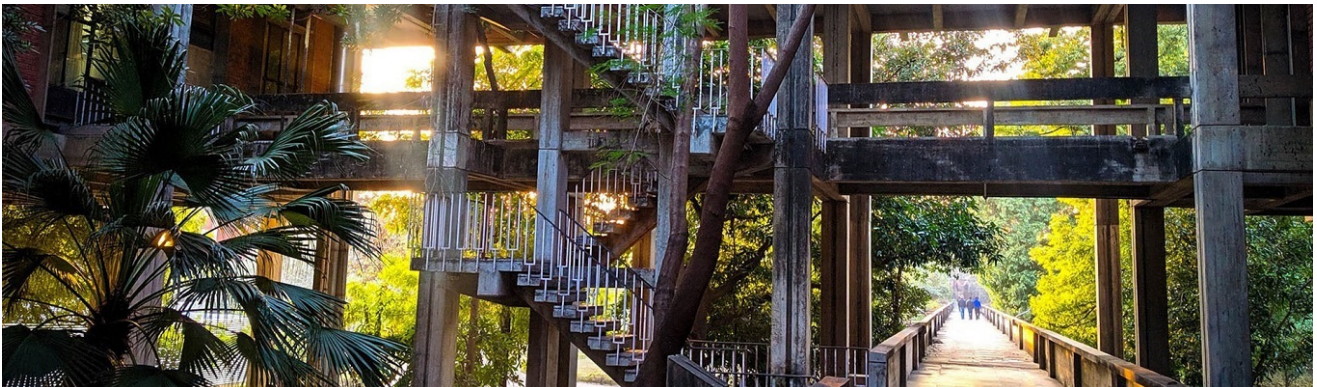




Indian Institute of Technology Kanpur

Kotak School of Sustainability

M.Tech program in **Artificial Intelligence for Sustainability**



Website: <https://iitk.ac.in/kss>

About the M. Tech. Program

(Offered by Kotak School of Sustainability)

India's First AI Program for Climate Change and Sustainability

This program is designed to tackle global challenges like climate change and sustainability by seamlessly integrating Artificial Intelligence (AI) with environmental science, water management, and urban sustainability.

Why Choose This Program?

Comprehensive foundational courses on AI, Climate, Environment, Water Infrastructure, Smart Cities, and Future of Urbanization.

Unique modules on Climate Change, Blockchain for Carbon Footprint, Sustainability of AI, and Entrepreneurship.

Tailored for those aiming to become Sustainability Officers, Senior Executives, Policy Makers, or to pursue a career in Research and Innovation.

Shape the future with cutting-edge skills in AI and sustainability!

Course Structure

Semester: 1. Normal Semester Credit Required :36				
Subject Type	Subject No.	Subject Name	L-T-P-D	Credit
Theory (Core)	CE 663	Humans, Environment and Sustainable Development	3-0-0-0	9
Theory (Core)	KSS 6XX	Sustainability of AI	3-0-0-0	9
Theory (Core)	KSS 6XX	Math & Computation using Python	3-0-0-0	9
Theory (Core)	CS771 or Equivalent*	An introductory course on AI/ML	3-0-0-0	9
Total				36
Semester: 2. Normal Semester Credit Required :36				
Lab (Core)	KSS 6XX	Applications of AI in Sustainability Lab	1-0-3-0	9
Electives (3 Regular Courses, or 6 Modular Courses, or a combination)	--	Elective - I	3-0-0-0	5/9
	--	Elective - II	3-0-0-0	5/9
	--	Elective – III	3-0-0-0	5/9
	--	*Elective - IV	3-0-0-0	5/9
	--	*Elective - V	3-0-0-0	5/9
	--	*Elective - VI	3-0-0-0	5/9
Total				36-39
Semester: 3. Normal Semester Credit Required :36				
Seminar	KSS 697	M. Tech. Seminar I	0-0-0-0	0
Thesis	KSS 699	M. Tech. Thesis	0-0-0-9	36
Total				36
Semester: 4. Normal Semester Credit Required :36				
Thesis	KSS 699	M. Tech. Thesis	0-0-0-9	36
Total				36

Electives

Course No.	Course Name	L-T-P-D	Credit
KSS 6XX	Smart Cities-System Dynamics Models	3-0-0-0	9
KSS 6XX	Smart Water Infrastructure Engineering	3-0-0-0	9
KSS 6XX	Water Economics: Policy and Governance [Modular]	3-0-0-0	5
KSS 6XX	Technology, Society, and the Future of Urbanization	3-0-0-0	9
KSS 6XX	Roadmap to Innovation, Sustainability, and Entrepreneurship	3-0-0-0	9
KSS 6XX	Physics and AI Approaches to Climate Modeling, Resilience & Sustainability	3-0-0-0	9
KSS 6XX	Sustainable Water Systems with AI and Automation	3-0-0-0	9
KSS 6XX	Blockchain for Carbon Footprint mapping across Value Chains	3-0-0-0	9
IDC 606	High-performance Computing for Science and Engineering	3-0-0-0	9
CE 669	Atmospheric Physics and Chemistry	3-0-0-0	9
CE 762	Fundamentals of Atmospheric Modelling	3-0-0-0	5
CE 763	Solid and Hazardous Waste Management	3-0-0-0	5
SEE 622	Sustainable Energy – Enabling Net Zero Emissions	3-0-0-0	9
SEE-628	Policy Processes and Analytical Methods: Application to Climate Policies	3-0-0-9	9
SEE-629M	Ecology, Equity and the Economy	3-0-0-5	9
SEE-618	Energy Efficient Building Design	3-0-0-9	9
SEE-615	Solar Thermal Engineering	3-0-0-9	9
SEE-626M	Ecological Principles and Biodiversity for Sustainability	3-0-0-9	9
CE716	Project Management and Controls	3-0-0-0	9
CE648A	Repair and Rehabilitation of Concrete Structures	3-0-0-0	9
CE645A	Basic Quality and Safety Management in Construction	3-0-0-0	9
CE657	Construction Economics and Infrastructure Financing	3-0-0-0	9
ECO501A	Environmental Economics And Policy	3-0-0-0	9
ECO747A	Environmental Economics Legislation And Social Impact	3-0-0-0	9

Faculty & Affiliates

Prof. S.N. Tripathi (*Jointly with Department of Civil Engineering*)
Dean of Kotak School of Sustainability

Prof. Mahendra K Verma (*Jointly with Department of Physics*)

Visiting Faculty:

Prof. Venkatachalam "Ram" Ramaswamy
Director, Geophysical Fluid Dynamics Laboratory, Princeton

Mr. Corey Glickman
Visiting Professor of Practice
Founder Greenman Black

Shri. G. Asok Kumar
Special Secretary & Director General
National Mission for Clean Ganga, Ministry of Jal Shakti, Government of India

Affiliates:

Prof. Manoj Tiwari (*Department of Civil Engineering*)
Prof. Vipul Arora (*Department of Electrical Engineering*)
Prof. Piyush Rai (*Department of Computer Science and Engineering*)
Prof. Sruti Srinivasa Ragavan (*Department of Computer Science and Engineering*)
Prof. Abhijith G. R. (*Department of Civil Engineering*)
Prof. Pranamesh Chakraborty (*Department of Civil Engineering*)
Prof. Anindita Chakrabarti (*Department of Humanities and Social Sciences*)
Prof. Jillet Sam (*Department of Humanities and Social Sciences*)
Prof. Devlina Chatterjee (*Department of Management Sciences*)

Department & Centres of the School of Sustainability

IITK-Rice Collaborative Center

www.iitk.ac.in/rice-iitk

Department of Sustainable Energy Engineering

www.iitk.ac.in/see

Chandrakanta Kesavan Center for Energy Policy and Climate Solutions

www.iitk.ac.in/new/chandrakanta-kesavan-centre-for-energy-policy

ATMAN (Advanced Technologies for Monitoring Air-quality iNdicators)

www.iitk.ac.in/new/establishes-coe-named-atman-for-monitoring-air-quality

Center for Energy Regulation (CER)

www.cer.iitk.ac.in

The Centre for Environmental Science & Engineering

www.iitk.ac.in/cese

The Center for Ganga River Basin Management and Studies (cGanga)

www.cganga.org

Smart City Pilot Project (Ministry of Power and IITK)

www.iitk.ac.in/smartcity

UI-Assist

www.uiassist.org

Thematic Centers of Excellence (COE)



Environment, Ecology and Climate



Sustainable Design, Infrastructure and Practices



Water Science and Engineering



Economics, Policies and Regulations



Materials and Devices



Sustainable Communities



Technology Integration



Broad Research Areas



**Sustainable
Energy and Use of
Resources**



**Environment,
Climate and
Ecology**



**Sustainable
Infrastructure**



**Sociology, Policy
and Economics**



**Sustainable
Practices**

Contact

Prof. Mahendra K Verma

Email: mkv.dpgc@gmail.com

Mr. Vinit Dwivedi

Senior Assistant

Email: vdwiv@iitk.ac.in

Phone No.: +91-512-679-7199

Website: <https://iitk.ac.in/kss>