



University Institute of Engineering & Technology CSJMU, Kanpur

(previously known as: Institute of Engineering and Technology, CSJM University, Kanpur)



Department of Materials Science and Metallurgical Engineering (MSME)

UIET, CSJM University KANPUR

<http://www.uietkanpur.com/msme.php>

ESTABLISHMENT

- The Department was established in **2004** as Materials Science and Engineering and renamed in 2008 as **Materials Science and Metallurgical Engineering**.
- **Department offers 4 years B.Tech. course to 66 students per year.**
- This is the **Second Institute** in this region offering an Under Graduate Course in Materials Science and Metallurgical Engineering other than IIT Kanpur.

What is Materials and Metallurgical Engineering ?

- Materials Science and Metallurgical Engineering is a core branch of engineering that deals with the study of minerals, their processing and their transformation.
- The program comprises various aspects of minerals including their mechanical behavior, physical metallurgy, thermodynamics, kinetics etc.
- The programme prepares the candidates to deal with the production of various products using different materials and elements, including electrical and chemical products or simply metals.

What is Materials and Metallurgical Engineering?

- Metals are the most recycled material on earth. Metallurgical engineers focus on the production of metals, alloys and study of their properties.
- Metallurgical engineers help to make products stronger, more durable, lighter weight and more energy-efficient, especially when utilizing recycled materials rather than ores.
- Students learn about
 - The extraction of metal from minerals, wastes and recycled materials.
 - The design of metallic materials that possess desired mechanical, physical and chemical properties and the production of components from selected metals and alloys.

An interrelationship between MSME and other branches



MSME in UIET

❑ Courses offered in the field of

- ❑ Physical metallurgy
- ❑ Mechanical metallurgy
- ❑ Extractive metallurgy
- ❑ Materials Thermodynamics
- ❑ Manufacturing of materials
- ❑ Solid State Materials
- ❑ Computational Material science

❑ Lab facilities

- ❑ Metallographic lab
- ❑ Ceramic lab
- ❑ Corrosion lab
- ❑ Furnace lab
- ❑ Materials Characterization lab
- ❑ Computer Lab

Faculty Profile MSME

- **Ms. Bhoomika Yadav (HOD) , Ph.D IITK (Ongoing)**
- **Dr. Vijay Kumar Kashyap, Ph.D IITK**
- **Er. Shivendra Trivedi, B.Tech IITK**
- **Dr. Anju Dixit, Ph.D UPR, USA**
- **Er. Ankur Katiyar, M.Tech IITBHU**
- **Dr. Alka Gupta, PhD IITK**
- **Dr. Arun Kumar, Ph.D IITKhp**

Career and Job Prospects

- There is a great need of **Materials and Metallurgical Engineers** in the manufacturing sector as they are required for technical support, supervising the shop-floor and managing the production.
- Another industry with good opportunities for **Material Engineers** is the telecommunication Industry.
- **Metallurgical Engineers** are required in every industry and enterprise that produces, buys, sells, refines and manufactures metallic products.
- In India young **Metallurgical** graduates can expect some exciting career opportunities in government undertakings as well as in private companies.

Career and Job Prospects

- **Metallurgical** engineers have opportunities both in India and abroad. They can be hired by public sector companies like SAIL, IOCL, BHEL, GAIL etc.
- Professionals in this **career** can also opt for teaching jobs in universities and colleges.
- Materials Science and Metallurgical students also get placed in various **research oriented programs** of public and government sectors where they are offered a decent remuneration.
- Materials Science and Metallurgical Engineers are in huge demand due to their requirement in every field.

Major Career options

Some of the major career options to choose from after completion of the MSME course include:

Job profile	Description
Production Engineer	To plan the incoming material for heat treatment charges, and sample prepare for metallurgical evaluation.
Metallurgist	To beneficiate the raw materials, creation of fuels at low cost, selecting equipment for mechanical working and producing metals, alloys, ceramics and composite materials.
Geotechnical Engineer	Responsible for the engineering practices and extraction of minerals and ores.
Product development manager	A managerial job to manage the initial processes in production.

TOP RECRUITERS

The companies which provide good placements with added benefits and perks in the field of Metallurgy and Materials Science

☐ **MAGMA METALS**

☐ **PHELPS Dodge Corp.**

☐ **NEWMONT Gold Co.**

☐ **AMAX GOLD**

☐ **STILL WATER Mining**

☐ **ASARCO**

☐ **B.R.G STEEL PLANT**

☐ **RIMJHIM ISPAT**

☐ **JSPL**

☐ **RDSO**

☐ **BRG**

☐ **JINDAL STEEL**

☐ **BHUSAN STEEL**

☐ **RAILAYS**

☐ **DRDO**

Recent Placement of MSME Students

Company/Private Organizations		Government Organizations
BHEL	RIMJHIM ISPAT	RAILAYS
JSPL	JSW	DRDO
RDSO	BHUSAN	CSIR
BRG	B.R.G STEEL PLANT	IITs
RDSO	POSCO	NITs
A V BALL	KIRLOSKAR	
HONDA AUTO	HONDA CARS	
INTERTECH	BYJUS	
ARNIUM TECH	GLOBAL	
ESSAR STEEL	AUTOTECH	
	TATA STEEL	

Students engaged in PG Programme

NAME	PROGRAM
CHAMAN SHRIVASTAV	MS (BELGIUM)
APOORVA CHATURVEDI	Ph.D (NTU SINGAPORE)
ABHISHEK CHATURVEDI	Ph.D (IISC BANGLORE)
SAURABH DIXIT	Ph.D (IISC BANGLORE)
FAIZAL SIDDQUI	Ph.D (IIT KANPUR)
RITA MAURYA	Ph.D (IIT KANPUR)
PRAMANSHU TRIVEDI	Ph.D (IIT KANPUR)
PRAVAN KATIYAR	Ph.D (IIT KANPUR)
PRINCE	Ph.D (IIT KANPUR)
GAURAV JHA	Ph.D (ISM DHANBAD)

Students engaged in PG Programme

NAME	PROGRAM
SWETNAK DUBEY	M.TECH IIT ROORKEE
AYUSH GANGWAR	M.TECH IIT MUMBAI
ROHIT GANGWAR	M.TECH IIT BHU
GANESH BHANDARI	M.TECH ISM BHANBAD
SHIPRA BAJPAYEE	Ph.D (IIT KANPUR)
SHRUTI DUBEY	Ph.D (IIT KANPUR)
SHAKTI SINGH	Ph.D (IIT KANPUR)

Recent Achievements (2020-2021)

Name of the student	Achievement
Dr. Prince Kumar Singh	Joined as an Assistant Professor in IIT Ropar-2020
Dr. Reeta Mauraya	Joined as an Assistant Professor in NIT Hamirpur-2020
Dr. Prvan Kumar	Joined as an Assistant Professor in NIT Srinagar-2021
Er. Ankur Aghinotri	IIM SAIL GOLD AWARD (BEST FERROUS PAPER AWARD)-2021
Er. Rohit Jha	Got Selected for PMRF Program (<u>Prime Minister's Research Fellows Scheme, 2021</u>)

Recent GATE Selected Students

Name of the student	YEAR
VISHAL BHASKAR	2020
AJAY MISHRA	2019
SWETNAK DUBEY	2017
AYUSH GANGWAR	2017
GANESH BHANDARI	2017
SABA AHMAD	2016



Materials Science and Metallurgical Engineering (MSME) UIET, CSJM University, Kanpur

UG Programme B.Tech. (4 Years)

Materials Science and Metallurgical Engineering

Specializations

- Physical Metallurgy
- Mechanical Metallurgy
- Extractive Metallurgy
- Process Metallurgy
- Corrosion Engineering
- Materials Science

Department Laboratories

- Materials Characterization Lab
- Powder Metallurgy Lab
- Metallography Lab
- Microscope Lab
- Corrosion Engineering Lab
- Ceramic Lab
- Furnace Lab
- Computer lab



Faculty

Dr. Vijay Kumar Kashyap (Ph.D., IIT-K)
Dr. Anju Dixit (Ph.D., UPR USA)
Er. Ankur Katiyar (M.Tech, IIT-BHU)
Dr. Alka Gupta (Ph.D., IIT-K)

Bhoomika (M.Tech, IIT BHU, PhD, IITK, ong..)

Er. Shivendra kr. Trivedi (B.Tech, IIT-K)

Dr Arun Kumar., Ph.D (IIT KGP)



- B. Tech. in MSME is running at very few Institutes, except IIT's.
- Job opportunities under this branch are more than the students graduated per year, as only 200 students graduate per year in north India under this branch.
- A large number of students get admission in IIT's (M.Tech./ Ph. D. courses) and pursue higher studies.

Alumni Placed in

IOCL, JSPL, JSW, HINDALCO, RDSO, HONDA, OFC, DMSRDE, BRG STEELS, ESSAR STEELS, BHUSAN STEEL, FRONTIER ALLOY STEEL, INDIAN RAILWAYS, LOHIA STARLINGER, ETC.

Visit us - www.uietkanpur.com/msme.php

**Thank
You**



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